SALINAS BIKEWAYS PLAN

2002

CITY OF SALINAS

2002
SALINAS BIKEWAYS PLAN
LIST OF PLAN PARTICIPANTS

CITY COUNCIL

Anna Caballero, Mayor
Sergio Sanchez, District 1
Roberto Ocampo, District 2
Janet Barnes, District 3
Gloria De La Rosa, District 4
Maria T. Giuriato, District 5
D. Jyl Lutes, District 6

TRAFFIC AND TRANSPORTATION COMMISSION

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Dorothy Mora
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Jim Bricker
John Viarengo, Chairperson
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BICYCLE & PEDESTRIAN ADVISORY COMMITTEE

Paul Aschenbrenner, Chairperson
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Crystal Paul, AMBAG
Kyrrha Sevco, AMBAG
Christina Watson, TAMC

CITY STAFF

John Fair, Public Works Director
Rob Russell, Deputy City Engineer
James Serrano, Asst. Transportation Planner
Georgia Propp, Engineering Aide II
Hilda Garcia, Administrative Aide

Recommended for approval - Salinas Bicycle and Pedestrian Advisory Committee on ___August 7, 2002___

Recommended for approval - Salinas Traffic and Transportation Commission on ___September 12, 2002___

Recommended for approval – Salinas Planning Commission on ___November 6, 2002___

Approved by the Salinas City Council on ___December 10, 2002___

Certified by the Transportation Agency for Monterey County on ___November 27, 2002___

Approved by Caltrans Bicycle Facilities Unit on ___February 3, 2003___

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RESOLUTION NO. 18113 (N.C.S.)

A RESOLUTION OF THE SALINAS CITY COUNCIL ADOPTING THE 2002 SALINAS BIKEWAYS PLAN

WHEREAS, the Salinas City Council adopted the 2002 Salinas General Plan which requires maintenance of acceptable levels of service, transportation system and demand management, and encouragement of alternative modes of transportation; and

WHEREAS, the General Plan calls for the provision of an extensive, safe public bicycle network that provides on-street and off-street facilities; and

WHEREAS, at their August 7, 2002 meeting, the Salinas Bicycle and Pedestrian Advisory Committee reviewed and provided comments for the 2002 Bikeways Plan before recommending adoption of said Plan to the City Council; and

WHEREAS, at their meeting on September 5, 2002, the Transportation Agency for Monterey County (TAMC) Bicycle and Pedestrian Committee reviewed and provided comments for the 2002 Bikeways Plan before recommending approval of said Plan to the TAMC Board; and

WHEREAS, at their September 12, 2002 meeting, the Salinas Traffic and Transportation Commission reviewed the 2002 Salinas Bikeways Plan and recommended adoption of said Plan to City Council; and

WHEREAS, at their November 6, 2002 meeting, the Salinas Planning Commission reviewed the 2002 Salinas Bikeways Plan and recommended adoption of said Plan to the City Council; and

WHEREAS, in order for the City to qualify for State and Federal funding, the City must adopt and forward the Salinas Bikeways Plan to the California Department of Transportation for its approval.

NOW, THEREFORE BE IT RESOLVED BY THE COUNCIL OF SALINAS that the Council hereby adopts the 2002 Salinas Bikeways Plan, a copy of which is attached hereto as Exhibit "A" and by this reference incorporated herein.

PASSED AND ADOPTED this 10th day of December, 2002, by the following vote:

AYES: Councilmembers Barnes, De La Rosa, Guiriato, Lutes, Ocampo, Sanchez, and Mayor Caballero

NOES: None

ABSTAIN: None

Approved:

Mayor

Attest:

City Clerk

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TAMC
FOR MONTEREY COUNTY

Regional Transportation Planning Agency · Congestion Management Planning
Local Transportation Commission · Monterey County Service Authority for Freeways & Expressways

November 27, 2002

David Priebe
Bicycle Facilities Unit (BFU), MS-1
Local Assistance Program
P.O. Box 942874
Sacramento, CA 94274-0001

Subject: 2002 Salinas Bikeways Plan

Dear Mr. Priebe:

The Transportation Agency for Monterey County (TAMC) is the Regional Transportation Planning Agency (RTPA) and the congestion management agency (CMA) for Monterey County. TAMC staff and the Bicycle and Pedestrian Facilities Advisory Committee (BPC) have reviewed the 2002 Salinas Bikeways Plan and endorse the plan for Caltrans certification.

The BPC is a committee comprised of citizen volunteers representing each of Monterey County's five districts and twelve cities as well as the Monterey Peninsula Regional Park District (MPRPD), the Monterey Bay Unified Air Pollution Control District (MBUAPCD) and the Velo Club Monterey. The Committee meets monthly to review, discuss and vote on matters pertinent to pedestrian and bicycle issues. The Committee provides input to Monterey County decision-makers regarding pedestrian and bicycle transportation infrastructure, safety and maintenance. On September 5, 2002, the BPC approved the 2002 Salinas Bikeways Plan and supported the City of Salinas Bicycle Transportation Account (BTA) application for the North Main Street Bike Lanes Project and the Abbott Street Bike Lanes Project.

TAMC staff hereby certifies that this plan complies with Section 891.2 of the Caltrans Streets and Highways Code, TAMC's Regional Transportation Plan (RTP) and TAMC's General Bikeways Plan.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Christina Watson
Transportation Planner
Bicycle and Pedestrian Facilities Advisory Committee Coordinator

CC: Rob Russell, City of Salinas, via fax to (831) 758-7935

STATE OF CALIFORNIA—BUSINESS, TRAN RTATION AND HOUSING AGENCY GRAY DAVIS, Governor

DEPARTMENT OF TRANSPORTATION
DIVISION OF LOCAL ASSISTANCE, MS 1
1120 N STREET
P. O. BOX 942874
SACRAMENTO, CA 94274-0001
PHONE (916) 653-0036
FAX (916) 654-2409

Flex your power!
Be energy efficient!

February 3, 2003

Mr. James Serrano
Public Works Department
City of Salinas
200 Lincoln Avenue
Salinas, CA 93901

Dear Mr. Serrano,

The California Department of Transportation Bicycle Facilities Unit has completed its review of the Salinas Bikeways Plan 2002, and finds that it complies with Section 891.2 of the Streets and Highway Code.

The plan allows the City of Salinas to be eligible to apply for funds from the Bicycle Transportation Account program.

If you have any questions, please contact me by telephone at (916) 653-0036 or e-mail at david_priebe@dot.ca.gov.

Sincerely,

DAVID PRIEBE
Bicycle Facilities Unit
Division of Local Assistance

Enclosure

"Caltrans improves mobility across California"

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PURPOSE OF THE SALINAS BIKEWAYS PLAN

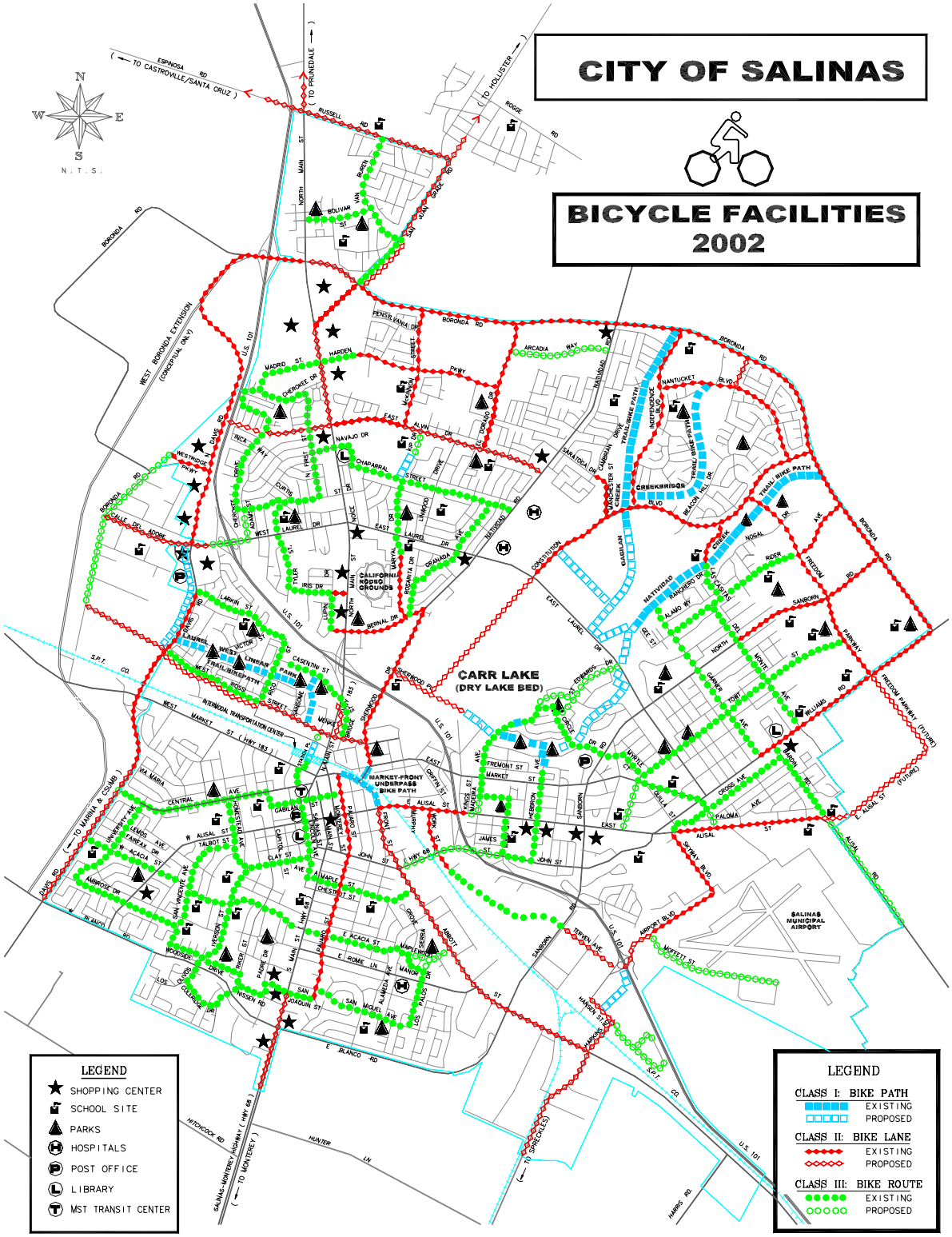
Bicycling has become an important part of Salinas' overall transportation system. In an effort to further improve bicycling opportunities, the City of Salinas developed a comprehensive Salinas Bikeways Plan. The original Bikeways plan was adopted in 1991, and was updated in 1996 and 1998. This Bikeways Plan, which is an update of the 1998 document, was prepared by the Development and Transportation Section of the Salinas Public Works Department under the guidance of the Salinas Bicycle and Pedestrian Advisory Committee (SBPAC). As with the 1998 Plan, both the General Bikeways Plan for Monterey County, and California Department of Transportation (Caltrans) Bikeway Planning and Design guidelines contained in the Highway Design Manual (Chapter 1000) were consulted in preparing this document. This 2002 Bikeways Plan presents revised goals and actions along with maps for identifying the city's existing and proposed bikeways, bike parking facilities, bike support facilities, routes for buses with bike racks, and the design requirements for those facilities. This plan satisfies the General Bikeways Plan requirements set forth by the California Department of Transportation (Section 891.2 of Streets and Highways Code).

With the growing increase of travel in the state and country, emphasis is now being placed on development of facilities and programs to reduce the number of trips being made by single occupant vehicles (SOVs). In an effort to reduce SOV trips, ride sharing and alternative transportation modes are being promoted. Bicycling is one of the cleanest, least expensive, and most efficient means of transportation. It is also a recreational and health opportunity for those who choose this mode of transportation. Bicycling is an especially effective transportation mode for trips of 5 miles or less. In order for bicycling to be effective, however, well designed, convenient, and safe facilities must be made available for bicyclists and integrated into an overall bike network. This plan was prepared to identify and address those needs.

MISSION STATEMENT

Make bicycling opportunities in the City of Salinas more available to the bicycling community; provide safe, convenient, connected and enjoyable bikeways for citizens to use; improve bike parking facilities throughout the community to further enhance opportunities; promote safety and education programs; and develop and provide information for all citizens within Salinas to encourage bicycle use.

City of Salinas Bikeways Map



GOALS

- Make bicycling in Salinas safe, convenient and pleasurable for daily trips to work, school, errands and other transportation modes as well as for pleasure and recreational trips. Build a network which accommodates bicyclists of all ages and riding levels.

- Promote cycling as a safe, healthful, inexpensive, and environmentally benign alternative to auto travel for short trips.

- Integrate bikeways, bike facilities, and programs into all planning activities.

- Encourage development of bicycle safety education and enforcement programs to improve bicycle skills, achieve better compliance with bicycle/traffic laws, and promote safety for all cyclists.

- Develop and upgrade bikeways and related facilities to provide improved cycling opportunities, and improve paved surfaces for bicycle use.

- Provide secure and visible bicycle parking facilities that meet the needs of all bicyclists.

- Provide improved bicycle facilities connecting north, south and east Salinas.

- Work with the Monterey County Water Resource Agency to develop bicycle and pedestrian paths along Reclamation Ditch No. 1665 within the City limits.

- Work with Monterey County Public Works to develop a bicycle facility extending from South Salinas to Spreckles via Harkins Road.

- Work with the Transportation Agency for Monterey County's Bicycle and Pedestrian Committee to develop a bicycle facility from southwest Salinas to the Monterey Peninsula.

- Uniformly apply Caltrans and City design standards and policies that promote safe, convenient and pleasurable bicycle facilities to encourage bicycle travel.

- Pursue all available bicycle facility funding opportunities.

- Remove and/or reduce safety hazards that can be addressed.

- Increase the bicycle trip rate to 5% of all trips by the year 2010.

- Pursue a city-wide bicycle and pedestrian safety education program to reach the majority of Salinas elementary school students

BACKGROUND

The City of Salinas is located approximately 100 miles south of San Francisco and 60 miles south of San Jose within the Salinas Valley; surrounded by agricultural lands. Salinas is primarily an agricultural community with a major industrial area located in the southern section of the City. As the county seat, Salinas accommodates most of the Monterey County and all City of Salinas government operations. Additionally, Salinas provides regional shopping opportunities for Monterey County with such areas as Northridge Mall, Harden Ranch Plaza, and the Westridge Shopping Center; all of which are located in the northern end of the City. Residential development has recently expanded in the north and northeastern sections of the City. The City of Salinas recently updated their General Plan; the Plan to identify future growth. The Plan also identifies housing opportunities for the next 10-20 years. Salinas' population, which is now 149,376, is expected to grow to around 183,783 by 2020 (*Association of Monterey Bay Area Governments Forecast of Population Projections 2000 - corrected for Census error*).

Salinas itself is generally flat which makes bicycling a practical and convenient mode of travel. Schools and parks are dispersed throughout the community. Major areas of employment are generally located in: the central city near Oldtown Salinas (professional businesses, government, shopping and restaurants); two hospital and medical office districts along Romie Lane and Natividad Road; and the industrial area in the southeastern section of Salinas (Airport Business Park, McCormick & Company, Mann Packing, and Household Card Services).

Figure 1-Bikeway at Romie Lane medical office district.

Historically, cycling has been limited as a mode of transportation, but this is changing as the bicycle network expands. Current surveys of afternoon bicycle travel in residential neighborhoods showed that cycling activity increased by 20% in comparison to that observed in 1995. Staff also observed a 47% increase in bicycle ridership since 1999.

The biggest challenge with bicycling in Salinas is that biking from the northern and eastern ends of the City to the downtown is blocked by US 101 and the Union Pacific Railroad, which restricts bicycle access. Reduced road widths, high traffic volumes and auto speeds hamper bicycle commuting. An improved bikeways network will greatly encourage bicycling as a mode of transportation.

In 1988, the Salinas Bicycle and Pedestrian Advisory Committee (SBPAC) was created to establish a bike plan within Salinas. The original Bikeways Plan was recommended by the SBPAC and adopted by the Salinas City Council on May 7, 1991.

To date, the City has been successful in establishing the bikeways shown on the current Salinas Bikeway Map (page 2) which is the first step in developing an overall network. These bikeways resulted from a combination of efforts including: developer installed bikeways in the Harden Ranch, Northeast Salinas, Williams Ranch, and Westridge/Auto Center development areas; city and developer installed bike racks; installation of bikeways by the Public Service Section of the Public Works Department; construction of bikeways with secured bike funding through City Capital Improvement Projects; and a Salinas Bike Connections Study to determine feasible connections between east, north and south Salinas funded with Congestion Mitigation and Air Quality (CMAQ) and Transportation Development Act (TDA) funds.

In the late 1990's 3 miles of bike lanes were installed on North Davis Road (Laurel Drive to US 101), Sanborn Road (Del Monte Rd to Boronda Rd), Freedom Parkway (Constitution Boulevard to Williams Road) and Boronda Road (Natividad Creek to Williams Road). During this same time frame, staff completed a signing program for 27 miles of Class III routes and the inclusion of additional bike improvements through our Capital Improvement Program (For descriptions of the different classes of bikeways, please see Appendix B). Funding came primarily from 2% Bike Lane Account Funds, Congestion Mitigation and Air Quality (CMAQ) funding, and local air district grants (AB2766); with matching funds coming from gas tax money.

Over the past 4 years the City completed bike lane installations on Sherwood-Bernal-Maryal to connect North and South Salinas, and also completed bike lanes on East Alisal Street (Front Street to Griffin Street) to connect East and South Salinas. Most recently, bike lanes were included on San Juan Grade Road (N. Main Street to Boronda Road), Alvin Drive (N. Main Street to M^{c}Kinnon Street), El Dorado Drive (Alvin Drive to Harden Parkway), Work Street (Alisal to John), and some other minor links as part of the City's Street Resurfacing Program. This added an additional 1.58 miles of bicycle lanes to the City's network.

Table 2 on page 36 lists projects completed through 2001. Table 4 on page 44 identifies grant funding secured by the City to expand the bicycle system/network and parking facilities, from 1994 to present

The SBPAC also worked with City staff to update the Salinas City Bicycle Ordinance. The combination of the City's commitment to improve bike facilities within the City, the SBPAC's work in developing a plan and promoting bicycling, and SBPAC's representative involvement in the County Bike Committee culminated in the City of Salinas being awarded the Transportation Agency of Monterey County's first "Best Bicycle Efforts" award in 1994. The award is given to the local agency who made the greatest contributions to promoting safe and efficient cycling in their area.

In 1998, Salinas was granted an award from the Association of Monterey Bay Area Governments (AMBAG) for the Best Public Agency Alternative Transportation Program due to the City's efforts to encourage cycling and other alternative modes of transportation. Most recently, the City was honored as the Commute Alternatives Public Agency by AMBAG for 2001.

Although these accomplishments in the City are respectable, there is still much work that needs to be done in order to realize a first class bike network for the city and to instill cycling in the public's mind as a viable means of transportation. Coordinated efforts between the SBPAC, the City, other local agencies, and the development community will be the way to achieve this goal.

The City has sponsored five very successful annual Bike Week programs attracting hundreds of local residents and garnering extensive media attention. Activities have included "Bike to Work" days, bike parades and races, a bicycle information center with daily programs and entertainment events, and Council-SBPAC meetings to identify goals and issues associated with bicycle use in Salinas.

The Three E's

Thus, the City and SBPAC have worked for more than a decade to promote bicycling in the community; focusing on the three E's (Engineering, Education and Enforcement). So far, the main focus has been placed on ***Engineering*** – providing safe and convenient bikeways, parking and support (showers and lockers) facilities. The City Council is committed to bring area streets up to a good condition (or better) and this further enhances the riding surface and safety for bicyclists. The results of these efforts have been the development of good Class II and Class III Bikeways in each of the three main parts of the City (north, south and east). The focus of the 2002 Plan will be to continue improving connections between existing facilities within the City and extending bicycle facilities to neighboring destinations (Prunedale, Monterey Peninsula and Spreckles/ Highway 68 corridor).

Education has also been a focus for both City staff and the SBPAC. Partnerships with TAMC, the Monterey County Health Department, and more recently AMBAG have expanded these opportunities, through their assistance in the following events:

- EARTH DAY (April)
- BIKE TO WORK WEEK (May)
- RIDESHARE WEEK (October)
- WALK TO SCHOOL DAY (October)
- COMMUTER CLUB PROGRAM (Ongoing)
- MONTEREY COUNTY SAFETY PROGRAMS (Ongoing)
- SAFE KIDS COALITION (Ongoing)

Bike Week has been the greatest opportunity for public outreach for City Staff and the SBPAC. Literature and information is provided to attendees and participants at events, and to City Council and City Employees. Gaining media exposure during events has also helped spread the word about bicycling and its benefits.

The SBPAC and Monterey County Health Department share the goal to develop an educational program that is presented to all Salinas elementary schools. This is the primary educational goal for the upcoming two years. A supporting goal is to work with the Salinas Police Department to conduct two Bicycle Rodeos each year.

Enforcement has not been a high priority since the inception of the Bike Plan and related programs. Providing quality facilities and education/information has been the "carrot" to encourage bicycling and adhering to the rules of the road. However, enforcement must become a greater priority to ensure a safe bicycling community.

BICYCLING BENEFITS

Bicycling is a mode of travel which has the following benefits:

- It is one of two least environmentally taxing ways to travel.
- Bicycling is the most cost-effective mode of travel next to walking.
- Travel by bicycle is highly energy efficient.
- Bicycling has significant health advantages for the commuter.
- Cycling is a convenient and practical mode for trips of 5 miles or less.
- Bicycling is an enjoyable recreational activity for families.
- The cost of providing bikeways is a fraction of the cost of constructing streets (Bikeways cost 10-25% as much as roadways).

CLEANER AIR

Over 60% of pollutants (nitrogen oxides, carbon monoxides, hydrocarbons) emitted in a five mile trip occur during the cold start period in the first four minutes of the vehicle's operation. Shorter car trips are more polluting on a per-mile basis than longer trips. A short, four-mile round trip by bicycle once a week, keeps about 15 pounds/rider/year of pollutants out of the air we breathe (WorldWatch Institute). According to The Green Commuter, a publication of the Clean Air Council, motor vehicle emissions represent 31% of the total carbon dioxide, 81% of carbon monoxide, and 49% of nitrogen oxides released in the U.S. Each year, the average vehicle commuter in Monterey County creates 141 pounds of pollution by commuting an annual average of 3,528 miles. Locally, motor vehicle emissions accounted for 47% of the ozone precursors in the Monterey Bay region by 1997.

The 1990 census found that 42% of all resident Salinas commuters drove less than 15 minutes to work. In addition, nearly 70% of all employed Salinas residents work in Salinas, which means that they would generally have commutes of 5 miles or less *(AMBAG: 1990 Census Transportation Planning Package, State Element)*.

If 5% of all Salinas commuters bicycled to work, those riders would avoid emitting 176 tons of emissions into the air each year *(City of Salinas staff estimate*). If the percentage of all trips made within the city by bicycle rose from its current estimated level of 2% to 6%, a 5% reduction in the city's contribution to regional carbon monoxide emissions levels would result.

LESS NOISE

Most of the noise pollution in Salinas is caused by motor vehicles. A bike ride that replaces a car trip effectively removes a car from the road. A reduction in car trips will help to maintain existing noise levels that is sure to rise with increasing auto use. Reduced noise levels would contribute to the community's general health by reducing stress caused by automobile–generated noise and improving the quality of life.

REDUCES DEPENDENCE ON NON-RENEWABLE RESOURCES

Motor vehicle travel consumes three-fourths of all oil and one-half of all energy used in California. These ratios will increase as congestion levels rise and commute distances increase. The average Monterey County commuter uses 182 gallons of fuel each year. Statewide statistics show that each motorist wastes about 43 gallons of motor fuel every year due to traffic congestion or about 25% of all fuel used in commuting. Wasted fuel costs the average motorist $60 per year. Californians lose 200,000 hours and our state economy loses $3 million in productivity each year due to traffic congestion.

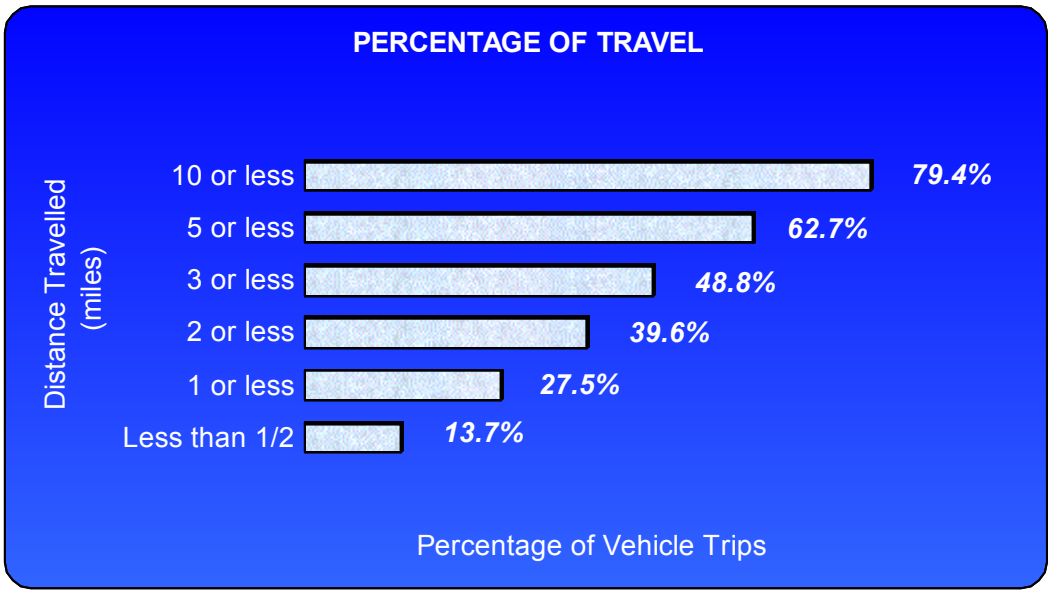
According to the U.S. Department of Transportation, the increase in the use of bicycles during the 1980's reduced the country's dependence on oil between 16 and 24 million barrels a year. Based on this ratio, Salinas bicycle commuters saved over 2,000 barrels of oil that they would have used in 1997 (*staff estimate).*

PROMOTES GOOD HEALTH

Bicycling has many health benefits including enhancing cardiovascular fitness, lessening body fat, and reducing stress level. Cycling for transport can provide a large proportion of the moderate exercise needed for optimum protection against cardiovascular disease and diabetes, and can be integrated into lifestyles so that little extra time is required. Cycling for transport provides a valuable alternative physical activity to sport. Studies show that bike commuters arrive at work in a better frame of mind, are more productive, and miss work less often (Facts *newsletter).* Cycling at a moderate (9-mph) pace burns 352 calories per hour *(SELF magazine)*

Research conducted in 1999 by the Centers for Disease Control found that "obesity and overweight are linked to the nation's number one killer--heart disease--as well as diabetes and other chronic conditions." The report also states that one reason for Americans' sedentary lifestyle is that "walking and cycling have been replaced by automobile travel for all but the shortest distances." (JAMA Newsletter)

According to the British Medical Journal, the excessive use of motor vehicles severs communities and makes active modes of transport such as walking and cycling more difficult. Yet about 63% of all trips made by car are less than five miles long and are suitable for cycling or walking.



REDUCES COSTS

Bicycling as a mode of transportation costs only a fraction of what it takes to operate a motor vehicle. The following example illustrates this point.

Cost Factor	**New Auto**	**Used Auto**	**Transit**	**Bicycle**
Vehicle cost/fare	$ 20,000	$10,000	$2,600	$ 800*
Interest cost (5 yr)	$ 8,000	$ 1,000	N/A	N/A
Fuel (5 yr)	$ 1,500	$ 1,500	N/A	N/A
Maint./Repair (5 yr)	$ 4,000	$ 5,000	N/A	$200
Insurance (5 yr.)	$ 4,500	$ 4,000	N/A	N/A
Total Cost (5 yrs)	$ 37,000	$21,500	$2,600	$1,000
Average Cost/year	**$ 7,400**	**$ 4,300**	**$ 540**	**$ 200**

* Includes $200 for related equipment

This chart shows that the annual average cost of owning a new car is $7,400 per year. Used cars are estimated to cost about $4,300 a year to operate and maintain, while transit riders spend an average of $540 for transit fares. The $7,200 in annual savings gained by switching from a new auto to a bike would increase the net income available for a typical Salinas household by about 18%. A bicycle substituted for the typical used car would save the average household 11% of their discretionary income. Those saved dollars would be available for discretionary expenditures in a wide range of goods or services in the community. Only 15% of the typical dollar devoted to automotive use stays in the community. It is likely that the majority of those same dollars if devoted to other goods or services would make more of an impact locally.

Bicycling is extremely cost efficient for short range trips, is non-polluting, and promotes good health. The 1990 census noted that the average time for Salinas bicycle commutes was 11 minutes and about 2 miles. The 2000 census figures are still being compiled. Many Salinas residents commute short distances to work and could save significantly by commuting by bicycle. Vehicle ownership and driving are becoming increasingly more expensive and the burdens of the increased cost will not only fall on the individual driver, but on the community as a whole.

In Monterey County, the average vehicle commuter drives 3,528 miles, uses 182 gallons of fuel, and spends $1,488 commuting to work each year. Monterey County's gasoline

consumption (excluding aviation fuel), reached 161 million in 1990 and cost consumers over $225 million *(Caltrans, Travel Related Factors).*

Public investment in providing roadways for automobile travel is also a significant hidden cost of auto travel. At peak capacity, an average traffic lane can carry 2,000 vehicles per hour whereas that same facility could carry over 9,000 bicycles per hour. The 1998 estimate for completing the road network for the Salinas General Plan including updated freeway interchanges is over $270 million. Much of the travel demand for roadways is for short trips which could be provided by much less expensive bicycle lanes and paths. Diverting commute and other trips from cars to bicycles could save the community millions of dollars in road improvements, if resident's bicycle "culture" changed.

Public and private provision of parking is many times more expensive for motor vehicles than for bicycles. The total cost for a single auto space in a parking structure exceeds $15,000. Twelve bicycles can fit within a single auto space reducing that cost in a parking structure from $15,000 per auto to $1,250 per bicycle space.

MANDATORY ELEMENTS OF THE BIKEWAYS PLAN

California Vehicle Code directs Bike Plans to address the following issues:

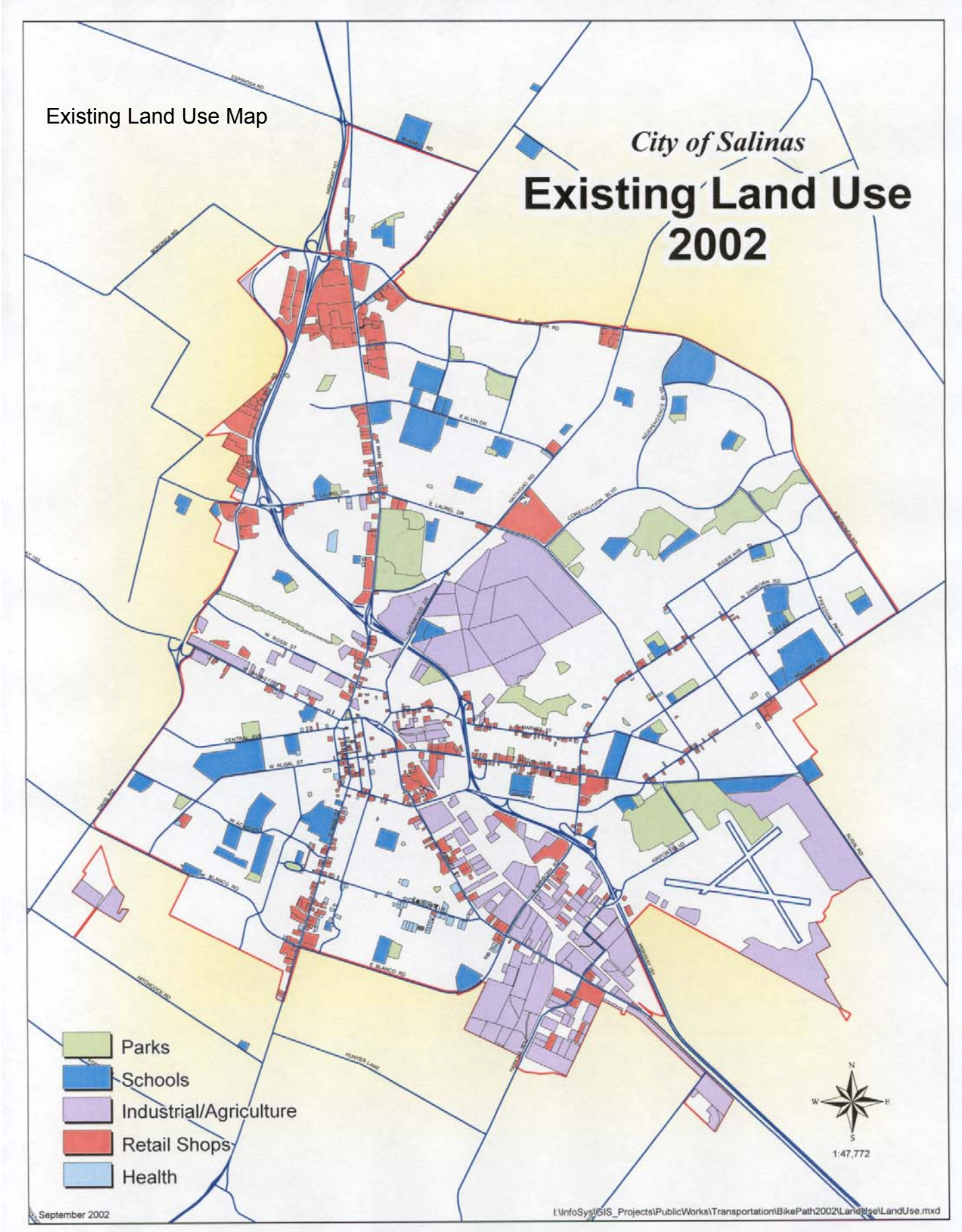
A. Estimated number of bicycle commuters
B. Existing and proposed land use maps
C. Existing and proposed bikeways
D. Existing and proposed bicycle parking facilities
E. Existing and proposed bicycle transport facilities
F. Existing and proposed location of support facilities
G. Bicycle safety and education programs
H. Citizen and community involvement in plan development
I. Consistency of Bike Plan with other local and regional plans
J. Project listing including priority of projects
K. Identification of prior expenditures and future needs for bike safety

A. ESTIMATED NUMBER OF BICYCLE COMMUTERS

According to the 1990 census, about 1% of commute trips in Salinas were by bicycle that year. Based on more than doubling the bike network since 1990 and an observed 20% increase in general cycling activity, it is now assumed that about 1.5% of all commute trips are made by bicycle each day in Salinas. This represents no change from the 1998 BIKEWAYS PLAN estimate. The City's goal is to increase the bicycle trip rate to 5% of all trips at the build-out of the City's bicycle network in 2010. Given a projected annual job growth rate of 1% between now and 2010, an additional 3,000 residents need to commute by bicycle daily in 2010 to meet this goal. While this is an ambitious goal, several communities in the U.S. have achieved or exceeded bike commute rates of 5%; including Davis, CA; Gainesville, FL; Madison, WI, and Chico, CA. Salinas' combination of mild climate and relatively flat topography make such a goal very reasonable.

With regard to overall population of the area and according to the 2000 census, Monterey County experienced the state's second-largest growth rate in population since 1997 (4.7%). In 2000, the total population in Monterey County was approximately 400,907 and was expected to increase by 34 percent to 536,609 by 2020. Salinas' 2000 population based on the Census was approximately 149,376; and is expected to increase to 183,783 in 2020 (2000 AMBAG Estimate).

Existing Land Use Map



B. EXISTING AND PROPOSED LAND USES

Looking at the **Existing Land Use Map** (page14), Salinas has three major employment areas. The industrial/agricultural sector is concentrated in the Abbott Street corridor in South Salinas and along West Market Street in West-Central Salinas. The retail sector is along major arterial streets such as Main Street, Market Street, Alisal Street and Davis Road**;** with the highest concentration found in North Salinas along North Main Street and Davis Road. Public services, professional offices and some retail are concentrated in downtown Salinas with other clusters near Hartnell College and on Laurel Drive; with medical services concentrated on Natividad Road and Romie Lane.

The City's traffic model shows that most home to work commutes are from residential neighborhoods to the downtown and South Salinas industrial areas. Residential areas and schools are evenly spaced throughout the City. Most shopping is concentrated in North Salinas and most employment sites are in downtown or south Salinas. A more recent trend is for new residents to be employed in the Silicon Valley / South Bay Area. Although this group is less likely to bike, provisions for bicycling opportunities to MST Transit stops and the Salinas Intermodal Transportation Center (ITC) are included in this Plan for access to expected bus and Caltrain service to Silicon Valley/San Francisco from Salinas.

With regard to the community design and proposed land uses, effective land–use planning is a priority goal for building the state's future transportation system, according to the Governor's Office for Planning and the Department of Transportation's recent statewide program developing the 2025 Transportation Plan. Salinas completed the update of its General Plan, which considers land use planning to encourage alternative transportation use. In public meetings and workshops, the community is clear in wanting to provide for more compatible development that will help to reduce vehicle trips and promote more use of bus and rail transit, plus encourage pedestrian and bicycle use.

The new general plan update uses new phrases such as "Smart Growth", "New Urbanism", and "Transit-Oriented Development" to promote a more balanced transportation system. The objectives of these planning principles are to locate more transit in high-density clusters, corridors, and activity centers; and to provide services, jobs and housing in closer proximity to each other. The City's Preferred Land Use Alternative includes this type of planned development and is part of the General Plan's E.I.R.

The following are some of the principles that the community is endorsing in updating their planning goals and policies:

- Mixed-use developments with sites coordinated with each other, rather than in isolation;
- Less automobile-dependent patterns for travel to work, shopping, and play;
- Pedestrian and bicycle activity encouraged by easy walking/bicycle access to work, shopping, and recreational activities;

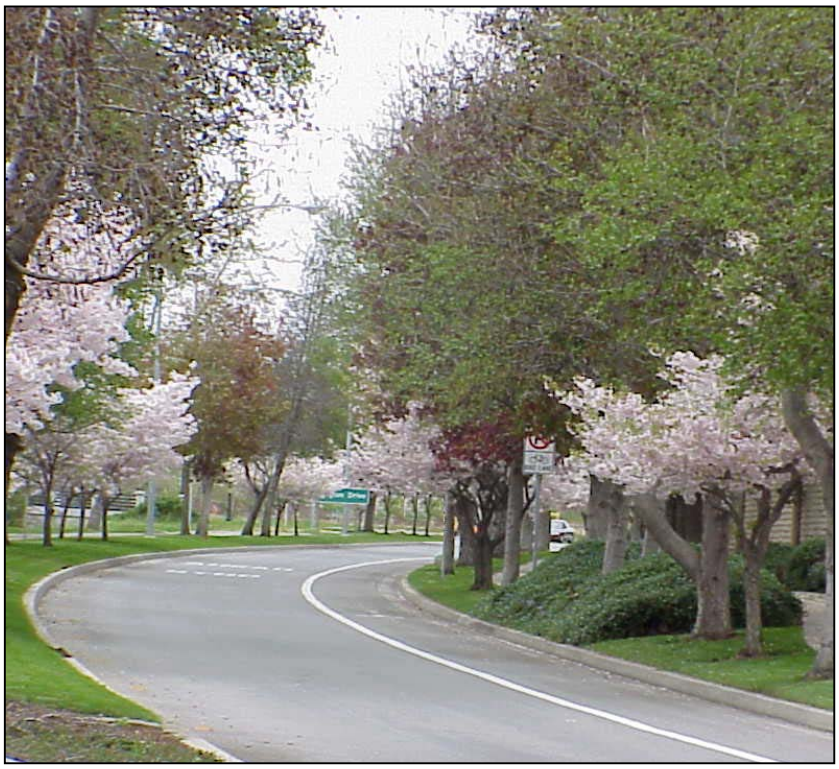
- Transit-oriented developments – intensify mixed land-use and higher population densities to encourage transit, rail, bicycle and pedestrian use with easy connections and less commute travel;

- Easy and safe approaches to urban areas and services by walking, biking, or transit;

C. EXISTING AND PROPOSED BIKEWAYS

The City of Salinas Bikeways map on page 2 shows that the City of Salinas Bicycle Plan will provide, when completed, one of the most extensive systems of bikeways of any community in California. As of December 2001, the existing bike network consists of approximately 64 miles of Class I, II or III bikeways. This covers significant portions of North, South and East Salinas.

The ratio of bike lane miles to arterial street miles is now 0.56 . A ratio greater than 0.35 to 1.00 is considered a key threshold for achieving high rates of bicycle commuting (Goldsmith, 1993, Reasons Why Bicycling and Walking Are Not Being Used More Extensively as Travel Modes).



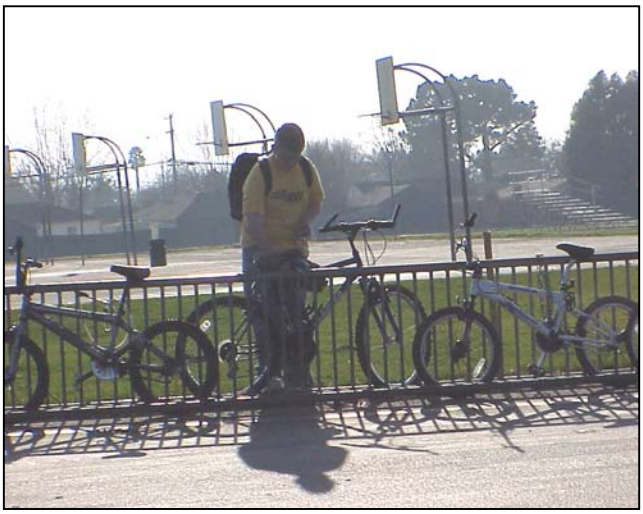
Another 2.20 miles of bike lane projects and a 1.4-mile bicycle/pedestrian path are under construction, and are expected to be completed by end of 2003. The proposed network identified in the 2002 Bikeways Plan will provide nearly 90 miles of bikeways at buildout. When completed in 2010, the network of bikeways will connect every neighborhood to the downtown area, and to employment, shopping, cultural, educational and recreational facilities. Nearly every school will have bike access as well as the majority of South Salinas' industrial areas.

D. BICYCLE PARKING FACILITIES

Providing safe and convenient bicycle parking facilities will further promote bicycling. The **Bike Transport/Parking Facilities** map on the following page and accompanying table/chart on page 51 notes the location of known bicycle parking facilities at school sites, shopping centers, public buildings and employment centers. Bicycle parking significantly expanded with distribution of 50 additional bicycle racks for the community's use in 1998**,** and another 50 are expected to be distributed in 2002. Eighteen bicycle lockers will also be distributed in 2002.

The City should pursue installing on-street bicycle racks in retail districts and activity centers where said facilities can be appropriately placed in the public right of way. This gives the City the ability to properly provide and locate racks, and coordinate their installation with local businesses.

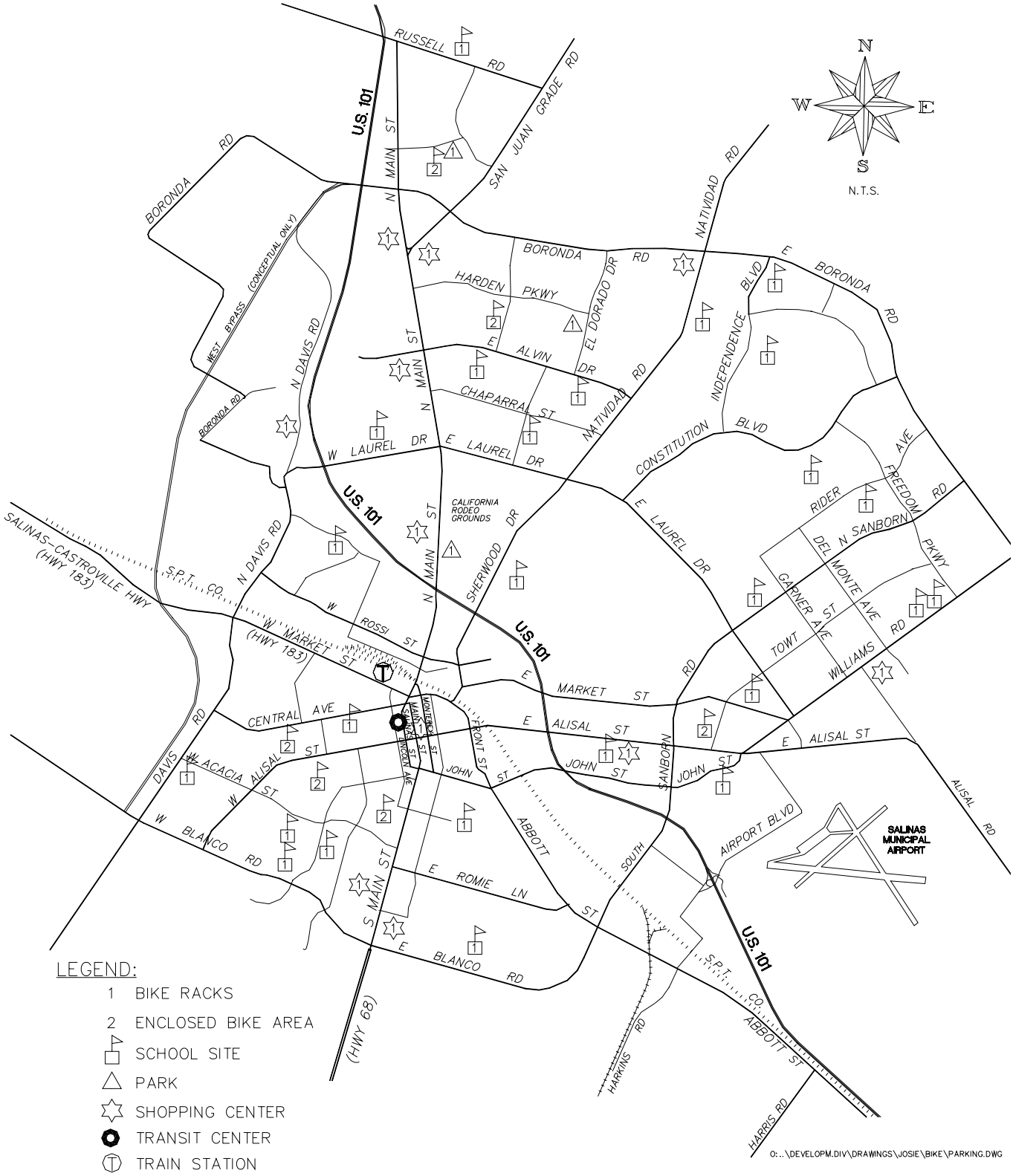
The City should further pursue installing bicycle lockers in all public parking garages, and in strategic parking lots where they will be used by local business employees.



The responsibility for providing parking at non-city owned locations (i.e. hospitals, colleges, major employers, etc.) should fall to the property owners and/or employers.

Appendix H on page 69 shows the standards for bicycle parking facilities. A major revision of these standards was proposed by the SBPAC several years ago as a part of updating the zoning code. As a result, the City's Zoning Code requires new commercial or industrial development that either expands existing uses or allows new uses with 10 or more parking spaces, to provide 10% of the automobile parking spaces for bicycle parking.

BIKE TRANSPORT/PARKING FACILITIES



E. BICYCLE TRANSPORT/PARKING FACILITIES

The map on page 21 entitled **Bus Routes with Bike Racks** notes the location of bus routes in the city and individual bus stops. Monterey-Salinas-Transit (MST) operates the bus system in Salinas. Currently all MST buses have bicycle carriers/racks. Two bicycles fit on a fold-away carrier above the front bumper of the bus. Two more can occupy the wheelchair securement area inside the bus, if this space is available. The maximum bike size is 80" long by 40" high. Motorized bicycles are not applicable.

In addition, bike racks are located at the Salinas Transit Center and the Amtrak Rail Station providing bicycle parking for cyclists who wish to connect to other modes of transportation.

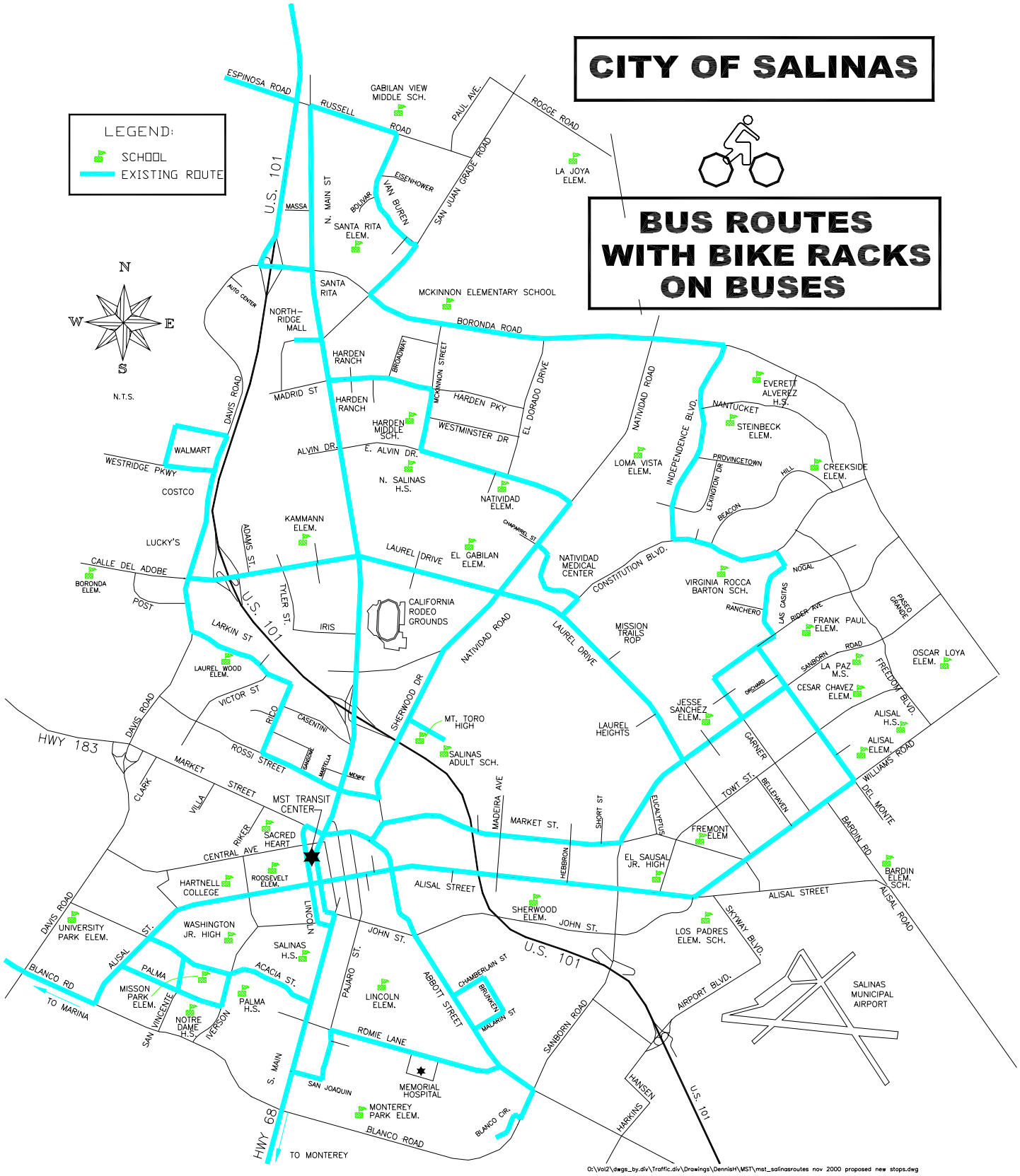
The City will also provide a bicycle locker for MST to use at the Salinas Transit Center to accommodate bus commuters who need a more secure facility for longer-term parking.

F. EXISTING AND PROPOSED SUPPORT FACILITIES

Showers and personal lockers are important to people cycling more than 3 to 5 miles one way. The City has not completed a survey of private employers to identify the locations of these support facilities (showers and lockers). However, employers are encouraged to provide such amenities by the City's Facilities Trip Reduction program and some increase in these facilities is expected in the future. Many innovative businesses have provided riding employees with showers and lockers at their facilities and discounted memberships to nearby gyms. Some of the companies that provide these facilities to their employees include the following:

- Salinas Valley Memorial Hospital (1,700 employees)
- Household Credit Services (1,500 employees)
- Mann Packing (650 employees)
- City of Salinas (592 employees)
- McCormick & Co. (400 employees)
- Hartnell Community College (250 employees)
- YMCA (120 employees, 5000 members)
- Local High Schools and Middle (Jr. High) Schools

The locations of the previously mentioned companies, public parks, buildings, and schools known to have these support facilities are shown on the **Bicycle Support Facilities** map on page 22.


CITY OF SALINAS
BUS ROUTES WITH BIKE RACKS ON BUSES
LEGEND:
SCHOOL
EXISTING ROUTE
N
W
E
S
N.T.S.
ESPINOSA ROAD
RUSSELL ROAD
GABILAN VIEW MIDDLE SCH.
PAUL AVE.
ROGGE ROAD
LA JOYA ELEM.
SAN JUAN GRADE ROAD
EISENHOWER
VAN BUREN
BOLIVAR
MASSA
N. MAIN ST
U.S. 101
SANTA RITA ELEM.
SANTA RITA
AUTO CENTER
NORTH-RIDGE MALL
MCKINNON ELEMENTARY SCHOOL
BORONDA ROAD
HARDEN RANCH
BROADWAY
MCKINNON STREET
MADRID ST
HARDEN PKY
EL DORADO DRIVE
HARDEN MIDDLE SCH.
WESTMINSTER DR
ALVIN DR.
E. ALVIN DR.
N. SALINAS H.S.
NATIVIDAD ELEM.
NATIVIDAD ROAD
LOMA VISTA ELEM.
INDEPENDENCE BLVD.
EVERETT ALVAREZ H.S.
NANTUCKET
STEINBECK ELEM.
PROVINCETOWN
HILL
CREEKSIDE ELEM.
LEXINGTON DR
BEACON
DAVIS ROAD
WALMART
WESTRIDGE PKWY
COSTCO
LUCKY'S
KAMMANN ELEM.
ADAMS ST.
CHAMPREL ST
EL GABILAN ELEM.
LAUREL DRIVE
CALLE DEL ADOBE
BORONDA ELEM.
POST
TYLER ST.
IRIS
CALIFORNIA RODEO GROUNDS
NATIVIDAD MEDICAL CENTER
CONSTITUTION BLVD.
VIRGINIA ROCCA BARTON SCH.
NOGAL
RANCHERO
LAS CASITAS
RIDER AVE
PASEO GRANDE
FRANK PAUL ELEM.
LARKIN ST
LAUREL WOOD ELEM.
MISSION TRAILS ROP
SANBORN ROAD
LA PAZ M.S.
OSCAR LOYA ELEM.
FREEDOM BLVD.
ORCHARD
CESAR CHAVEZ ELEM.
VICTOR ST
RICO
CASENTINI
SHERWOOD DR
MT. TORO HIGH
JESSE SANCHEZ ELEM.
LAUREL HEIGHTS
ALISAL H.S.
ALISAL ELEM.
GARNER
WILLIAMS ROAD
HWY 183
MARKET STREET
ROSSI STREET
GABILAN
MARTELLA
MENKE
SALINAS ADULT SCH.
CLARK
VILLA
MST TRANSIT CENTER
MADEIRA AVE
MARKET ST.
SHORT ST
EUCALYPTUS
TOWT ST.
BELLEHAVEN
DEL MONTE
RIKER
SACRED HEART
CENTRAL AVE
FREMONT ELEM
BARDIN RD.
BARDIN ELEM. SCH.
HEBBRON
EL SAUSAL JR. HIGH
ALISAL STREET
HARTNELL COLLEGE
ROOSEVELT ELEM.
SHERWOOD ELEM.
JOHN ST.
LINCOLN
DAVIS ROAD
UNIVERSITY PARK ELEM.
WASHINGTON JR. HIGH
SALINAS H.S.
ALISAL ST.
LOS PADRES ELEM. SCH.
SKYWAY BLVD.
ALISAL ROAD
BLANCO RD
TO MARINA
PALMA
MISSON PARK ELEM.
ACACIA ST.
PAJARO ST.
LINCOLN ELEM.
ABBOTT STREET
CHAMBERLAIN ST
BRUNKEN
MALARIN ST
U.S. 101
AIRPORT BLVD.
SALINAS MUNICIPAL AIRPORT
SAN VINCENTE
NOTRE DAME H.S.
IVERSON
PALMA H.S.
ROMIE LANE
S. MAIN
SAN JOAQUIN
MEMORIAL HOSPITAL
MONTEREY PARK ELEM.
HWY 68
TO MONTEREY
BLANCO ROAD
BLANCO CIR.
HANSEN
HARKINS
SANBORN ROAD
O:\Vol2\dwgs_by.div\Traffic.div\Drawings\DennisH\MST\mst_salinasroutes nov 2000 proposed new stops.dwg

BICYCLE SUPPORT FACILITIES
(SHOWERS AND LOCKERS)

G. BICYCLE SAFETY EDUCATION PROGRAMS

According to statistics developed by the State Office of Traffic Safety, the City of Salinas ranks 16th out of 39 cities over 100,000 population for our rate of bicycle collisions per 100,000 miles of vehicle travel. That is, 23 cities over 100,000 population have a better bicycle safety record than Salinas. Appendix F on pages 57 & 58 shows the locations of bicycle collisions between 1996-2000.

As mentioned earlier, students still constitute the largest number of users based on visual inspection. However, surveys show only about 10-15% of students currently comply with the state helmet laws.

A successful program of bicycle safety education for elementary schools through an injury prevention grant by the Monterey County Health Department expired in 1996 and this is now a large unmet need. To meet this need, the City's Bike Committee is working with the Salinas Police Department, Salinas Public Works Staff, the Safe Kids Coalition and the Monterey County Health Department to promote bike safety awareness. The Committee has participated in public presentations at Earth Day, the local farmers markets, Kidfest and Bike Week. The Salinas Police Association has contributed bicycle helmets for youths at the Kiddie Kapers parade and provides bike safety information at bike rodeos.

TAMC has begun purchasing bicycle safety education videos and will allow organizations, school districts, police departments, and local jurisdictions to check out these materials on loan. The Automobile Club of Northern California also has a large selection of bicycle safety and education material available for loan to club members.

City Police enforcement efforts to uphold bicycle–related traffic laws is another activity that supports safe bicycling practices; and these efforts have been limited due to other Departmental and community priorities. A goal for the upcoming two years is to increase enforcement efforts within the City: especially helmet use.

H. CITIZEN AND COMMUNITY INVOLVEMENT

The Salinas Bikeways Plan was prepared in close coordination with the Salinas Bicycle and Pedestrian Advisory Committee (SBPAC), who reviewed and made recommendations on each draft of the Plan. The Plan was then subject to public hearings before the Salinas Traffic and Transportation Commission and the Salinas Planning Commission before it was considered by the Salinas City Council.

The SBPAC has been intrinsically involved in the development of this plan and has recommended approval of the plan to the Transportation Agency of Monterey County (TAMC). The SBPAC will also help build widespread community awareness, understanding, and support for the bicycle and pedestrian transportation planning process, and will continually seek to encourage citizens' participation in that process. The SBPAC will also have the continuing task of recommending ways to implement this bikeways plan as well as the RTP's (Regional Transportation Plan) goals and objectives.

I. CONSISTENCY WITH CITY AND REGIONAL PLANS

The Bikeways Plan implements the following policies and goals of the 2002 Salinas General Plan:

- Promote the use of alternative modes of transportation, including bus, rail, bicycling and walking *(Policy CD-3.8).*
- Support alternative modes of transportation, such as walking, biking and public transit, and develop bike- and pedestrian-friendly neighborhoods to reduce emissions associated with automobile use *(Policy COS-6.4).*
- Provide an extensive, safe public bicycle network that provides on-street as well as off-street parking *(Goal C-4)*.

The Salinas Bikeways Plan supports these goals from the General Bikeways Plan for Monterey County:

- Make bicycling on all streets and roads in Monterey County safer and more convenient and pleasurable for everyday transportation to work, to school, on errands, and to transit and rail facilities; as well as for pleasure, recreation, and health.

- Increase each jurisdiction's efforts to apply for funding (an adopted plan is a prerequisite for many funding sources).
- Encourage development of bicycling safety education programs to improve bicycle skills, observance of traffic laws, and promote overall safety for cyclists of all ages.

SBPAC membership on the City and County Bicycle Committees assures good communication and coordination between local (city) and regional (county) planning, construction and educational activities. This Plan includes routes shown on the Caltrans District 5 Bicyclists Plan/Map and coordinated with the Caltrans District 5 Bicycle Position Statement dated August 3, 1995.

Chapter 80 of the Caltrans Highway Design Manual states the following objectives when developing transportation facilities:

The Project Development process seeks to provide a degree of mobility to users of the transportation system that is in balance with other values. Social, economic, and environmental effects must be considered fully along with technical issues in the development of transportation projects so that final decisions are made in the best overall public interest, with attention to such considerations as:

(a) Need for safe and efficient transportation

(b) Attainment of community goals and objectives

(c) Needs of low mobility and minority groups

(d) Costs of eliminating or minimizing adverse effects on natural resources, environmental values, public services, aesthetic values and community and individual integrity

(e) Planning based on realistic financial estimates

(f) The cost, ease, and safety of maintaining whatever is built

Proper consideration of these items requires that a facility be viewed from the different perspectives of the user, the nearby community and larger statewide interests. For the user, efficient travel and safety are paramount concerns. At the same time, the community often is more concerned about local aesthetic, social, and economic impacts. The general population, however, tends to be interested in how successfully a project functions as part of the overall transportation system and how large a share of available capital resources it consumes. Therefore, individual projects must be selected for construction on the basis of both overall system benefits and community goals, plans, and values.

Decisions must also emphasize different transportation modes working together effectively.

The goal is to increase highway mobility and safety in a manner that is compatible with, or which enhances adjacent community values and plans.

Future development of bicycle facilities is also addressed in the Final Draft of the California Transportation Plan, March 1994. Under the objective to expand and improve transportation services and systems the following actions were listed:

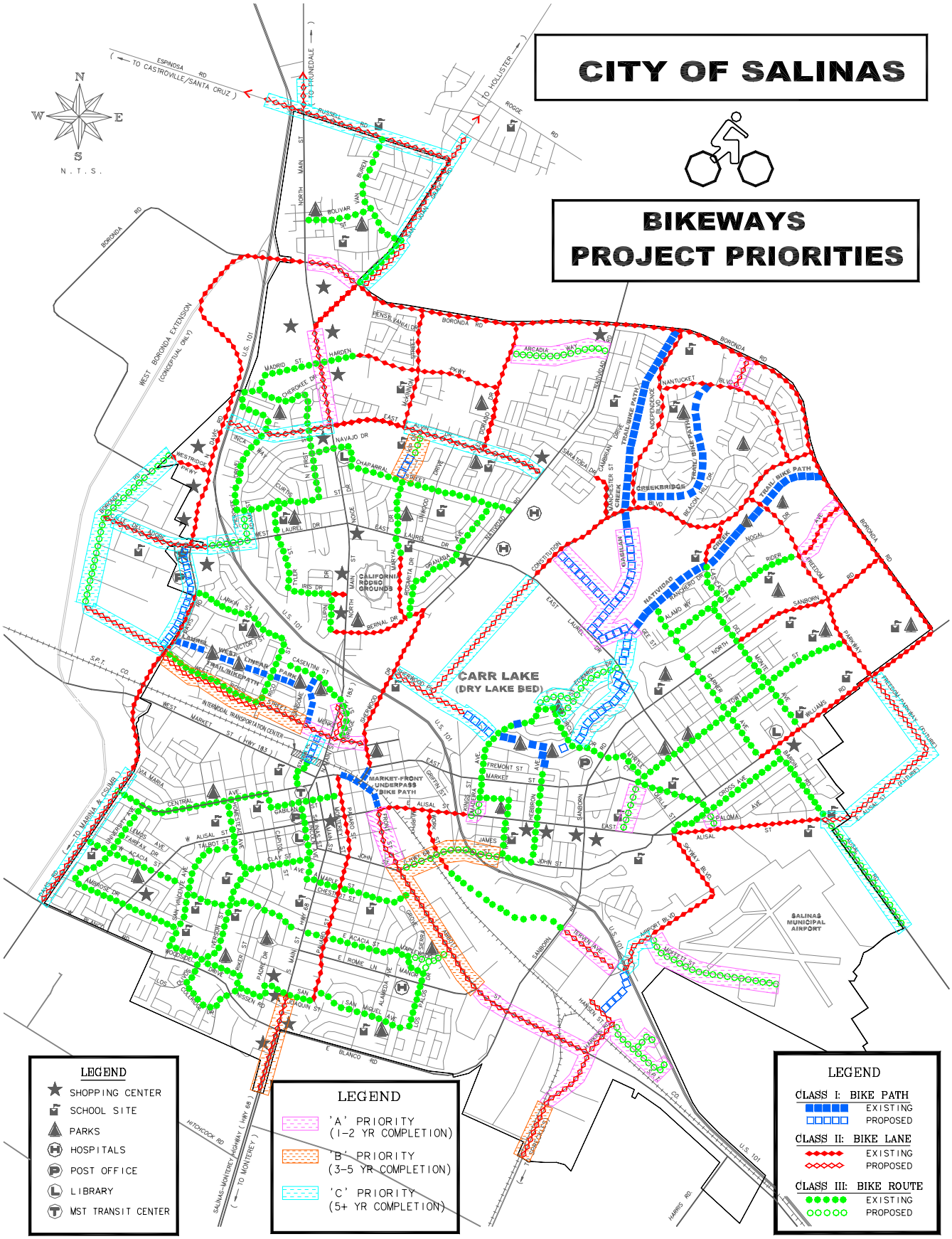
Caltrans, Regional Transportation Planning Agencies (RTPAs), cities, and counties will develop alternatives to the single-occupant vehicle, such as bicycling, walking, buses, rail, telecommunications and demand management techniques (DCTP pg-17).

This Plan relates to many of the existing plans dealing with transportation, which includes:

SALINAS
- 2002 Salinas General Plan & Circulation Element
- Monterey-Salinas Transit Short Range Transit Plan (2001)
- Monterey Bay Unified Air Pollution Control District's Air Quality Management Plan (2000)
- Regional Transportation Plan for the Transportation Agency for Monterey County (2002)

CALTRANS
- Caltrans' Long Term Transportation Strategy Document
- Congestion Management Program Model Trip Reduction Ordinance
- Caltrans' California Transportation Plan

These plans are related to the Bikeway Plan since they all address the need for providing transportation connections between residences and busy activity centers. Goals found within these plans emphasize promoting alternate modes of transportation, such as the bicycle. They also promote greater interconnection between transportation modes, such as providing bike racks on buses to allow people to use both buses and bicycles to reach their final destination. These plans have noted the funding constraints and environmental problems associated with increasing vehicle congestion. They also recognize the benefits with promoting alternate modes of transportation to maximize the efficiency of the existing transportation system.


CITY OF SALINAS
BIKEWAYS
PROJECT PRIORITIES
N
W
E
S
N. T. S.
CARR LAKE
(DRY LAKE BED)
SALINAS MUNICIPAL AIRPORT
CALIFORNIA RODEO GROUNDS
LEGEND
SHOPPING CENTER
SCHOOL SITE
PARKS
HOSPITALS
POST OFFICE
LIBRARY
MST TRANSIT CENTER
LEGEND
'A' PRIORITY
(1-2 YR COMPLETION)
'B' PRIORITY
(3-5 YR COMPLETION)
'C' PRIORITY
(5+ YR COMPLETION)
LEGEND
CLASS I: BIKE PATH
EXISTING
PROPOSED
CLASS II: BIKE LANE
EXISTING
PROPOSED
CLASS III: BIKE ROUTE
EXISTING
PROPOSED

J. PRIORITY PROJECTS FOR THE 2002 SALINAS BIKEWAYS PLAN

The 2002 Bikeways Plan builds on previous actions undertaken since 1996. About 72% of the planned citywide bike network is now completed. The map entitled **Bicycle Facilities Project Priorities** on the previous page show the priorities of the 2002 Plan.

Existing system	**64.36 miles**
Remaining Projects (add to existing)	**25.95 miles**
Estimated system total at buildout	**89.56 miles**

Table 1, on the following page gives more detail of the facilities proposed for future expansion of the City's bikeways.

For many of the projects proposed by this bicycle plan, additional study and/or environmental review may be required prior to full implementation. Some projects will need to be phased due to funding constraints.

Many of these proposed bicycle improvement projects should be implemented when a street is resurfaced or reconstructed. Where projects involve removal and/or modification to existing street parking, review/consideration by the Traffic and Transportation Commission and City Council approval will be required. This ensures public participation and input is included during project implementation. The inclusion of bicycle design standards must be considered early in the project development/design phase to eliminate adverse cost implications.

Where bicycle facilities (paths, lanes and routes) are installed on or adjacent to streets having traffic signal controls, the City shall provide bicycle detection systems to enhance bicycle travel.

Table 1 - City of Salinas Proposed Bikeways List 2002 Update

Project Name	Limits	Priority	Length Ft	Mi	Class	Est. Cost
Natividad Creek/ Gabilan Creek/ County (9727)	Gabilan Creek to Natividad Creek; Constitution to Gabilan Creek	A	7392	1.40	I	$680,000
Abbott Street	John St to Romie Lane	A	4278	0.81	II	$320,000
Abbott Street (9111)	Romie Lane to Harkins Rd	A	3988	0.76	II	$2,368,000
Bridge Street (9438)	Rossi Street to N. Main St	A	1078	0.20	II	$419,000
Boronda Rd (9123)	N Main St to San Juan Grade	A	1569	0.30	II	$311,000
Front Street	John St to East Alisal St	A	1930	0.37	II	$2,700
Hemingway Dr	Nantucket to Boronda Rd	A	802	0.15	II	$8,800
N Main St	Alvin Dr to San Juan Grade	A	3178	0.60	II	$890,000
Rider Avenue	Freedom to Boronda	A	1909	0.36	II	$30,000
Rossi Street (9122)	Sherwood to Rec Ditch	A	1906	0.36	II	$448,000
Terven Avenue	Sanborn Rd to Airport Blvd.	A	1928	0.37	II	$24,600
Arcadia Way	Natividad to El Dorado	A	2800	0.53	III	$2,500
Market Street	E Alisal to Cross Ave	A	562	0.11	III	$800
Moffett Street	Airport Blvd to Vandenberg	A	4379	0.83	III	$6,200
N Madeira/King St	E Alisal St to Roosevelt St	A	780	0.15	III	$1,100
N Madeira/Saint Edwards Avenue	Circle Drive to Laurel Drive	A	3670	0.70	III	$5,200
Schilling Pl	Harkins Rd to Eden	A	2861	0.54	III	$4,000
Towt Street	E Alisal to Market St	A	1504	0.28	III	$2,100
Kip Drive	Alvin to Chaparral	B	1464	0.28	I,II	$200,000
Hansen Street	Airport to Harkins	B	940	0.18	II	$79,117
Harkins Rd	Dayton Ave south to City limit	B	1610	0.30	II	$97,000
Highway 68 (S. Main St.)	San Joaquin St west to City limit	B	3100	0.59	II	$78,000
Rossi Street	Davis Rd to Rec Ditch	B	4776	0.90	II	$300,000
John Street	Abbott to Wood St	B	3224	0.61	III	$4,500
Los Palos Dr	Abbott St to Manor Dr/ Grove St	B	948	0.18	III	$1,300

Project Name	Limits	Priority	Length Ft	Mi	Class	Est. Cost
Airport Blvd Bypass	Terven Ave through RR spur to Hansen St	C	1756	0.33	I	$2,000,000
Davis Rd	West Laurel to Rossi	C	3716	0.70	I	$350,000
Natividad Creek Bike Path	Gee St to Circle Drive	C	2894	0.55	I	$680,000
Carr Lake Bikeways	Constitution/Sherwood Place/Madeira Ave	C	7312	1.38	I,II	$5,000,000
Station Place (ITC Bridge)	Rossi to Amtrak Station	C	880	0.17	I,III	$1,500,000
Airport Blvd	Moffett St to US101	C	1438	0.27	II	$110,600
Alvin Dr	McKinnon St to Natividad Rd	C	4406	0.83	II	$86,000
Alvin Dr (US 101 Overpass)	N Davis Rd to N Main St	C	1346	0.25	II	$14,000,000
Calle del Adobe/West Laurel Dr	Boronda Rd to US 101	C	2794	0.53	II	$156,600
E Alisal St (Future St) / Freedom Parkway (Future St)	E Alisal Ext to Freedom Ext to Williams Rd	C	9028	1.71	II	
Harrison Rd	North of Russell Rd	C			II	$44,050
N Main/Espinosa Rd	Russell/101 Overpass	C	749	0.14	II	$5,000,000
Rossi St Extension	Boronda Rd to Davis Rd	C	2728	0.52	II	$175,500
Russell Road	N Main to San Juan Grade	C	4496	0.85	II	$154,900
San Juan Grade Rd	Boronda Rd to Cornwall St	C	1354	0.26	II	$230,000
Alisal Road	E. Alisal south to City limit	C	4312	0.82	III	$6,100
Boronda Rd	Westridge Pkway to Rossi St Extension	C	5624	1.06	III	$7,900
N Madeira/St Edwards Ave.	Circle Dr to Laurel Dr	C	3670	0.70	III	$5,200
W Laurel /US 101 Overpass/Adams St	West of US 101 to Tulane St	C	2086	0.40	III	$2,900

K. PAST ACCOMPLISHMENTS AND FUTURE NEEDS

ACCOMPLISHMENTS SINCE THE 1998 PLAN ADOPTION

The City of Salinas has made significant progress in developing bicycle facilities and programs since the initial adoption of the Salinas Bikeways Plan in 1991. The most significant improvements have resulted since 1996. A summary of these accomplishments is listed on the following table, with the most significant improvements summarized as follows:

Completion of the Class III Bike Route System

With grant funds received from the Monterey Bay Unified Air Pollution Control District, the City completed 27 miles of Class III bike route system signs in 1996/97. These improvements themselves doubled the size of the City's bike network and provided connections within all of the major residential areas of the City. It essentially provided a residential bicycle network in each of the three sections of the City.

Bernal-Sherwood Bike Lane

In 1996, the City received grant funding to construct 1.1 miles of bike lane linking north and south Salinas via Bernal and Sherwood Drives. This project, which provides a critical first link between north and south Salinas crossing both US 101 and the Union Pacific Railroad tracks, was completed in 2000.

Maryal Drive Bike Route Upgrade

The City received grant funding in 1997 to upgrade the paving and signing for a 0.5-mile segment of Maryal Drive just east of Sherwood Park to better serve area bicyclists. This route connects to the new Bernal-Sherwood bike lane project and provides enhanced access to north Salinas residents and city users of Sherwood Park and North Salinas High School. This project was also completed in 2000.

Figure 2-Maryal Drive Bike Lane/Route

Laurel West Bike Path

In 1997, the City received State Bike Lane Account (BLA) grant funds to complete a 1-mile segment of the Laurel West Class I Bike Path in the Rossi-Rico area. This facility provides a direct off-road connection between the western edge of the City at Davis Road to the center of the city at North Main Street and Casentini Street. This bike path was completed in 1998.

Figure 3 – Class I Bikeway (Bike Path) at Rossi Park.

East Alisal Bike Route

In 1997, the City received grant funding to provide for the first major improvement linking east and south Salinas via East Alisal street. Staff developed a design for bike lanes on East Alisal Street (Kern to Front) to guide cyclists from east of Highway 101 into the downtown. This facility provides the first major connection between east and south Salinas and was also completed in 2000.

North Davis Road

In 1997, the Westridge project completed a 1.8-mile extension of North Davis Road from West Laurel Drive to Boronda Road. Included as a part of the road project were bike lanes covering that entire distance. Additionally, the project provided bike lanes along Westridge Parkway that connected North Davis Road to the Boronda area. Development of the Salinas Auto Center provided minor enhancements to these bike lanes in 1999. The TFO-funded 101-Boronda interchange improvements constructed in 2000-01 extended bike lanes over US 101. A project to install Class II Bike Lanes from US 101 to San Juan Grade Road is a priority "A" project for the City, and will provide the missing link connecting two very long bike facilities.

Freedom Parkway / Sanborn Road

As an expansion of the Williams Ranch, developers of that property provided a 0.63-mile extension of Freedom Parkway from Sanborn Road to Williams Road. Bike lanes were a part of the roadway extension. As a condition of development, the builders also provided a 0.66-mile extension of Sanborn Road from Del Monte to Boronda Road, which included bike lanes. Bike Lanes along Boronda Road (Constitution Boulevard to Williams Road) were also provided, as were south bound bike lanes on Williams Road (Boronda to Alisal High School). All of these improvements were phased in between 1995 and 2000. All improvements were completed by 2000.

Bike Racks

In 1997, the City received a $12,500 grant from the state Bike Lane Account (BLA) for purchase of bicycle racks to be used throughout the city. Staff purchased 50 wave racks, each accommodating 7 bicycles, and distributed them to key public and private locations throughout the City. Locations included city parks, public buildings, shopping centers, employment sites and cultural centers. Another grant was received from the Air District in 2000, and provides for the distribution of another 50 bicycle racks. These racks are expected to be distributed / installed in 2002.

Bike Lockers

As a part of the City's Downtown Trip Reduction Program, staff has purchased 8 bicycle lockers to provide secure bicycle parking for 16 bicycles. These lockers have been installed at City locations in conjunction with employee pledges to participate in bicycle commuting. Hartnell College has also installed bicycle lockers. An Air District grant was secured by the City in 1999 and will provide another 21 lockers to be distributed for use. Installation of all these lockers is expected to be completed by December 2002.

City Staff Bicycles

In 1997, the City of Salinas restarted an old alternative transportation program by providing a city staff bicycle for use of City Hall and Redevelopment Agency employees on official business. Currently, one bike is available to City employees.

Hartnell College

Based on a request from Hartnell College, City staff along with representatives from the Transportation Agency for Monterey County (TAMC), the Association of Monterey Bay Area Governments (AMBAG), and Monterey-Salinas Transit (MST) met regularly with Hartnell staff to seek ways for a more balanced transportation system for the campus.

The City of Salinas has responded to this interest by providing bike racks and bike lockers to the college (funded through grants). As mentioned earlier, additional bicycle lockers are planned for delivery to the college in 2002.

Figure 4-Bike Racks at Hartnell College.

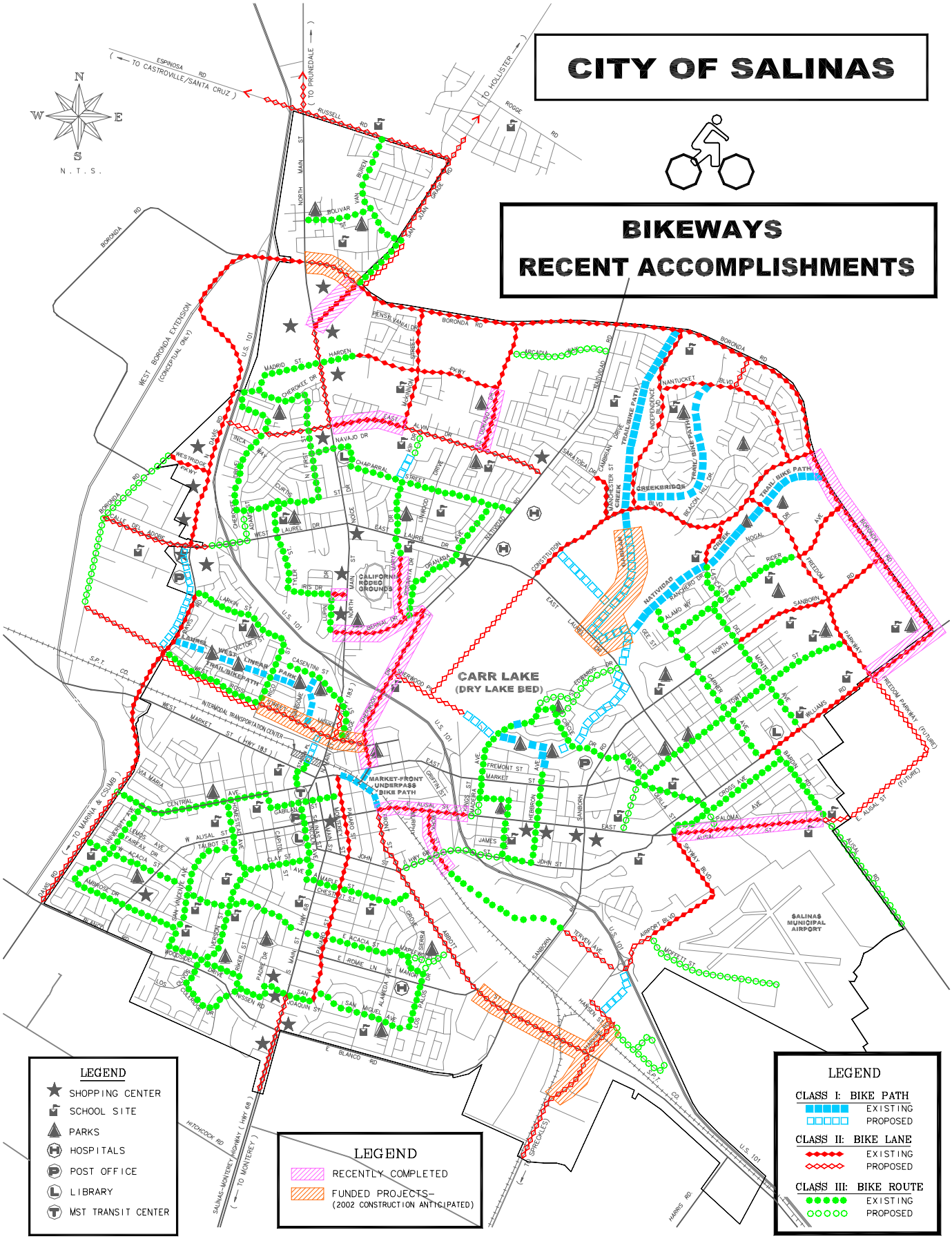
Annual Bike Week Outreach Events

In May 1997, the City of Salinas held a week long series of events for Bike Week including a bike parade, a downtown bicycle information center open all days of the week, a bike to work celebration and a series of other bicycle-related events. These events garnered four television stories including a live broadcast from the information center, several stories in local newspapers and significant local exposure. Approximately 500 people attended events at the bicycle information center over the course of the week.

Since the 1997 Bike Week event, the City and SBPAC have sponsored annual week long events that promote bicycling, educate the public on bicycling benefits, and provide acknowledgement of the importance of the bicycle as a recreational and every day vehicle. Disbursement of bicycle information and media attention on bicycling opportunities is a major focus of Bike Week.

Table 2 - City of Salinas Bikeways Projects Completed 1998-2001

Project Name	Limits	Year Completed	Length		Class
			Feet	Miles	
Laurel West Linear Park	Davis Rd thru Park/Rec Ditch to Rossi St/Casentini St	1998	6,090	1.16	I
Sanborn Rd	Freedom Blvd to Boronda Rd	1998	1,840	0.35	II
Williams Rd	Garner to Del Monte	1998	900	0.17	II
Rider Avenue	Freedom Blvd to Boronda Rd	1999	1,880	0.36	III
Saratoga St	Cambrian to Manchester	1999	290	0.06	II
Bernal Drive	Lupin to Sherwood Dr	2000	2,820	0.54	II
E Alisal St	Skyway Blvd to Alisal Rd	2000	4,530	0.86	II
E Alisal St	Kings St to Front St	2000	2,800	0.53	II
Maryal Drive	Bernal to Sacred Heart School	2000	1,400	0.27	II
Maryal Drive	Sacred Heart School to Laurel	2000	1,160	0.22	III
Sherwood Drive	E Market to Natividad Rd	2000	5,360	1.02	II
Williams Rd	Freedom to Boronda	2000	2760	0.53	II
Boronda Rd/US 101 Overpass	Westbound (US101 IC to Boronda Rd) Eastbound (US101 IC to N Main)	2001	1,889	0.36	II
E Alvin Dr	North Main to McKinnon Street	2001	2,240	0.43	II
El Dorado Drive	E Alvin to Boronda Rd	2001	4,080	0.78	II
Iris Drive	Lupin to N Main	2001	420	0.08	II
San Juan Grade	Boronda Rd to N Main St	2001	1,430	0.27	II
Work Street	E Alisal to John St	2001	1,360	0.26	III,II


CITY OF SALINAS
BIKEWAYS
RECENT ACCOMPLISHMENTS
N
S
E
W
N. T. S.
CARR LAKE
(DRY LAKE BED)
CALIFORNIA RODEO GROUNDS
SALINAS MUNICIPAL AIRPORT
MARKET-FRONT UNDERPASS BIKE PATH
WEST ALISAL PARK BIKE PATH
TRAIL BIKE PATH
LEGEND
SHOPPING CENTER
SCHOOL SITE
PARKS
HOSPITALS
POST OFFICE
LIBRARY
MST TRANSIT CENTER
LEGEND
RECENTLY COMPLETED
FUNDED PROJECTS–
(2002 CONSTRUCTION ANTICIPATED)
LEGEND
CLASS I: BIKE PATH
EXISTING
PROPOSED
CLASS II: BIKE LANE
EXISTING
PROPOSED
CLASS III: BIKE ROUTE
EXISTING
PROPOSED

FUTURE NEEDS

FACILITIES AND PROGRAMS FOR FURTHER STUDY

In addition to the facilities noted above for completion within the terms of this plan, the Bikeways Plan also identifies other features for further study, which may be considered for development in a subsequent plan. The facilities noted below should be investigated for adoption.

Reclamation Ditch System/US 101

There are approximately 7 miles of service roads along reclamation ditches in Salinas, which parallel US 101, bisect Carr Lake or travel through the Rossi-Rico area. These service roads have the potential to also serve as a separate off-road bicycle / pedestrian recreation trail system to interconnect several key areas of the community (see page 39 for conceptual plan). Issues of joint maintenance, liability and safety have to be explored with the Monterey County Water Resources Agency (MCWRA) which has responsibility for the system. City staff will work with MCWRA staff to develop a plan for such a joint-use path/access during the next two years. Combining our desired bicycle/pedestrian path with Monterey County Water Resource Agency's desire to improve the reclamation ditch's discharge capacity (as noted in their Zone 9 study) will make both goals more attainable.

Spreckels Railroad Spur

The Salinas Bicycle and Pedestrian Advisory Committee has expressed interest in working with Monterey County on an off-road bike path connecting the south Salinas industrial area, the community of Spreckels and the River Road/Las Palmas area. One logical connection would be to utilize a portion of the privately owned Spreckels Railroad spur which parallels Harkins Road from Salinas into Spreckels. A bicycle pedestrian bridge would have to be developed to cross the Salinas River to Las Palmas where the Buena Vista School and a branch of the Monterey County Public Library is located. City staff and SBPAC will work cooperatively with the County and TAMC Bike Committee to promote such a facility.

Intermodal Transportation Center Bike Bridge

The City has developed an Intermodal Transportation Center (ITC) at the Salinas Amtrak Station. This center will be a transportation hub to mix all modes of transportation including cycling. The adopted bicycle plan calls for a connection through the intermodal center that requires an elevated bicycle/ pedestrian bridge to cross railroad tracks in the vicinity of the station. This bridge must meet standards of accessibility for the Americans with Disabilities Act. A preliminary design and cost estimate for this facility may be developed as a part of the development of the Salinas Intermodal Center. An alternative to this facility will be provisions for bicycle lanes beneath the UPRR underpass at Main Street; which would occur concurrent with future widening of the street to accommodate 6 lanes of travel.

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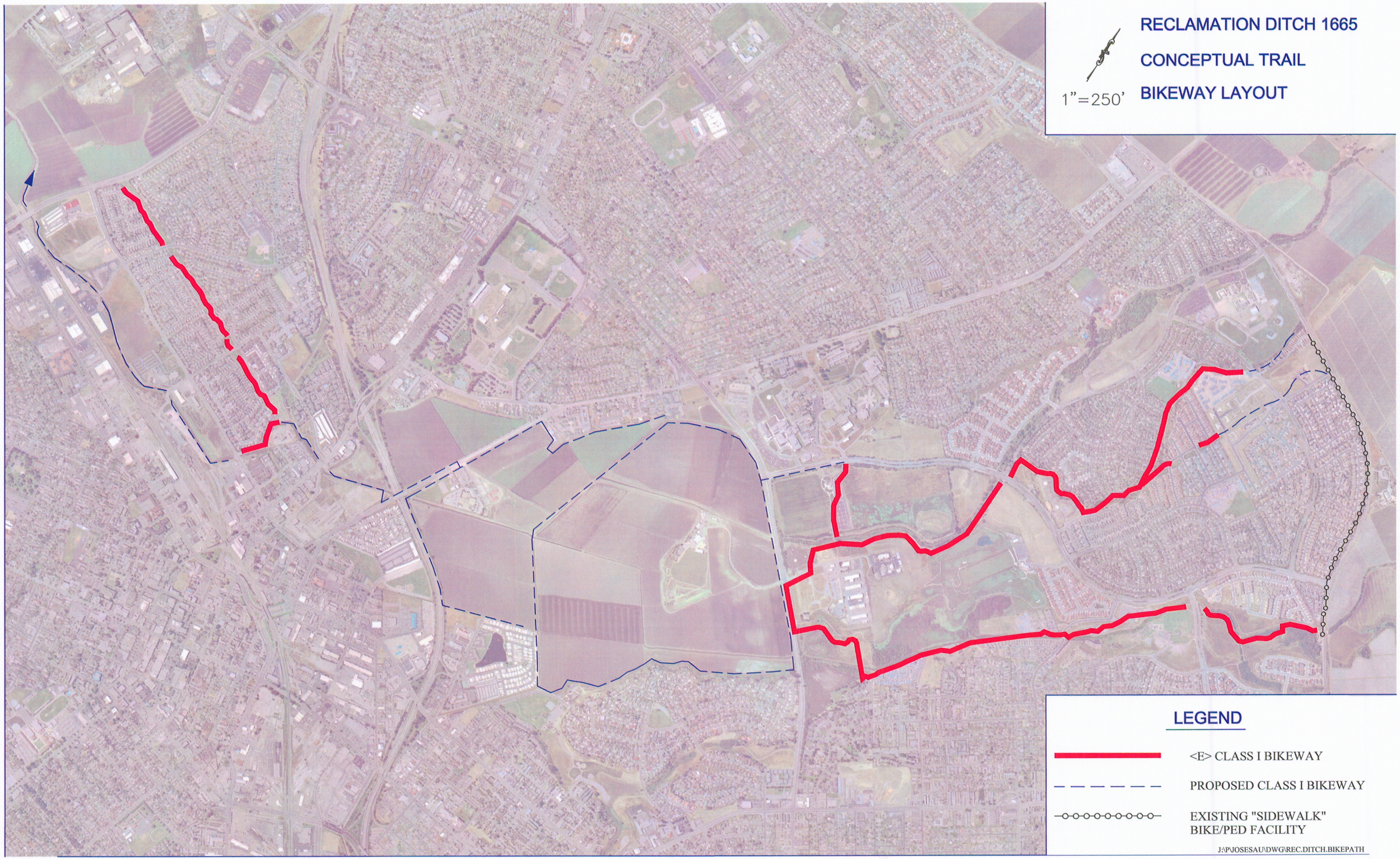

RECLAMATION DITCH 1665
CONCEPTUAL TRAIL
1"=250'
BIKEWAY LAYOUT
LEGEND
<E> CLASS I BIKEWAY
PROPOSED CLASS I BIKEWAY
EXISTING "SIDEWALK"
BIKE/PED FACILITY
J:\P\JOSESAU\DWG\REC.DITCH.BIKEPATH

Airport Boulevard Bike/Pedestrian Bridge

Another critical east-west connection through the city is Airport Boulevard in the south Salinas industrial area. The obstacle for continuous bicycle circulation from east Salinas to the south Salinas industrial area would be the crossing over US 101. The existing interchange is over 40 years old and a poor design that barely accommodates existing auto/truck traffic and with no room for the installation of bicycle lanes. New interchange improvements are estimated to cost over $50 million (Caltrans estimate) and may not be completed until 2010. A bike lane extension (from the east side of Airport Blvd.) will be pursued over US 101 to provide enhanced access between these two sides of the highway concurrent with Interchange Improvement design/construction.

Short Term Priorities

In light of the two-year cycle for each adopted Bikeways Plan, the City has identified priority projects to pursue over the next two years along with cost estimates for those facilities. The order of listing for the 2002-2004 Plan does not itself represent a priority ranking of these facilities. Each facility and program will be pursued based on the availability of funding.

Table 3 - Short Term Priorities

Short Term Priorities Project	Limits	Status	Length (miles)	Estimated Cost
Abbott Street (9111) Bike Lanes	Romie Lane to Harkins Rd	Fully Funded. Fall 2002 Completion	0.76	$ 2,368,000
Boronda Road Bike Lanes	Main St to San Juan Grade	Fully Funded. Spring 2003 Construction	0.30	$ 270,000
Front Street	John St. to Alisal St	Fully Funded. Dec 2002 Completion	0.37	$2,700
Gabilan/Natividad Creek Bicycle Path	Gabilan Creek to Nativ. Creek; Constitution to Gabilan Creek	Fully Funded. Spring 2003 Completion	1.40	$ 680,000
Rossi Street Bike Lanes	Sherwood to Reclamation Ditch	Fully Funded. Fall 2003 Construction	0.36	$448,000
Bridge Street Bike Lanes	Rossi Street to N Main St	Complete Design. Need to secure funds	0.20	$ 419,000
N Main St Bike Lanes	Alvin Drive to San Juan Grade Road	20% Funded. Need to secure funding	0.60	$890,000
Harkins Rd. Bike Lanes	Dayton Street to City Limits	Fully Funded. Fall 2002 Completion	0.30	$97,000
ITC Bike Station		Develop conceptual plan.		$100,000
Total	Total		4.58	$5,274,700

Gabilan Creek Bike Path

Work will continue to complete the Gabilan/Natividad Creek Bike Path. This project is fully funded with completion anticipated by Spring 2003. When completed, the system will provide a Class I bikeway that connects Northeast and East Salinas with health services from Natividad Medical Center and the County Health Department. The bikeway will also serve as an off road connection to recreational facilities such as the Constitution Blvd. Soccer field Complex, the Twin Creeks Golf Course, and Natividad Creek Park.

Abbott Street Bike Lanes

Construction is expected to begin in September 2002 for this project that will provide 4,000 feet of bike lanes along Abbott Street from Romie Lane to Harkins Road. This segment of the bikeway network will provide much needed bike access to the industrial section of the City. Class II bikeways will make the connection from the industrial corridor at Abbott Street to health services at Romie Lane and the residential community in South Salinas. Future extension of the bikeways along Abbott Street to John Street and the connection to East Salinas is planned in three to five years.

CURRENT AND FUTURE COMMUTING TRENDS

Salinas commuters currently support a variety of modes of travel to work. According to the Census Transportation Planning Package, about 1% of all Salinas commuters biked to work in 1990. Since 1991, the City's bicycle network has grown from 17 miles to nearly 65 miles of bicycle facility on the network, a 400% increase since 1991.

Bicycle parking facilities are also expanding as a result of commercial and industrial developments meeting the City's new bicycle parking requirements in the Zoning Code. Additionally, the City provides bicycle racks to public locations and requires them at private employment sites. As a result, bicycle parking facilities are more generally available, and continue to be installed throughout Salinas.

The heavy cost of commuting by private automobile will favor an increase in cycling as a commute alternative in the future. As noted previously, the annual commute costs for cyclists are about 3% of those for drivers of new cars. Commute costs will continue to outpace income growth, making bike commuting an increasingly attractive alternative to auto commuting.

The public's desire for maintaining good health is growing. Cycling provides the benefit of improved health while meeting basic transportation needs. With a citywide system of bike routes in place, a significant increase in the use of cycling as a travel mode is anticipated.

Public costs for developing and maintaining roadways used exclusively for cars continues to outpace available resources. Public support for alternative modes is expected to grow when the full costs of an auto-centered transportation system is understood.

Appendix A – Bicycle Funding History and Prospects

Since 1991, the City has been active in pursuing all available grant funding opportunities for potential bicycling projects. As a result, over the last 7 years the City has received over $3,500,000 in grant funding for bicycle improvements. The City will continue to vigorously pursue future grant funding to complete the network by 2010.

In addition, the City has required as a condition of new development approval, the construction of bikeways by private developers. Since 1989, approximately 8 miles of new Class I or II bikeways have been built by private development.

The City estimates it will receive a minimum of $300,000 per year in grant funding for the remainder of the Bikeway Plan; or at least $2,400,000 over the next eight years. This would result in an estimated total of $5,990,000 invested in the system at completion of the network. Staff has been involved in preparing grant applications to secure bicycle facility funding under the following grant programs:

- Transportation Enhancement Activities (TEA)
- Congestion Mitigation and Air Quality Funds (CMAQ)
- Proposition 116
- Bicycle Transportation Account (BTA)
- Environmental Enhancement and Mitigation (EEM)
- Regional Surface Transportation Program (RSTP)
- Transportation Development Act (TDA) 2% allocation
- AB2766 – Air District Clean Air Grant Program

The table on the following page summarizes Bike Grants secured by the City to help finance the Salinas Bikeways.

Table 4– Secured Bike Grants

YEAR	GRANT	AMOUNT	PROJECT
1994 (+)	-	$ 35,000	Misc. Bike Route Signs
1996	AB2766	$ 184,000	Misc. Bike Route Signs
1996	BLA	$ 58,500	Laurel West Bike Path Improvements
96/97	AB2766	$ 100,000	Sherwood/Bernal Bike Lanes
1997	CMAQ	$ 7,500	Bike Locker Installations
1997	BLA	$ 12,800	Bike Rack Installations
97/98	AB2766	$ 100,000	Maryal Drive Bike Lanes
97/98	AB2766	$ 100,000	Alisal Bike Path (UPRR Underpass)
1998	2% TDA	$ 65,000	Sherwood/Bernal Bike Lanes
98/99	2% TDA	$ 35,000	Alisal Bike Path (Skyway to Bardin)
98/99	AB2766	$ 70,000	County - Natividad - Gabilan Bike Path
99/00	AB2766	$ 100,000	County - Natividad - Gabilan Bike Path
99/00	AB2766	$ 20,000	Bike Lockers
2000	TEA	$ 310,000	County - Natividad - Gabilan Bike Path
2000	CMAQ	$ 150,000	Boronda Road Bicycle & Pedestrian Enhancements
2000	CMAQ	$ 838,000	Abbott Street Bike Lanes and Sidewalk
2000	CMAQ	$ 148,000	Rossi Street Bike Lanes and Sidewalk
2000	AB2766	$ 44,900	Work Street Bike Lanes (Alisal to John)
2000	AB2766	$ 15,000	City Bike Racks
2001	AB2766	$ 100,000	Abbott Street Bike Lanes and Sidewalk
2001	2% TDA	$ 250,000	Abbott Street Bike Lanes and Sidewalk
2002	CMAQ	$ 165,000	Abbott Street Bike Lanes and Sidewalk
2002	BTA	$ 400,000	Abbott Street Bike Lanes and Sidewalk
2002	NMTP	$ 200,000	Natividad Creek/Gabilan Creek/County Bike Path
	TOTAL	**$ 3,508,700**	

APPENDIX B - BIKEWAYS DEFINED

"Bikeway" is a general term used to refer to facilities that provide primarily for bicycle travel regardless of class (California Department of Transportation Highway Design Manual 1001.1). There are three classes of bikeways:

Class I Bikeways are generally referred to as **Bike Paths** and provide a completely separated right-of-way for the exclusive use of bicycle and pedestrian traffic with crossflow minimized. An existing example in Salinas would be the Natividad Creek Bike Path which runs along Natividad Creek, extending from Las Casitas Drive to Gee Street.

Class II Bikeways are referred to as **Bike Lanes** and provide a striped lane for one-way travel on a street or highway, (to the right of the same direction vehicle travel lane) and typically include signs placed along the street segment. Examples are streets like Pajaro Street, Harden Parkway, Constitution Boulevard and Freedom Parkway.

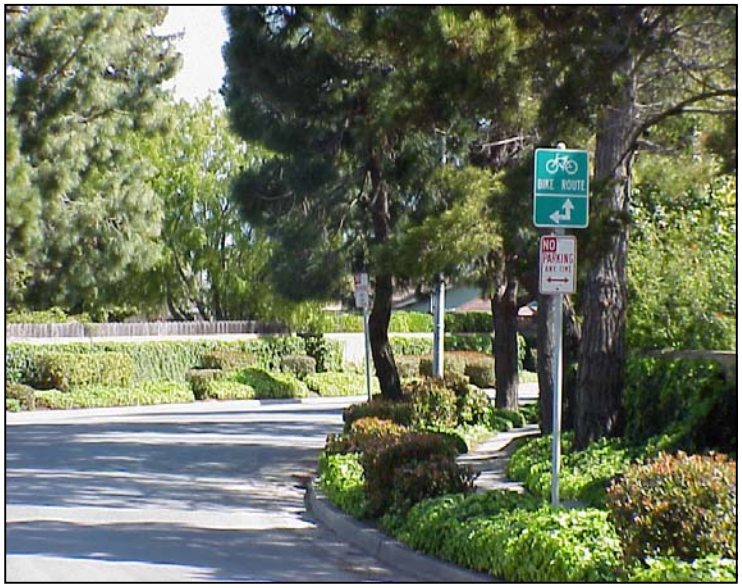
Class III Bikeways are referred to as **Bike Routes** and provide use of the edge of a street segment shared with motor vehicle and possibly pedestrian traffic. These facilities are a city street with signs designating the segment for a Bike Route without additional striping or related facilities. An example in Salinas would be Gabilan Street from Pajaro Street to Church Street.

GENERAL APPLICATION OF BIKEWAY TYPE

Class I Bikeways **(paths)** will be used when most direct routes can be established from one geographical location to another, and right-of-way is readily available. Bikeways will most commonly occur along creeks, within the Carr Lake-Natividad Creek-Gabilan Creek areas, and parallel to high-volume, high-speed streets. These streets must be capable of providing adequate adjacent or nearby right-of-way for construction of said facilities. They should provide a significant connection from one land use to another where bike use can be considered desirable (i.e. residential to shopping), where traffic volumes are in excess of 25,000 vehicles per day, and speeds are posted at or above 40 MPH. Design of these facilities shall be in strict conformance with Caltrans Design Guidelines.

Class II Bikeways **(lanes)** will typically be used along arterial and collector streets where adequate width is provided, and traffic speeds are typically posted for 40 MPH or less. Facilities shall be marked with striping and signage as determined by the City Engineer and/or as outlined herein.

Class III Bikeways **(routes)** will be generally used on low-volume, low-speed streets where it is desirable to retain on-street parking (primarily in residential areas). Class III facilities shall be marked with signs as determined by the City Engineer and/or as outlined herein. These are generally placed on lower volume (less than 7,500 vehicles per day) and lower speed (35 mph and less) residential – oriented streets.



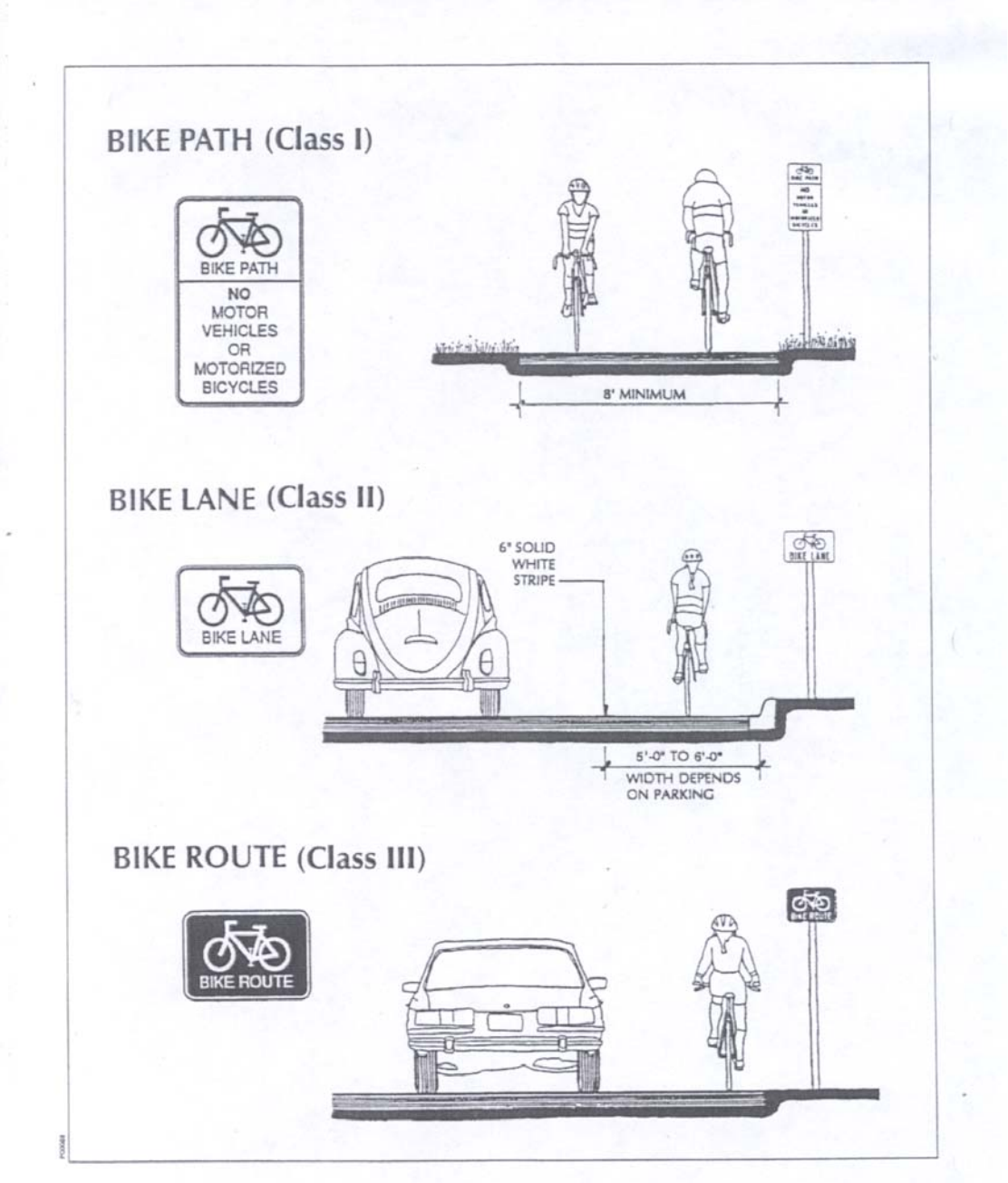


Figure 8 - Bikeway Designations

APPENDIX C - History of SBPAC Accomplishments

The Salinas Bicycle and Pedestrian Advisory Committee (SBPAC) is instrumental in the development of the Bikeways Plan. The committee stays actively involved in recommending locations for bikeways and bike parking facilities. The committee meets formally once a month and participates actively in the formation of City policy towards creating a bicycle and pedestrian friendly community.

Some of the committee members are also members of the County and Regional Bicycle and Pedestrian committee ensuring regional and City goals support each other. The table below summarizes the highlights of the committee's history.

Year	Accomplishment/Event
1988	SBPAC formed
1991	Recommended First Bikeways Plan for Approval to Council
1995	Bike/Walk to Work Weekday
1996	Recommended 1996 Bikeways Plan for Approval to Council
1997	**Sponsored Bike Week 1997**
1998	**Sponsored Bike Week 1998** Recommended 1998 Bikeways Plan for Council Approval Provided staff with options for using traffic fees to fund non-motorized modes of travel Bicycle Ordinance Update including requirements for Bike Parking Facilities Began development of recommendations for Proposed ITC Station
1999	**Sponsored Bike Week 1999**
2000	**Sponsored Bike Week 2000** ▪ Bike to Work/Hartnell College Bike to School ▪ BMX at Natividad Park/Family Fun Ride ▪ Bike Week Criterium Bike Races Formalized recommendations for a Bikestation Program at the ITC Station
2001	**Sponsored Bike Week 2001** ▪ Family Bike Ride Event ▪ Bike to Council Day (Media Event)
2002	**Sponsored Bike Week 2002** ▪ Bike vs Car Challenge (Media Event) ▪ Bike to Work/Santa Rita School Bike to School ▪ Bike Week Rodeo (Bike Safety Promotion) ▪ Bike to Council Day (Media Event) ▪ Northridge Bike Rodeo (Bike Safety Promotion)

Appendix D – Joint Council –SBPAC Meeting Presentation Notes - March 21, 2000

SALINAS CITY COUNCIL
SALINAS BICYCLE & PEDESTRIAN ADVISORY COMMITTEE
JOINT MEETING AGENDA
MARCH 21, 2000

A. GOALS AND OBJECTIVES OF THE SBPAC (ROB R.)

- Make bicycling safe, convenient and pleasurable for daily trips;
- Provide safe & secure bicycle facilities for riders of all riding levels;
- Address safety hazards that impact bicycling in a timely manner;
- Provide a bicycle network that connects all sections of the City;
- Increase the bicycle trip rate to 10% of all trips by the year 2010.

B. ACCOMPLISHMENTS OF THE SBPAC TO DATE: (PAUL A.)

- SBPAC was created in 1988 - meets monthly to discuss issues;
- Developed the Salinas Bicycle Plan and two updates thereof;
- Updated the Salinas City Code as related to Bicycle Traffic laws;
- Promoted bicycle use & safety at Earth Day, Bike Week and Rideshare events;
- Secured and/or supported grant funding requests to build bike facilities;
- Work with area businesses to promote cycling and provide facilities for bikes;

C. SPECIFIC PROGRAMS ON WHICH THE COMMITTEE WISHES TO ENDEAVOR WITH OTHER PARTNERS TO CONTINUE PROMOTING THE SBPAC GOALS:

ENGINEERING

1. Continue securing funds for bicycle & pedestrian facilities -requires City funding commitment to provide "matching" funds required of most grants (David C.);
2. Continue developing bicycle network links to connect all areas of the City. Provide safe passage over UPRR tracks; US 101, & Creeks/Rivers/Ditches) (David C.):
   - Appreciation for support of Maryal-Bernal-Sherwood Bike Facility;
   - Appreciation for support of E. Alisal Bike Lanes (Front-US 101; Skyway-Bardin);
   - Need bike connection over US 101 at Airport Boulevard;
   - Need bike connection on Boronda Road from US 101 to San Juan Grade;
   - Need bike connection along the Abbott-Harkins-Hanson corridor;
3. Request consideration of a Bike Station at the Intermodal Transportation Center. (Identify size requirements and facilities proposed)

EDUCATION

1. Develop City-County sponsored educational program for elementary school students to identify "basics" of pedestrian/bicycle safety -requires a responsible and knowledgeable staffing resources (i.e. Monterey County, City of Salinas, local colleges, retired Police officers, etc.) (Diana J.);

ENFORCEMENT

1. Request Police enforcement of bicycle helmet law & traffic infractions (Diana J:);

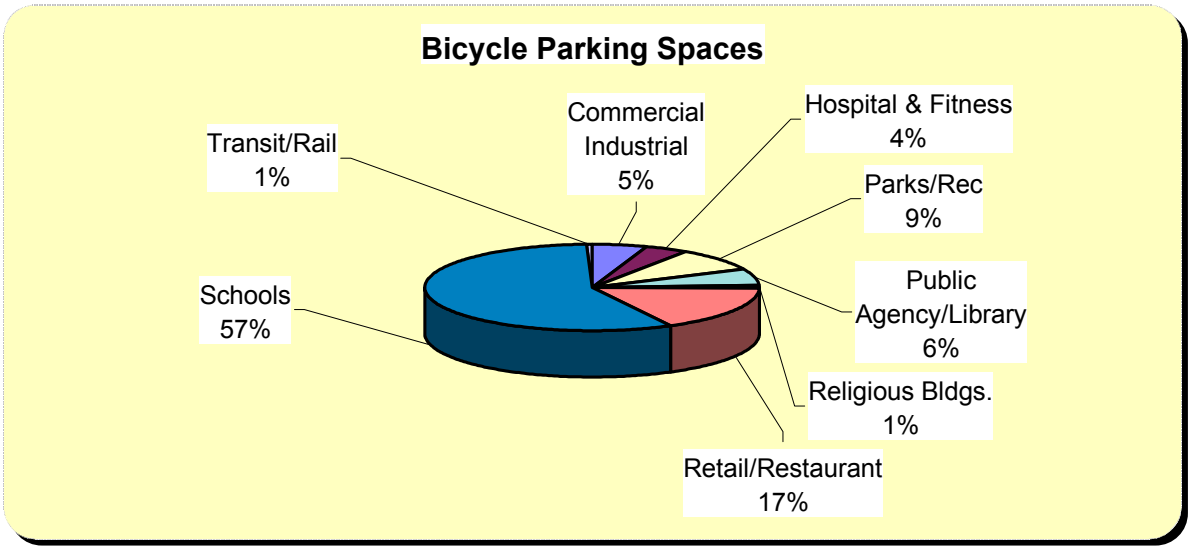
D. SUMMARY (ERIC P.)

- *APPRECIATE COUNCIL'S SUPPORT OF BICYCLE FACILITIES/ISSUES IN THE PAST*
- *APPRECIATE ACCOMPLISHMENTS TO DATE*
- *ACKNOWLEDGE A NEED FOR FACILITIES TO COMPLETE A STRONG BICYCLE NETWORK TO SERVE ALL SALINAS RESIDENTS*
- *DESIRE AN EDUCATIONAL PROGRAM AND ENHANCED ENFORCEMENT TO IMPROVE SAFETY ASPECTS ASSOCIATED WITH BICYCLING*
- *COMMITTED TO WORKING WITH THE CITY AND OTHER AGENCIES TO OBTAIN OUR GOALS AS A CITY*
- *INVITE COUNCILMEMBERS TO PARTICIPATE IN BIKE WEEK TO SERVE AS LEADERS IN PROMOTING BICYCLING*
  - *BIKE WEEK 2000: May 15-19, 2000;*
  - *BIKE TO WORKDAY: Thursday, May 18,2000*

Appendix E – Bike Rack Locations in the City

Bicycle Parking Facilities, racks and lockers, are an integral part of a bikeway system. Convenient and safe parking facilities promote bicycling as an alternative mode of travel.

City staff surveyed bicycle parking facilities in early 2000. The data below represents the parking spaces available and their locations.



Location of Bike Racks	# of Bike Spaces
Commercial Industrial	208
Hospital & Fitness	158
Parks/Rec	336
Public	237
Religious Bldgs.	38
Retail/Restaurant	657
Schools	2219
Transit/Rail	24
Total	3,877

Street Name	Number	Business	# of Spaces	Type of Business
Acacia Street				
	403	Mission Park School	94	Schools
Auto Center Circle				
	222	MY Nissan	7	Retail/Restaurants
	500	Cardinale Volkswagon	4	Retail/Restaurants
	555	Cardinale Mazda	4	Retail/Restaurants
	700	Salinas Toyota	10	Retail/Restaurants
	800	Bob Wills Dodge	11	Retail/Restaurants
	900	Salinas Hyundai Isuzu	9	Retail/Restaurants
	1100	Salinas Valley Ford	6	Retail/Restaurants
Bardin Road				
	425	Bardin Elementary School	28	Schools
Bardin Way				
	1415	Jaycees Tot Lot	7	Parks / Recreation
Blanco Circle				
	901	Mo Co Office of Education	26	Public Agency / Library
Brunken Avenue				
	655	Five Star Pallet Co.	7	Commercial / Industrial
Burlington Drive				
	1714	John E. Steinbeck Elementary School	40	Schools
California Street				
	705	Lincoln School	96	Schools
Capitol Street				
	120	Roosevelt Elementary School	48	Schools
Central Avenue				
	37	ALANON	5	Public Agency / Library
	420	Central Park	21	Parks / Recreation
Church Street				
	320	Commercial Building	6	Commercial / Industrial
Clay Street				
	117	YMCA	21	Hospital / Fitness
Constitution Blvd.				
	1441	Natividad Hospital - Building 300	9	Hospital / Fitness
	1441	Natividad Hospital - Building 400	9	Hospital / Fitness
	1441	Natividad Hospital - Emergency Room	18	Hospital / Fitness
Declaration Street				
	1793	Creekside Neighborhood Park	7	Parks / Recreation
Del Monte Avenue				
	1437	Alisal Elementary School	19	Schools
E. Alisal Street				
	312	Monterey County Transportation	9	Public Agency / Library
	369	Longs Drug Store	8	Retail/Restaurants
	497	Corner Market	5	Retail/Restaurants
	505	El Jaliscience Restaurant	6	Retail/Restaurants
	516	La Princesa Market	5	Retail/Restaurants
	545	La Plazita	7	Retail/Restaurants
	655	El Zacatecano Restaurant	5	Retail/Restaurants
	704	Tom's Alisal Liquor	5	Retail/Restaurants
	730	Old Video City	5	Commercial / Industrial
	800	Washington Mutual Bank	2	Commercial / Industrial
	816	La Movida Nightclub	5	Retail/Restaurants
	825	Villalobos Market	5	Retail/Restaurants
	840	McDonalds	5	Retail/Restaurants
	1033	Las Palmas Plaza	5	Retail/Restaurants
	1155	El Sausal Middle School	100	Schools
	1330	Firehouse Recreation Center	19	Parks / Recreation
E. Alvin Drive				
	24	Social Security Office	34	Public Agency / Library
	631	Natividad Plaza	8	Retail/Restaurants

Street Name	Number	Business	# of Spaces	Type of Business
E. Blanco	924	Pacific Coast Farm Credit Union	5	Commercial / Industrial
E. Boronda Road	600	McDonalds	5	Retail/Restaurants
	640	Nob Hill Foods	5	Retail/Restaurants
	662	Longs Drug Store	10	Retail/Restaurants
E. Laurel Drive	855	MoCo Public Works	9	Public Agency / Library
	867	Mission Trails ROP Center	16	Schools
E. Market Street	1255	Fremont Elementary School	85	Schools
E. Romie Lane	450	Memorial Hospital	39	Hospital / Fitness
El Dorado Drive	1655	El Dorado Park	7	Parks / Recreation
	1655	El Dorado Park	7	Parks / Recreation
Falcon Drive	1530	Park	5	Parks / Recreation
Fremont Street	683	Hebbron Heights	18	Parks / Recreation
Hansen	1215	Lantis Coorporation	8	Commercial / Industrial
	1275	Smuckers Jam Co.	20	Commercial / Industrial
Hartnell Park	725	Hartnell Park	30	Parks / Recreation
Homestead Avenue	156	Hartnell - Amphitheater	22	Schools
	156	Hartnell - Animal Health Tech Building	10	Schools
	156	Hartnell - Dining Area	8	Schools
	156	Hartnell - Gymnasium	40	Schools
	156	Hartnell - Performing Arts Building	8	Schools
	156	Hartnell - Student Center & Library	63	Schools
	156	Hartnell - Student Center - Homestead	18	Schools
	156	Hartnell - Tennis Courts	11	Schools
	156	Hartnell - Track	10	Schools
	156	Hartnell - Transfer Center	10	Schools
	156	Hartnell - Weight Room	7	Schools
Independence Blvd	1900	Everett Alvarez High School	18	Schools
	1900	Everett Alvarez High School	29	Schools
Iverson Street	560	Washington Middle School	50	Schools
	919	Palma High School	33	Schools
John Street	1130	Los Padres Elementary	36	Schools
	241	Sharpes Market	5	Retail/Restaurants
Kip Drive	55	North Salinas High School	124	Schools
Kittery	1770	Creekside Elementary School	23	Schools
La Guardia	730	One Stop Career Center	9	Public Agency / Library
	744-A	USDA Service Center	9	Public Agency / Library
	752	Mo Co Dept of Child Support Services	9	Public Agency / Library
Larkin Street	580	Lutheran Church of Good Shepherd	12	Religous/Church/Synagogue
	645	Laurelwood School	135	Schools
Las Casitas Drive	680	Virginia Rocca Barton School	61	Schools
Laurel Drive	340	Laurel Park	14	Parks / Recreation

Street Name	Number	Business	# of Spaces	Type of Business
Lincoln Avenue				
	200	Salians City Hall	13	Public Agency / Library
	222	Salinas Police Department	10	Public Agency / Library
	320	Recreation Center	7	Parks / Recreation
	350	Steinbeck Library	7	Public Agency / Library
Linwood Drive				
	1256	El Gabilan Elementary	68	Schools
Main Street				
	1	Steinbeck Center	21	Parks / Recreation
	131	Sang's Café	7	Retail/Restaurants
	149	Crystal Theater	7	Parks / Recreation
	171	First Awakenings	7	Schools
	202	Halltree Antiques	7	Retail/Restaurants
	221	Golden Fish	7	Retail/Restaurants
	247	Former Gold's Gym	7	Hospital / Fitness
	272	Julian's Taylor Shop	7	Retail/Restaurants
	301	Community Bank	7	Commercial / Industrial
	347	Carolyn's	7	Retail/Restaurants
	619	Seven Eleven	4	Retail/Restaurants
	645	Jack In The Box	3	Retail/Restaurants
McKinnon Street				
	1561	Harden Middle School	176	Schools
Modoc Avenue				
	1465	Natividad Elementary	54	Schools
Moffet Street				
	1550	KION Channel 46	12	Commercial / Industrial
Moffett Street				
	1566	IDT	7	Commercial / Industrial
Monterey Street				
	141	Bobcat Bicycles	8	Retail/Restaurants
Mortenson Avenue				
	30	Salinas Municipal Air Terminal	7	Transit/Rail
N. Davis Road				
	1030-A	La Plaza Bakery	5	Retail/Restaurants
	1061	Carl's Jr.	6	Retail/Restaurants
	1209	Diamond Dental	5	Hospital / Fitness
	1223	Albertson's	11	Retail/Restaurants
	1250	Chevron Gas Station	5	Retail/Restaurants
	1259	El Pollo Loco	5	Retail/Restaurants
	1277	AT&T Wireless	7	Retail/Restaurants
	1285	Community Bank	3	Commercial / Industrial
	1293	Western Dental	5	Hospital / Fitness
	1339	Costco	10	Retail/Restaurants
	1369	Wendy's	9	Retail/Restaurants
	1375	Walmart	20	Retail/Restaurants
	1391	Marie Calendar's	9	Retail/Restaurants
	1401	Outback Steakhouse	7	Retail/Restaurants
	1419	Ross	13	Retail/Restaurants
	1425	Ethan Allen	7	Retail/Restaurants
	1447	Chuck E Cheese	11	Retail/Restaurants
	1449	Chevy's	7	Retail/Restaurants
	1469	Serta Mattress	5	Retail/Restaurants
N. Main Street				
	919	Side Pocket Billiards	7	Parks / Recreation
	965	Magana's Meat Market	10	Retail/Restaurants
	1201	POP's Market	4	Retail/Restaurants
	1400	Gabilan Library	13	Public Agency / Library
	1488	Auto Zone	9	Retail/Restaurants
	1502	Salinas Athletic Club	16	Hospital / Fitness
	1546	Safeway	5	Retail/Restaurants
	1640	Target	20	Retail/Restaurants
	1648	Payless Shoes Store	5	Retail/Restaurants
	1690	Bed Bath & Beyond	5	Retail/Restaurants
	1816	TGI Fridays	12	Retail/Restaurants
	2460	Salvation Army	18	Public Agency / Library

Street Name	Number	Business	# of Spaces	Type of Business
N. Sanborn Road				
	575	Walgreens	7	Retail/Restaurants
	745	Bread Box Recreation Center	7	Parks / Recreation
	901	Jesse G. Sanchez Elementary School	24	Schools
	1300	La Paz Middle School	40	Schools
Natividad Road				
	1991	Seven Eleven	5	Retail/Restaurants
Nogal Drive				
	1395	Natividad Park	28	Parks / Recreation
Northridge Mall				
		Northridge Mall - Carl's Jr. Entrance	5	Retail/Restaurants
		Northridge Mall - JCPenney Entrance	7	Retail/Restaurants
		Northridge Mall - Macy's - North Entrance	21	Retail/Restaurants
		Northridge Mall - Macy's - West Entrance	7	Retail/Restaurants
		Northridge Mall - Mervyn's Entrance	7	Retail/Restaurants
		Northridge Mall - Music Land Entrance	5	Retail/Restaurants
		Northridge Mall - N. Entrance Food Court	5	Retail/Restaurants
		Northridge Mall - S. Entrance Food Court	17	Retail/Restaurants
		Northridge Mall - Sears Auto Center	11	Retail/Restaurants
		Northridge Mall - TimeOut Entrance	10	Retail/Restaurants
	350	Northridge Cinema	14	Parks / Recreation
	370	Toys R Us	10	Retail/Restaurants
	840	Hometown Buffet	5	Retail/Restaurants
Padre Drive.				
	1188	Hayashi & Wayland	7	Commercial / Industrial
Palma Drive				
	455	Notre Dame High School	12	Schools
Plaza Circle				
	45	Visiting Nurses Association	2	Hospital / Fitness
Post Drive				
	1011	U.S. Post Office	14	Public Agency / Library
Railroad Avenue				
	40	AMTRAK Station	7	Public Agency / Library
Rider Avenue				
	1300	Frank Paul School	24	Schools
	1400	Firestation # 5	5	Public Agency / Library
Rochex Avenue				
	321	Kamman School	201	Schools
Rossi Circle				
	6-F	Pro Source Wholesale Floor Coverings	5	Commercial / Industrial
S. Main Street				
	405	Bank Of America	2	Commercial / Industrial
	408	Old Town Dental Care	8	Hospital / Fitness
	430	Comerica Bank	8	Commercial / Industrial
	726	Salinas High School	6	Schools
	726	Salinas High School	16	Schools
	726	Salinas High School	3	Schools
	726	Salinas High School	21	Schools
	840	Salinas City Elementary School District	7	Schools
	900	Central Coast Credit Union	7	Commercial / Industrial
	945	Jack in the Box	3	Retail/Restaurants
	1050	Chevron Gas Station	5	Retail/Restaurants
	1140	Longs Drug Store	7	Retail/Restaurants
	1150	Albertson's	7	Retail/Restaurants
	1154	Trigger Hill	5	Retail/Restaurants
	1260	New Horizons Comp. Learning Center	5	Schools
	1275	Star Market	16	Retail/Restaurants
	1276-B	Hollywood Video	10	Retail/Restaurants
	128	Blockbuster	12	Retail/Restaurants
	1320	Nob Hill Foods	10	Retail/Restaurants
	1366	Zephs	7	Retail/Restaurants
	369/371	YMCA	7	Hospital / Fitness

Street Name	Number	Business	# of Spaces	Type of Business
S. Sanborn Road				
	945	McDonalds	5	Retail/Restaurants
	951	Pilot Travel Center	7	Commercial / Industrial
S. Wood Street				
	110	Sherwood Elementary School	17	Schools
Salinas Street				
	110	Salinas Transit Center	10	Transit/Rail
	333	Noland - Hammerly Law Offices	8	Commercial / Industrial
San Fernando Drive				
	1220	Claremont Park	36	Parks / Recreation
San Joaquin				
	2	Salinas Athletic Club	12	Hospital / Fitness
San Miguel Street				
	410	Monterey Park Elementary School	180	Schools
San Vincente Avenue				
	1130	Baptist Church	26	Religous/Church/Synagogue
Sausal Drive				
	757	Loma Vista Elementary	34	Schools
Schilling Place				
	340	MCCormick Schilling & Co	6	Commercial / Industrial
	1441	Household Credit Services	11	Commercial / Industrial
	1494	Household Credit Services - Child Care	10	Commercial / Industrial
Sherwood Place				
	10	Mount Toro High School	16	Schools
	20	Salians Adult School	22	Schools
Simas Street				
	10	Century Park 7 Theater	4	Parks / Recreation
Station Place				
	26	REA	7	Transit/Rail
Towt Street				
	401	Closter Park	63	Parks / Recreation
	1225	Cesar Chaves	26	Public Agency / Library
Vandenberg Street				
	715	Coca Cola	7	Commercial / Industrial
Victor Street				
	915	Laurelwood Park	7	Parks / Recreation
W. Alisal Street				
	65	Permit Center	7	Public Agency / Library
	123	The Californian	7	Commercial / Industrial
W. Market Street				
		Olivias Café	5	Retail/Restaurants
	315	Bicycle Fitness Center	10	Retail/Restaurants
	875-G	Economy Auto Body & Paint	7	Retail/Restaurants
Westridge Parkway				
	1125	Pat's Monogram	7	Retail/Restaurants
Williams Road				
	608	McDonalds	5	Retail/Restaurants
	614	La Princesa Market	5	Retail/Restaurants
	615	Cesar Chavez Library	7	Public Agency / Library
	624	Stuft Pizza	7	Retail/Restaurants
	777	Alisal High School	44	Schools
Work Circle				
	7	Electrical Distributor	5	Commercial / Industrial
Work Street				
	590	Gabilan Manufacturing	13	Commercial / Industrial
	650	Service Station Computer Systems	7	Commercial / Industrial
	850/860	Salinas Valley Shippers	5	Commercial / Industrial
	900	Boskovich Farms Inc.	11	Commercial / Industrial
		Grand Total	**3877**	

Appendix F – Bike Accident Summary

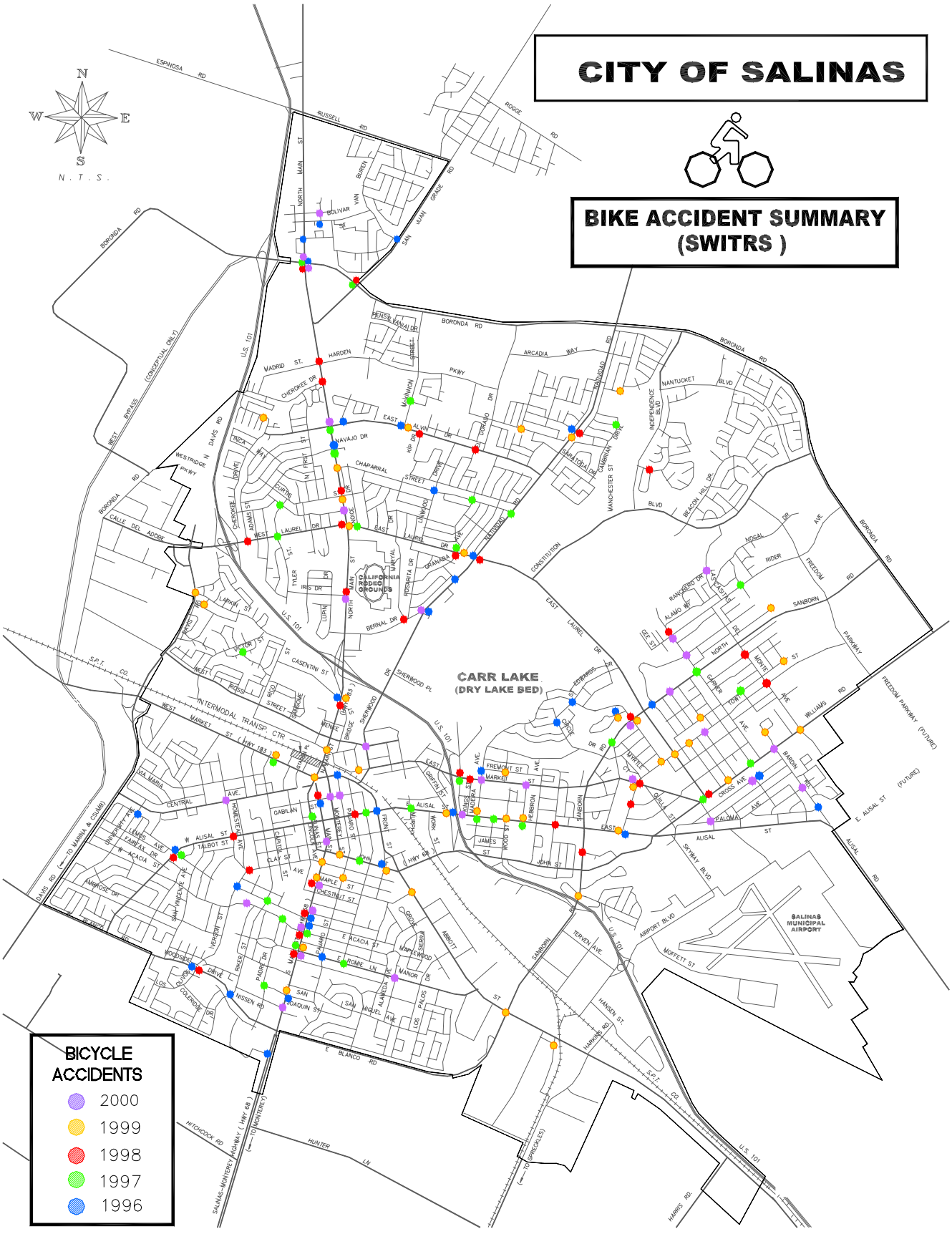
YEAR	# COLLISIONS
2000	51
1999	49
1998	40
1997	37
1996	36

The following table summarizes data extracted from the Statewide Integrated Traffic Records System (SWITRS) shows an increase in collisions from 1996 to 2000.

The increase collisions reflect the increase in bicycle use in the City. Current surveys show that from 1995 to 2002 bicycle ridership has increased 20%. From 1999 to 2002 there was an observed 46% increase in bicycle use .

The collision data and the ridership data suggests that an increasing number of collisions involving bicycles is due to the increase of people are using bicycles to travel in Salinas.

These findings point towards the need for education, one of the "three E's" discussed earlier in the plan as more bicycle commuters and motor vehicle drivers find themselves on the road together. Bicycle Safety Education is a necessary component of the bicycle plan and the City will continue community outreach with its partners, the SBPAC and the Monterey County Health Department.


CITY OF SALINAS
BIKE ACCIDENT SUMMARY
(SWITRS)
N
W
E
S
N.T.S.
BICYCLE ACCIDENTS
2000
1999
1998
1997
1996
CARR LAKE
(DRY LAKE BED)
CALIFORNIA RODEO GROUNDS
SALINAS MUNICIPAL AIRPORT
BORONDA RD
U.S. 101
INTERMODAL TRANSP. CTR
S.P.T. CO.
E. ALISAL ST (FUTURE)
FREEDOM PARKWAY (FUTURE)
SALINAS-MONTEREY HIGHWAY (HWY 68)

Bicycle Count Summary

ANNUAL COUNT COMPARISON

97 - 02 COMPARISON

STREET	1997	2002	% Diff
Alisal St., W. @ Homestead Ave.	46	26	-43%
Calaveras @ Ukiah	37	29	-22%
Del Monte Ave. @ Williams Rd	63	102	62%
Los Palos Dr. @ San Jose St.	3	4	33%
Palma Dr. @ Iverson St.	26	32	23%
S. Main St. @ San Joaquin St.	26	13	-50%
St. Edwards @ Madeira	14	21	50%
Towt St. @ Dewey Ave.	59	55	-7%
University @ Acacia St	49	20	-59%
TOTAL	***323***	***302***	12.07%

99 - 02 COMPARISON

STREET	1999	2002	% Diff
Abbott St. @ Blanco & Sanborn	13	24	85%
Alisal St., W. @ Homestead Ave	48	26	-46%
Calaveras @ Ukiah	24	29	21%
Casentini St. (100 Block)	8	16	100%
Del Monte Ave. @ Williams Rd	24	102	325%
Linwood Dr. @ Sequoia St.	41	45	10%
Palma Dr. @ Iverson St.	12	32	167%
S. Main St. @ San Joaquin St.	39	13	-67%
Towt St. @ Dewey Ave.	19	55	189%
University @ Acacia St	19	20	5%
TOTAL	***247***	***362***	46.56%

95 - 02 COMPARISON

STREET	1995	2002	% Diff
Alisal St., W. @ Homestead Ave.	41	26	-37%
Calaveras @ Ukiah	23	29	26%
Casentini St. (100 Block)	11	16	45%
Del Monte Ave. @ Williams Rd	59	102	73%
Larkin St. @ Flint Way	18	17	-6%
Linwood Dr. @ Sequoia St.	25	45	80%
Los Palos @ San Jose	0	4	
Palma Dr. @ Iverson St.	19	32	68%
S. Main St. @ San Joaquin St.	27	13	-52%
St. Edwards @ Madeira	10	21	110%
Towt St. @ Dewey Ave.	68	55	-19%
University @ Acacia St	17	20	18%
TOTAL	***318***	***380***	19.50%

TOTAL COUNTS

STREET	1995	1997	1999	2002
Abbott St. @ Blanco & Sanborn			13	24
Alisal St., E. @ Skyway			9	
Alisal St., E. @ Work St.			22	
Alisal St., W. @ Homestead Ave	41	46	48	26
Calaveras @ Ukiah	23	37	24	29
Casentini St. (100 Block)	11		8	16
Constitution @ Independence				27
Del Monte Ave. @ Williams Rd	59	63	24	102
Larkin St. @ Flint Way	18			17
Laurel Dr., E. @ Constitution Blvd.				19
Linwood Dr. @ Sequoia St.	25		41	45
Los Palos Dr. @ San Jose St.	0	3		4
Palma Dr. @ Iverson St.	19	26	12	32
Rossi St. @ Rico St.			7	
S. Main St. @ San Joaquin St.	27	26	39	13
Sherwood Dr. @ Sherwood Pl.		22	10	
Skyway @ Bardin			27	
St. Edwards @ Madeira	10	14		21
Towt St. @ Dewey Ave.	68	59	19	55
University @ Acacia St	17	49	19	20
TOTAL	***318***	***345***	***322***	***450***

APPENDIX G - DESIGN GUIDELINES FOR DEVELOPMENT OF BIKE FACILITIES

The design of bikeways shall conform with the Caltrans Bikeway Planning and Design Section as included in the State of California Highway Design Manual, except as modified herein. Design guidelines shall be the most recent version approved by the State (See page 72 for Chapter 1000 of the 2001 Caltrans Highway Design Manual.).

CITY OF SALINAS DESIGN STANDARDS FOR BICYCLE FACILITIES (MODIFICATIONS TO OR CLARIFICATION OF CALTRANS GUIDELINES)

In order for a bikeways plan to be effective, the overall plan must be consistent and predictable. This bikeways plan has included routes to connect the public with facilities to which they want to travel. To enhance the effectiveness of the bike network, continuous and predictable signing and striping/markings are necessary to eliminate confusion and inform the public that quality bicycle facilities exist.

The following are modifications to standards in the State of California Bikeway Planning and Design Guidelines included in the most recent version of the State Highway Design Manual which are included as part of the Salinas Design Standards for bikeway facilities.

SIGNS

Signs shall be mounted on either street light poles or standard traffic sign poles per City standards; located at or near street intersections. The number of signs installed along a bicycle route shall be sufficient to clearly identify the route for the cyclist, but not oversigned, which would burden maintenance efforts by the Public Service section. Signs shall be located at the beginning and end of each bikeway, at intersections with other bikeways, at all intersections with arterial and collector streets, at intervals not exceeding 2600 feet, and as deemed appropriate by the City Engineer. Bicycle Facility signs shall generally not be posted closer than 1000 feet (2 city blocks).

Signs for the various bike facilities shall be in accordance with the Uniform Sign Chart, most recent edition; the State of California Department of Transportation Standard Specifications, most recent edition; and shall be of the type and size shown within this appendix and as follows:

DESIGNATION	SIZE	DESCRIPTION
CLASS I FACILITY		
R44A	12" Wide x 24" High	Bike Path Symbol No Motor Vehicles
CLASS II FACILITY		
R81	24" Wide x 18" High	Bike Lane Symbol/Words
R81A	12" Wide x 5" High	"BEGIN"
R81B	8" Wide x 5" High	"END"
CLASS III FACILITY		
G34-G46	12" Wide x 12" High	Directional Arrows
G93	24" Wide x 18" High	Bike Route Symbol/Words
G93A	12" Wide x 5" High	"BEGIN"
G93B	8" Wide x 5" High	"END"

STRIPING

Striping of bike facilities within the City of Salinas shall conform to established City standards and applicable Caltrans Design Standards, most recent editions. All striping and pavement markings shall be of thermoplastic to ensure adequate life of the marking and allow maintenance crews to care for facilities in a reasonable manner. Thermoplastic shall include adequate abrasive material throughout its thickness to enhance the friction between tire and marking. Markings and striping shall be 90 mil in thickness on pavement subject to bike tire travel. The 6-inch (150 mm) line for Class 2 Bike Lane striping separating the bike lane from motor vehicle lane shall also have a 90-mil thickness. Again, adequate abrasive material shall be included throughout the thickness.

Striping for Class 1 and 2 facilities shall conform to City and Caltrans design standards. Drop lane (elephant-type tracks) for Class 2 Bike Lanes at intersections shall be 100 feet in length, except in the instance of arterial-arterial intersections where the length shall be 200 feet. Applicable Class 1 and Class 2 pavement markings shall be installed with related signs at the beginning of each Class 1 or 2 bikeway; at intersections with other bikeways (far side); at all intersections with arterial, collector, residential collector and major retail primary access points (far side); at intervals not exceeding 2600 feet; and as deemed appropriate by the City Engineer.

The installation of signs and striping/markings will require additional maintenance resulting in increased maintenance costs and demands for maintenance personnel to address bikeways facilities. Since Public Services has limited funding to expand and maintain additional facilities, funding must be expended in a manner that is efficient and promotes the development of safe and effective bicycle facilities. Thus, priority of projects identified in this bikeways plan has been given to projects which can economically and quickly develop City-wide bikeways facilities; and to projects that enhance safety, inter-connectivity of bikeways, Intermodal connectivity, and bicycle commuting.

BICYCLE PARKING FACILITIES

As mentioned previously, bicycle parking facilities are currently being provided primarily by developers as a condition of their development. This condition is required by the current zoning code (parking requirements) and is often made a condition of discretionary permits by the Public Works Department where bicycle facilities will serve either employees or customers. Bicycle parking facilities are typically bike racks, but can also be bike lockers.

Bike lockers are enclosed facilities which provide a high level of safety for the bicycle. Their use should be encouraged throughout the City, but especially in locations where bicycles will be left without the owner's attention for extended periods (4 hours or more), or at intermodal transportation links. Such locations may include, but are not limited to: Transit Centers, Intermodal Centers, Park and Ride lots, bus stations, etc. The drawback to bike lockers is that they take more space and are more costly than other parking facilities available.

The vast majority of bicycle parking facilities take the form of a bike rack, and bike racks take many forms. The old-fashioned bicycle racks were a stand-type rack where the wheel is rolled into a channel and several channels are placed together in a row to form the rack. These types can be found in more established developments. However, experience has shown that these types of racks often damage and/or bend the bicycle rim. New types of racks have been developed over the past few years, and include wave-, sidewinder- and/or ribbon-type racks. They are preferable because they do not cause wheel damage, take less space, are reasonably priced, come in sizes to meet the particular development's needs, offer better security for bicycles, and are more aesthetic (can be painted to match the development's color scheme). Samples and general designs for the racks mentioned above are also included in Appendix H on page 69 and shall be considered the "standards" for bicycle racks to be installed within the City. The City has installed the wave-type racks in Oldtown Salinas and along East Alisal Street (between King Street and Sanborn Road).

The bicycle parking facility(ies) to be installed shall be placed in a location which will not interfere with pedestrian access, will not impede ADA access, is convenient for the cyclist, and is in a secure location (visible and lighted, as applicable) to minimize the chance of theft. It is also desirable to locate them in areas protected from the weather, but in many instances this may not be practical. Because of Salinas' mild climate, it is important to establish parking facilities so that cyclists are encouraged to bike during the 9-10 months of non-threatening weather we experience during the year.

MAINTENANCE

Existing and future bikeways will be maintained with the goal of providing a smooth, consistent roadway surface. Because many bicycles have narrow wheels and high-pressure tires which are sensitive to the roadway surface, the development and maintenance of roadway shoulders can have a significant effect on the use of bikeway facilities.

STREET SWEEPING - The City has an ongoing street sweeping program which provides for periodic sweeping of the street adjacent to the street gutter. The program has historically been successful and is funded with a surcharge assessed to City properties as part of the garbage collection fee. The challenges to the program are:

1. Parked vehicles which interfere with complete sweeping of the street;

2. Construction and agricultural operations which result in continued migration of material from dirt/field areas to the street where it accumulates in the gutter;

3. A continued increase in City street mileage which requires sweeping. Additional money generated by the program does not offset the costs of resources (both for new street sweeping equipment and additional personnel) needed to maintain these new streets.

PAVEMENT REPAIR AND RESURFACING - Most pavement repairs done within the City of Salinas are done by Public Service maintenance personnel, with some repairs occurring as part of pavement rehabilitation and/or related Capital Improvement Projects. Nearly all of the funding is from gas taxes. This funding source is being stretched with the loss of other funding sources (i.e. Transportation Development Act (TDA) and Local Transportation Funding (LTF)) which have been transferred to Monterey-Salinas Transit (MST) and the Transportation Agency of Monterey County (TAMC) operations. These two funds account for approximately $3.0 million dollars which were once available for street maintenance.

Federal funding programs and gas taxes account for the vast majority of money available for street rehabilitation. Gas tax is the most flexible funding source available, but must cover many competing needs within the City. When funding is available for pavement repair and/or rehabilitation, improvements typically take the form of asphalt overlays or seal coats. Pavement repairs are done prior to an overlay/seal coat to ensure substructure can support traffic loads. It has long been the City's policy to extend overlays and seal coats to the gutter lip. This eliminates potential longitudinal seams and/or steps which could affect either motor vehicle or bicycle traffic.

The City Council's commitment toward street resurfacing in 2000 has resulted in the repair and upgrade of over 90% of the City's total street mileage. Staff has also developed a program to address the remaining 10% of streets over the next ten years, and will incorporate bicycle facilities when identified in this Bikeways Plan.

CATCHBASIN/DRAINAGE INLET GRATES - Catchbasin/drainage inlet grates, manhole covers, flushing inlet covers, etc., within bikeway facilities shall be designed and installed in a manner that provides an adequate surface for bicyclists. They should be maintained flush with the surface when resurfacing. Grates within bikeway facilities shall have openings which are narrow enough and short enough to assure bicycle tires will not drop into the grates, regardless of the direction of bicycle travel. City Type "A" catchbasins or other inlets with high inflow-bicycle safe grates are now installed as a standard. Type "A" inlets have bicycle-safe grates, and are the most commonly installed inlet.

FUNDING - As mentioned earlier, the City has limited funding dedicated to the maintenance of bicycle facilities, so the City supports a maintenance effort in proportion to the bicycle use and demand of the facility. With this application of funds, minimum maintenance standards should be provided throughout the City. The City will continue to apply for funding to establish bicycle facilities within Salinas, but must also do the following:

1. Ensure pavement sections are designed in accordance with Caltrans design guidelines to ensure its structural integrity will support loads the pavement will encounter;

2. Install bicycle-safe grates on all catchbasins/inlets adjacent to bikeways (as well as other locations throughout the City);

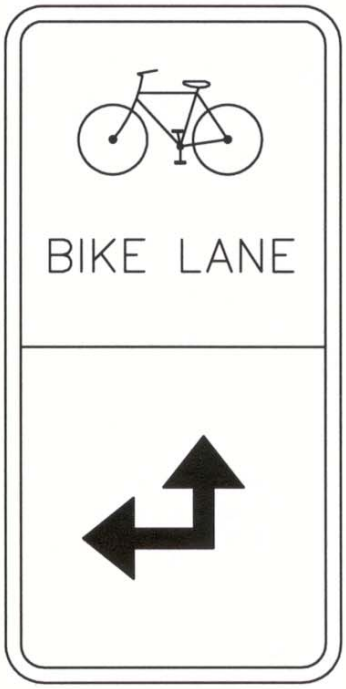
3. Encourage street designs which limit the number of utility covers located within bikeway facilities and provide quality inspection during the construction of said facilities within bikeways to ensure a smooth surface results.

4. Do not oversign or overmark bicycle facilities, which will require more maintenance than is necessary or can be provided by Public Service personnel.

5. Seek to improve design standards and project designs, which will result in long term facilities with limited maintenance.

6. Re-stripe streets for bicycle facilities during City resurfacing projects when those facilities are identified on the adopted Salinas Bikeways Plan. Improvements that require modifications to existing street parking shall be processed through the Salinas Traffic & Transportation Committee, and Council.

7. Include bicycle detector loops at new/retrofitted signalized intersections when a Class I or II bikeways exists on one or more of the streets at the intersection.



BIKE LANE WITH STRAIGHT AND LEFT ARROW

18" x 24"

NOTES

1. DRAWING NOT TO SCALE.

ENGINEERING DIVISION	DEPARTMENT OF PUBLIC WORKS	CITY OF SALINAS
TITLE:	R81 CUSTOM SIGN	
DESIGNED BY KAW/RPH CADD BY KATHY WILSON CHECKED BY A. A. ADLAWAN	DETAIL NO. M	

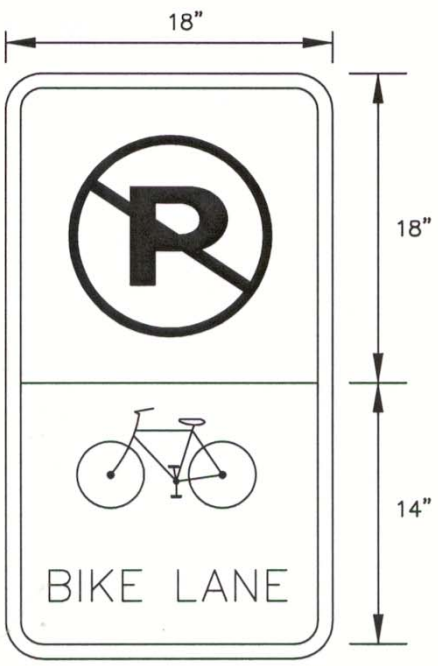
BIKE LANE

24" x 18"

NOTES

1. DRAWING NOT TO SCALE.

ENGINEERING DIVISION	DEPARTMENT OF PUBLIC WORKS	CITY OF SALINAS
TITLE:	**R81 SIGN**	
DESIGNED BY KAW/RPH CADD BY KATHY WILSON CHECKED BY A. A. ADLAWAN	**DETAIL NO. W**	



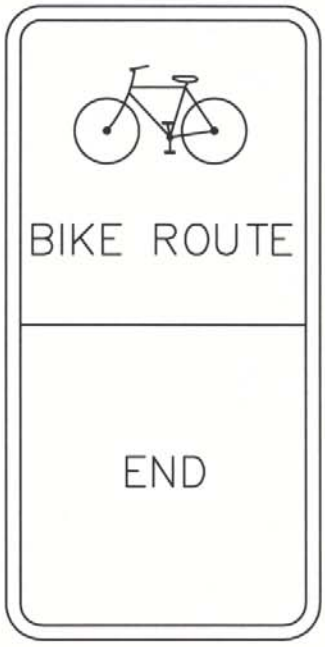
NO PARKING AND BIKE LANE

18" x 32"

NOTES

1. DRAWING NOT TO SCALE.
2. ALL WORDS ON THE SIGN SHALL BE 3" HIGH (TYP.)

DEPARTMENT OF PUBLIC WORKS	
ENGINEERING PROJECT MANAGEMENT DIVISION	CITY OF SALINAS
TITLE:	**R26D AND R81 CUSTOM SIGN**
DESIGNED BY KATHY WILSON CADD BY KATHY WILSON CHECKED BY A. A. ADLAWAN	**DETAIL NO. 23**



BIKE ROUTE WITH "END"

18" x 24"

NOTES

1. DRAWING NOT TO SCALE.

ENGINEERING DIVISION	DEPARTMENT OF PUBLIC WORKS	CITY OF SALINAS
TITLE:	G93 CUSTOM SIGN	
DESIGNED BY KAW/RPH	DETAIL NO. N	
CADD BY KATHY WILSON		
CHECKED BY A. A. ADLAWAN		

APPENDIX H - Bike Rack Standard Detail

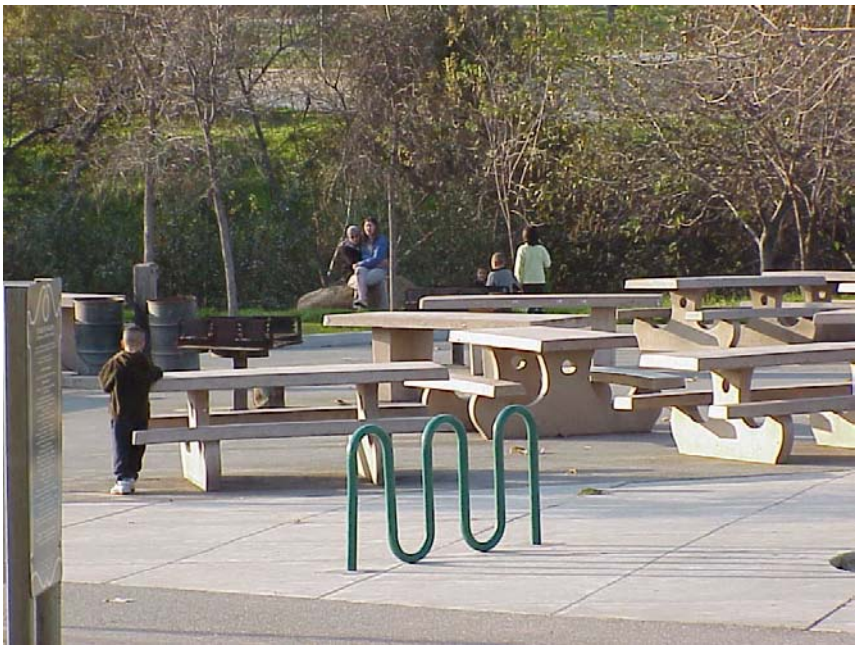
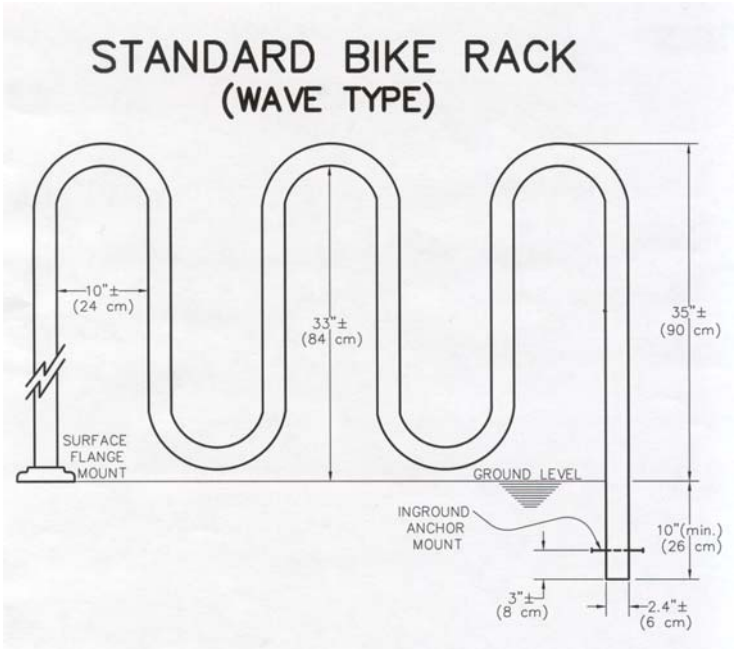


Figure 9



ACRONYM GUIDE

AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
AMBAG	Association of Monterey Bay Area Governments
ANSI	American National Standards Institute
BLA	Bike Lane Account
BLM	Bureau of Land Management
CEQA	Californian Environmental Quality Act
CMA	Congestion Management Agency
CMAQ	Congestion Mitigation and Air Quality Program
CMP	Congestion Management Plan
CTC	California Transportation Commission
DOT	Department of Transportation
EEM	Environmental Enhancement and Mitigation Program
FCR	Flexible Congestion Relief
FHWA	Federal Highway Administration
FTA	Federal Transit Authority
FTIP	Federal Transportation Improvement Program
GBP	General Bikeways Plan
ISTEA	Intermodal Surface Transportation Efficiency Act
MBUAPCD	Monterey Bay Unified Air Pollution Control District
MPO	Metropolitan Planning Organization
MST	Monterey Salinas Transit
NEPA	National Environmental Protection Act
NMTP	Non-Motorized Trails Program
RSTP	Regional Surface Transportation Program
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
SHA	State Highway Account
SOV	Single Occupant Vehicle
STIP	State Transportation Improvement Program
STP	Surface Transportation Program
SWITRS	Statewide Integrated Traffic Records System
TAMC	Transportation Agency for Monterey County
TARS	Traffic Accident Reporting System
TDA	Transportation Development Act
TEA	Transportation Enhancement Activities
TRO	Trip Reduction Ordinance
VPD	Vehicles Per Day
VMT	Vehicle Miles Traveled

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Caltrans Bikeways Design Guidelines and Bikeways Plan Requirements

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

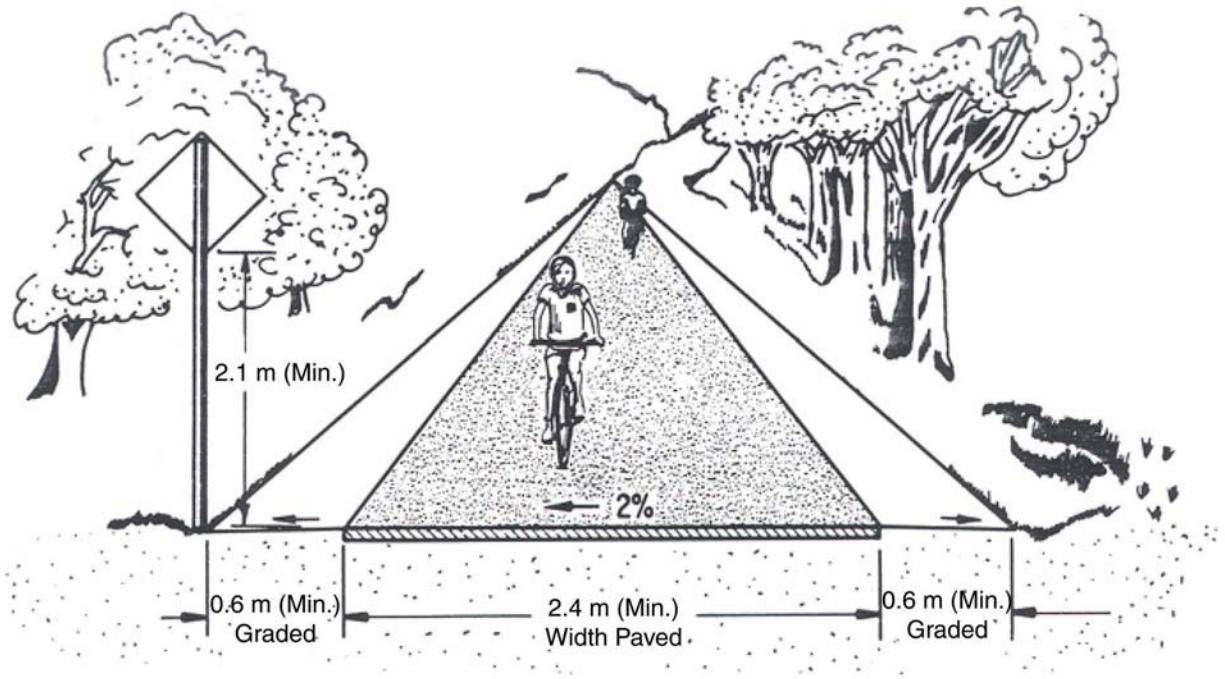
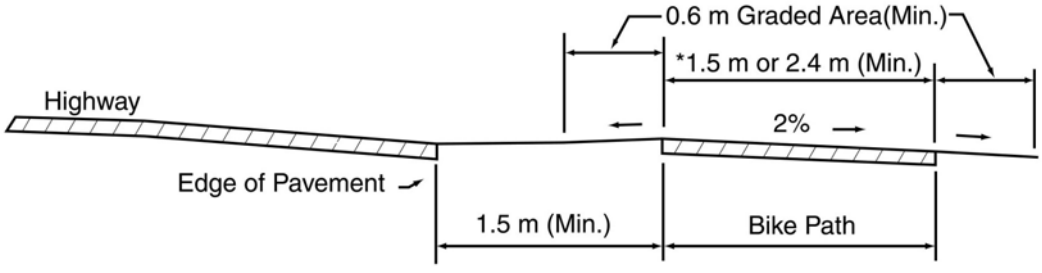


Figure 1003.1A

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),

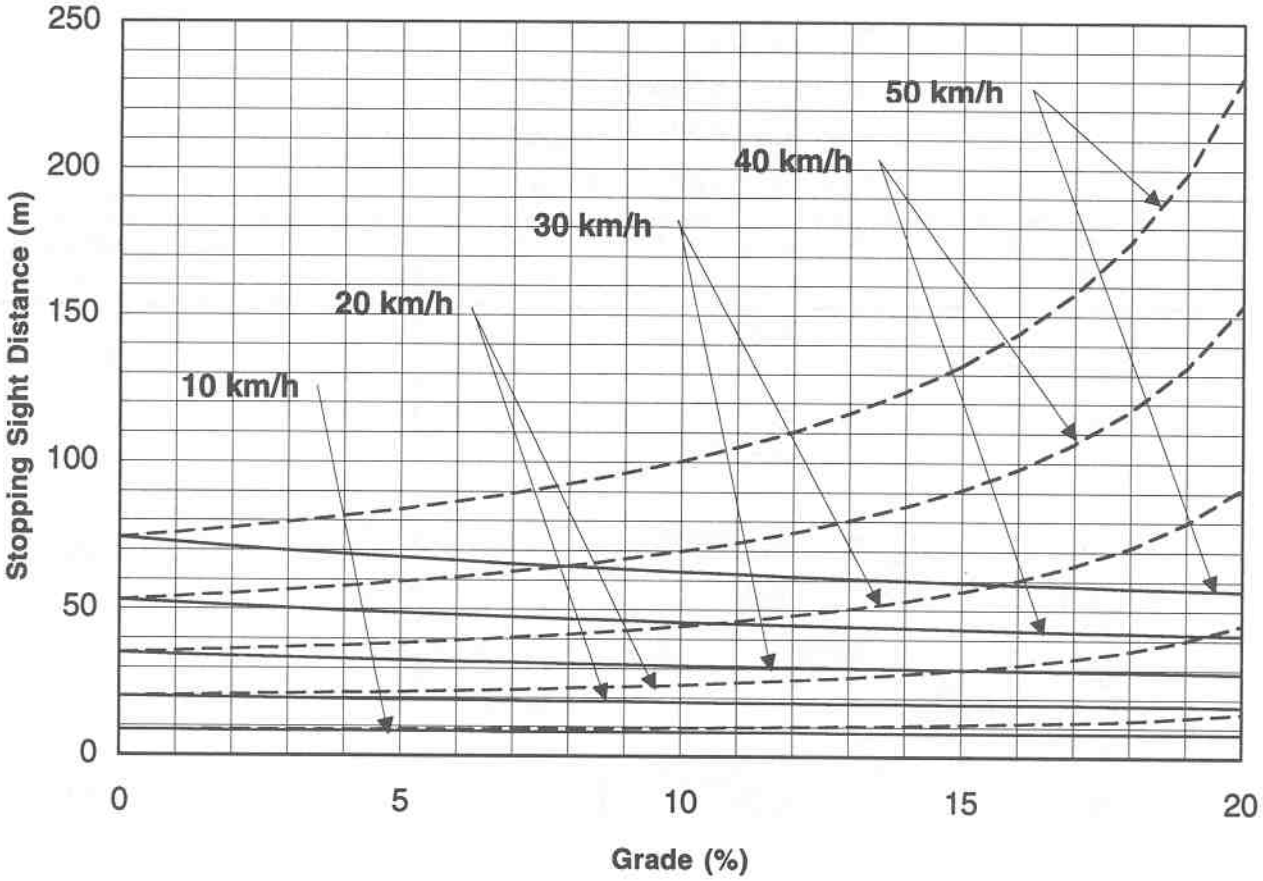
e = Rate of bikeway superelevation, percent

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

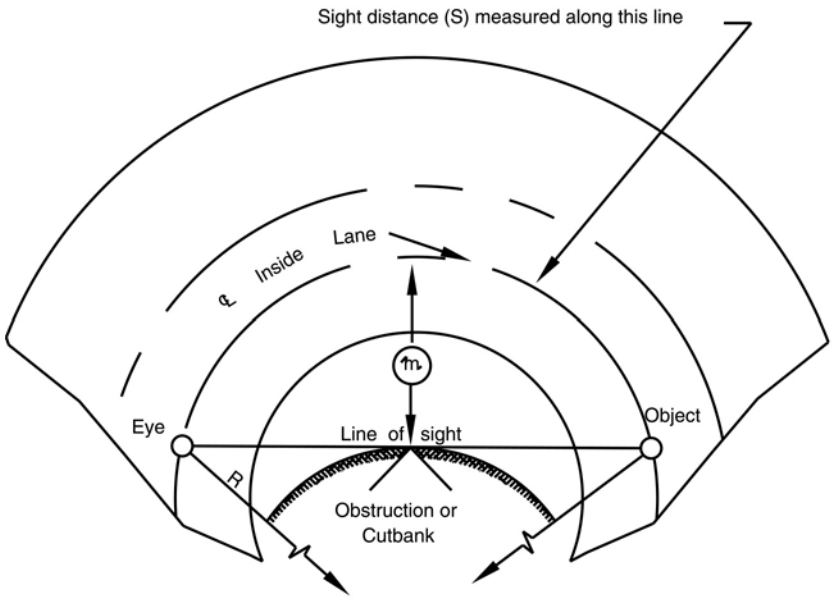
Figure 1003.1E

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 = 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

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

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

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

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

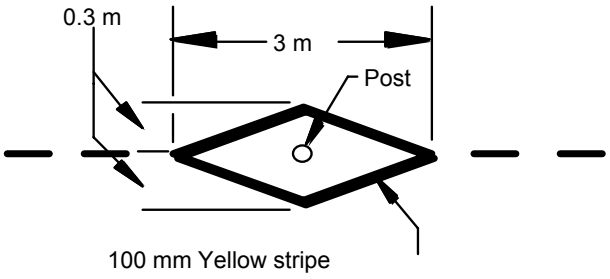
(15) Barrier Posts. It may be necessary to install barrier posts at entrances to bike paths to prevent motor vehicles from entering. When locating such installations, care should be taken to assure that barriers are well marked and visible to bicyclists, day or night (i.e., install reflectors or reflectorized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

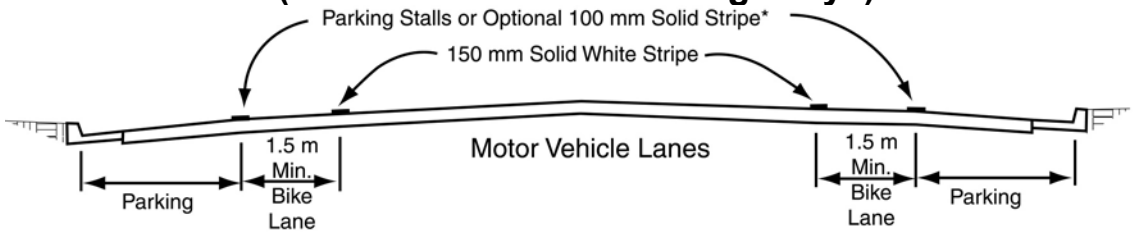
(b) Figure 1003.2A-(2) depicts bike lanes on an urban-type curbed street, where parking is permitted, but without parking stripe or stall marking. Bike lanes are established in conjunction with the parking areas**. As indicated, 3.3 m or 3.6 m (depending on the type of curb) shall be the minimum width 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.

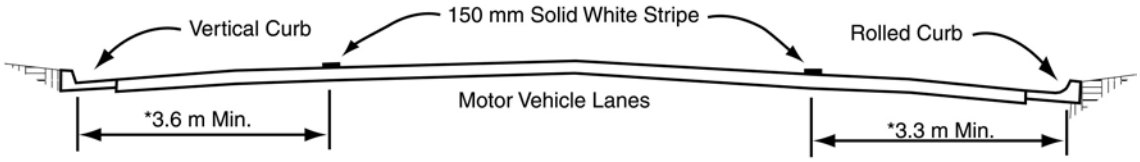
Figure 1003.2A(4) depicts bike lanes on a highway without curbs and gutters. This location is in an undeveloped area where infrequent parking is handled off the pavement. This can be accomplished by supplementing the bike lane signing with R25 (park off pavement) signs, or R26 (no parking) signs. **Minimum 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)



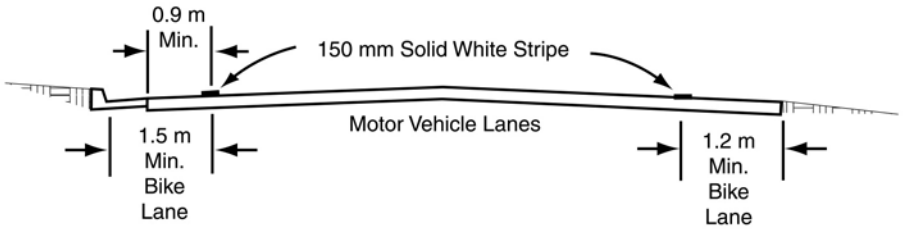
*The optional solid white stripe may be advisable where stalls are unnecessary (because parking is light) but there is concern that motorists may miscontrue the bike lane to be a traffic lane.

(1) STRIPED PARKING

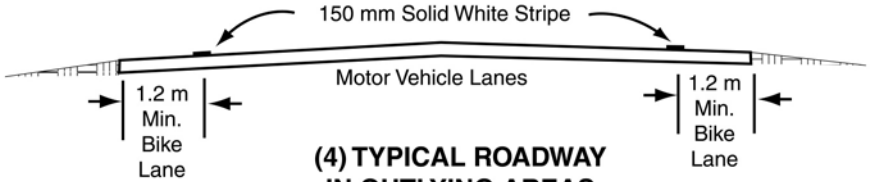


* 3.9 is recommended where there is substantial parking or turnover of parked cars is high (e.g. commerical areas).

(2) PARKING PERMITTED WITHOUT PARKING STRIPE OR STALL



(3) PARKING PROHIBITED



(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

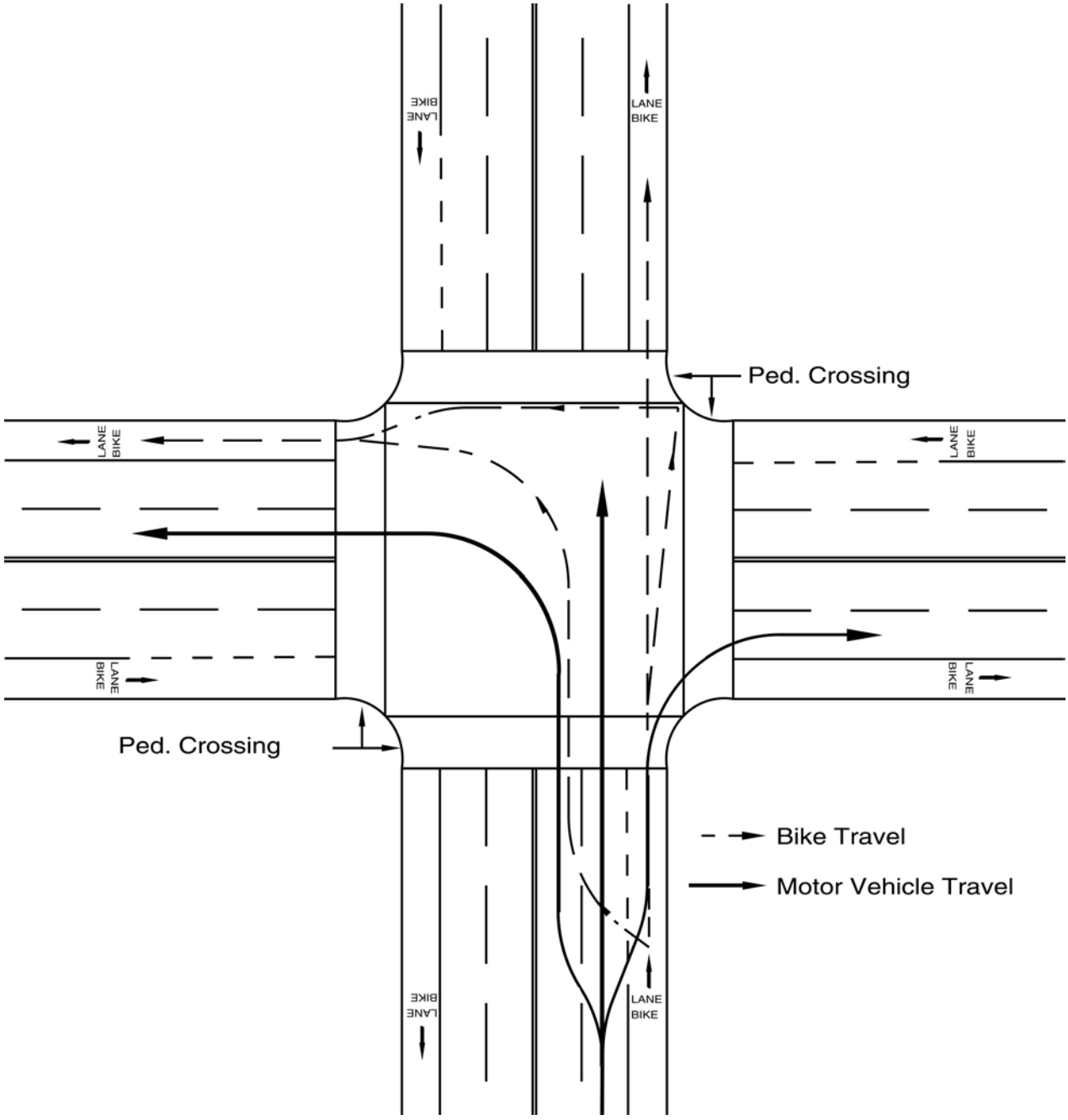


Figure 1003.2C
Bike Lanes Approaching Motorist
Right-turn-only Lane

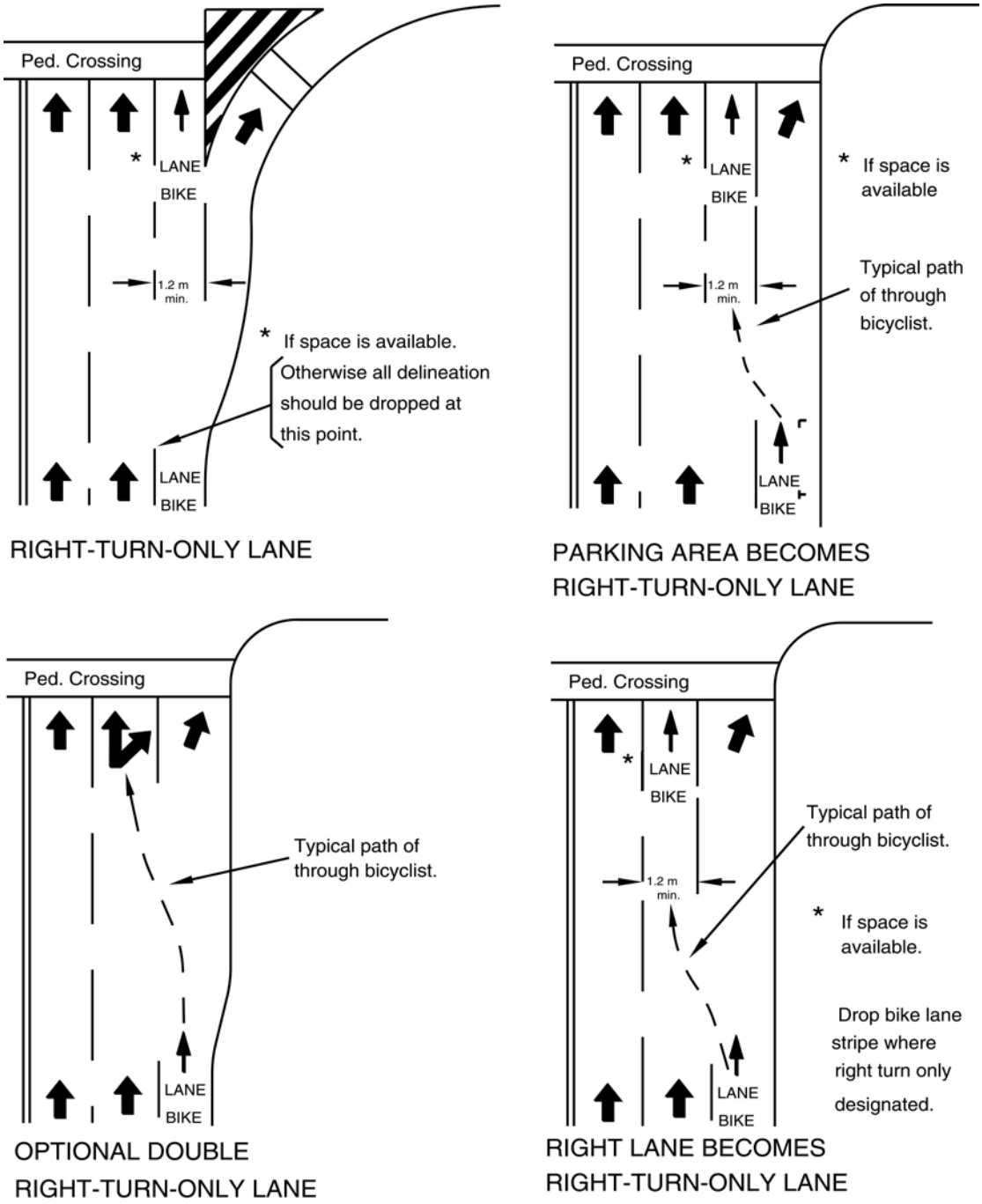


Figure 1003.2D
Bike Loop Detector
Pavement Marking

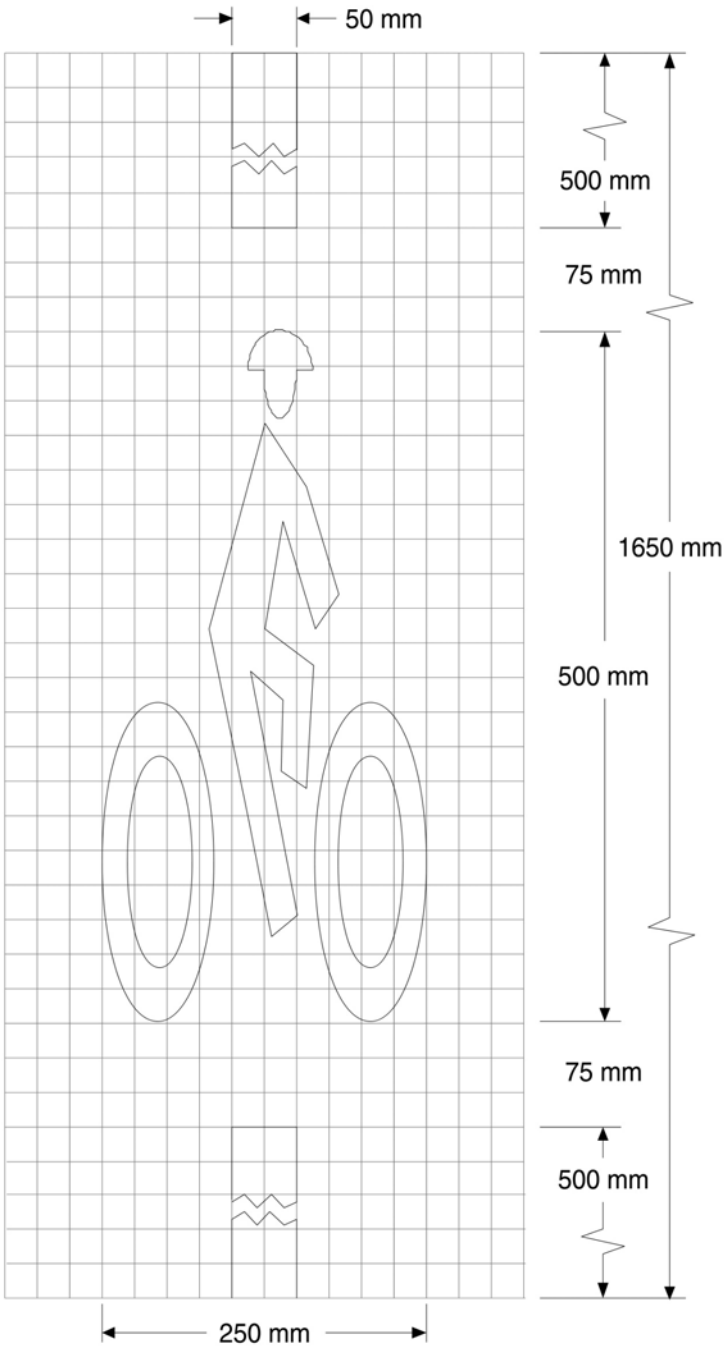
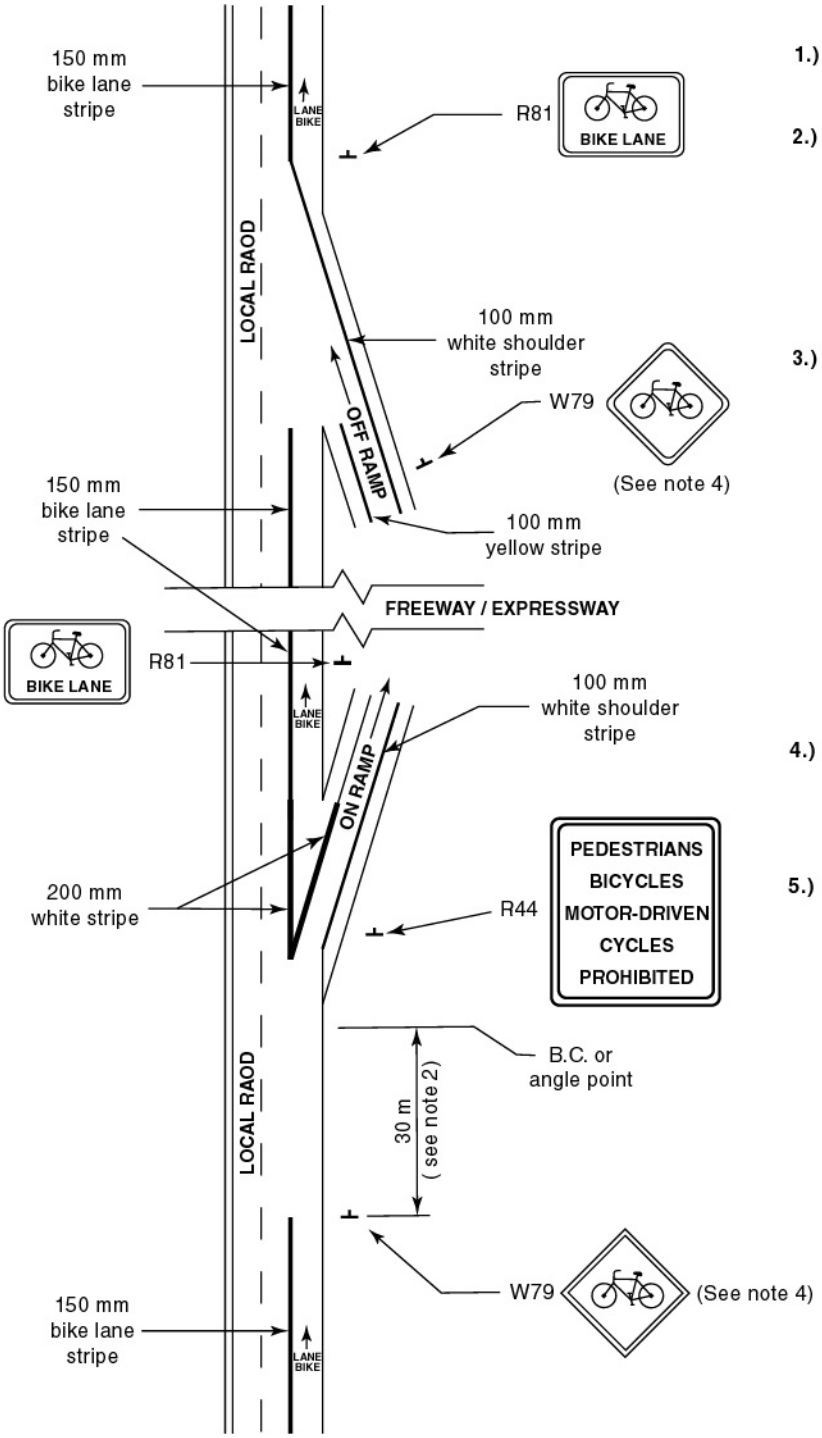


Figure 1003.2E

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 llocal 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

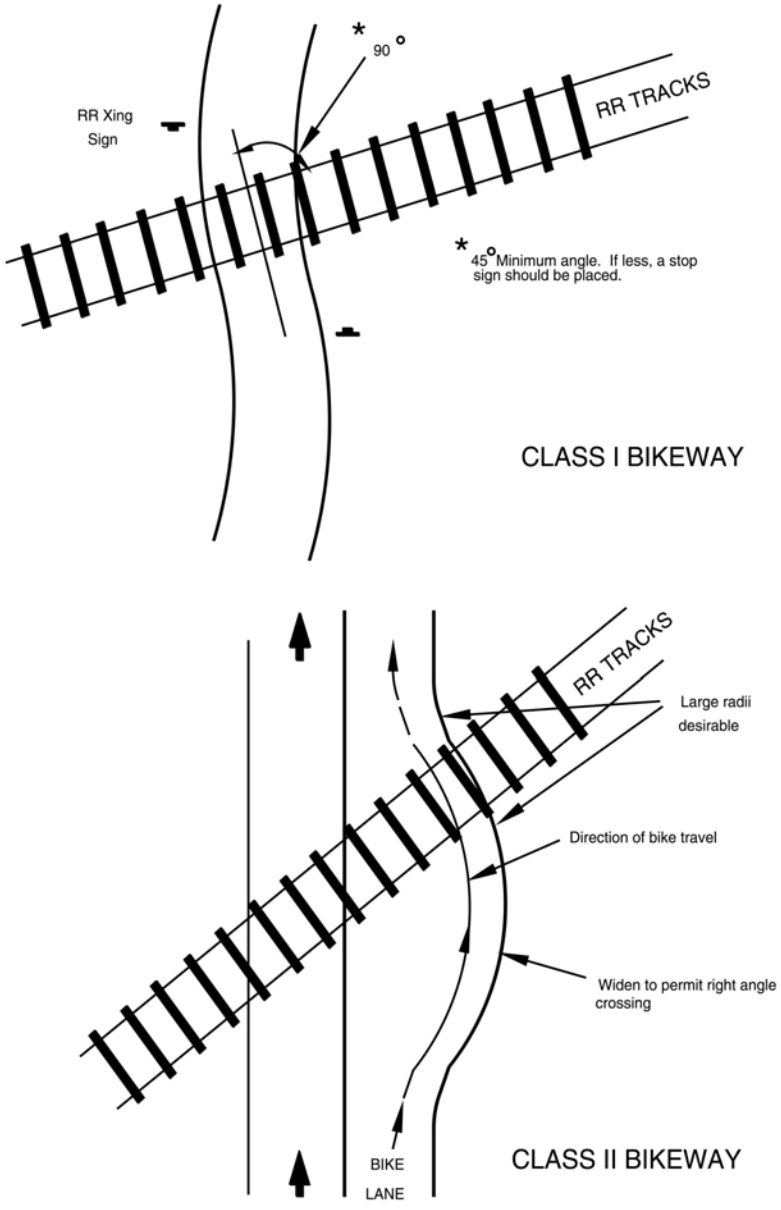
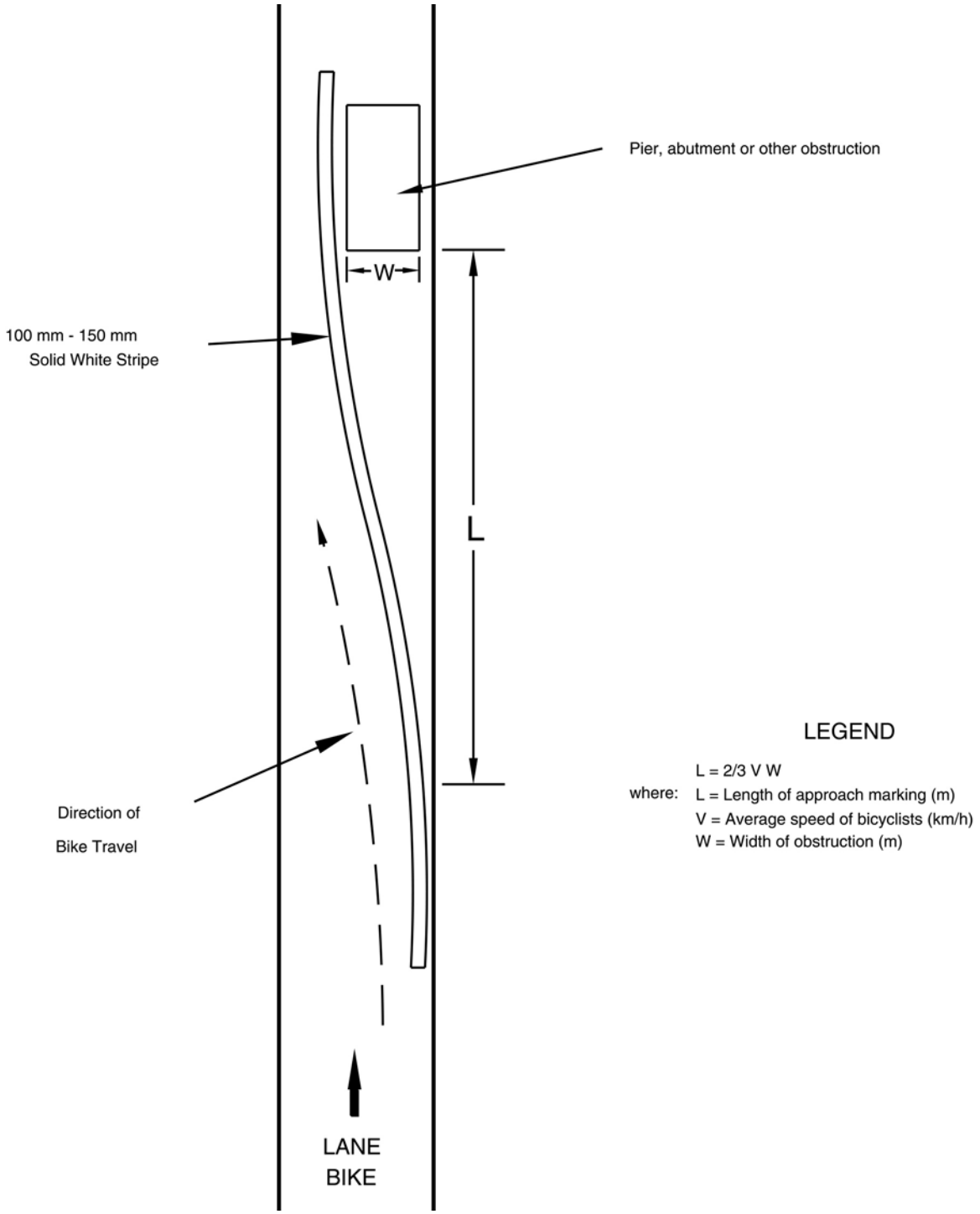


Figure 1003.6B

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.

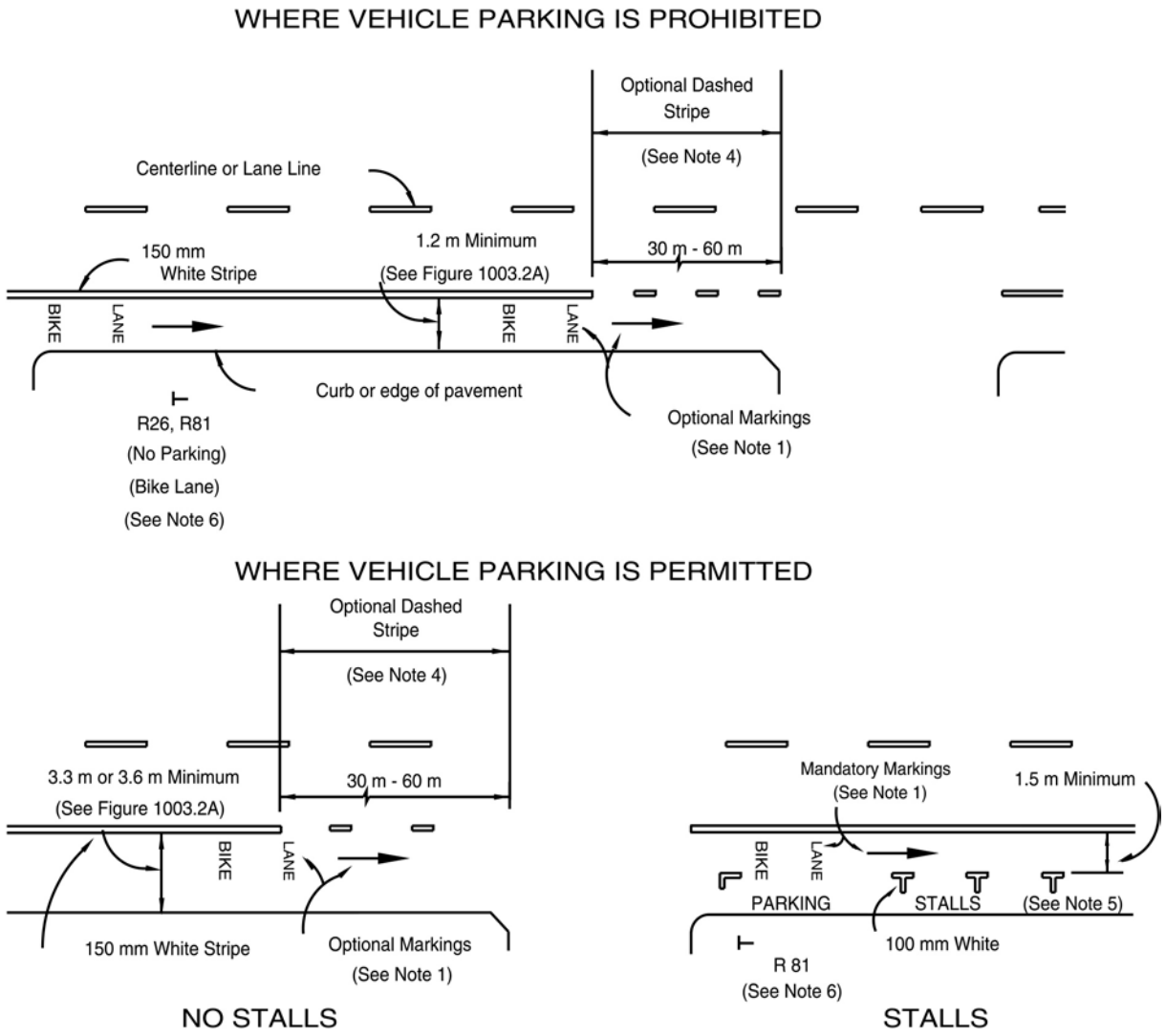
1004.4 Bike Routes (Class III)

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



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.

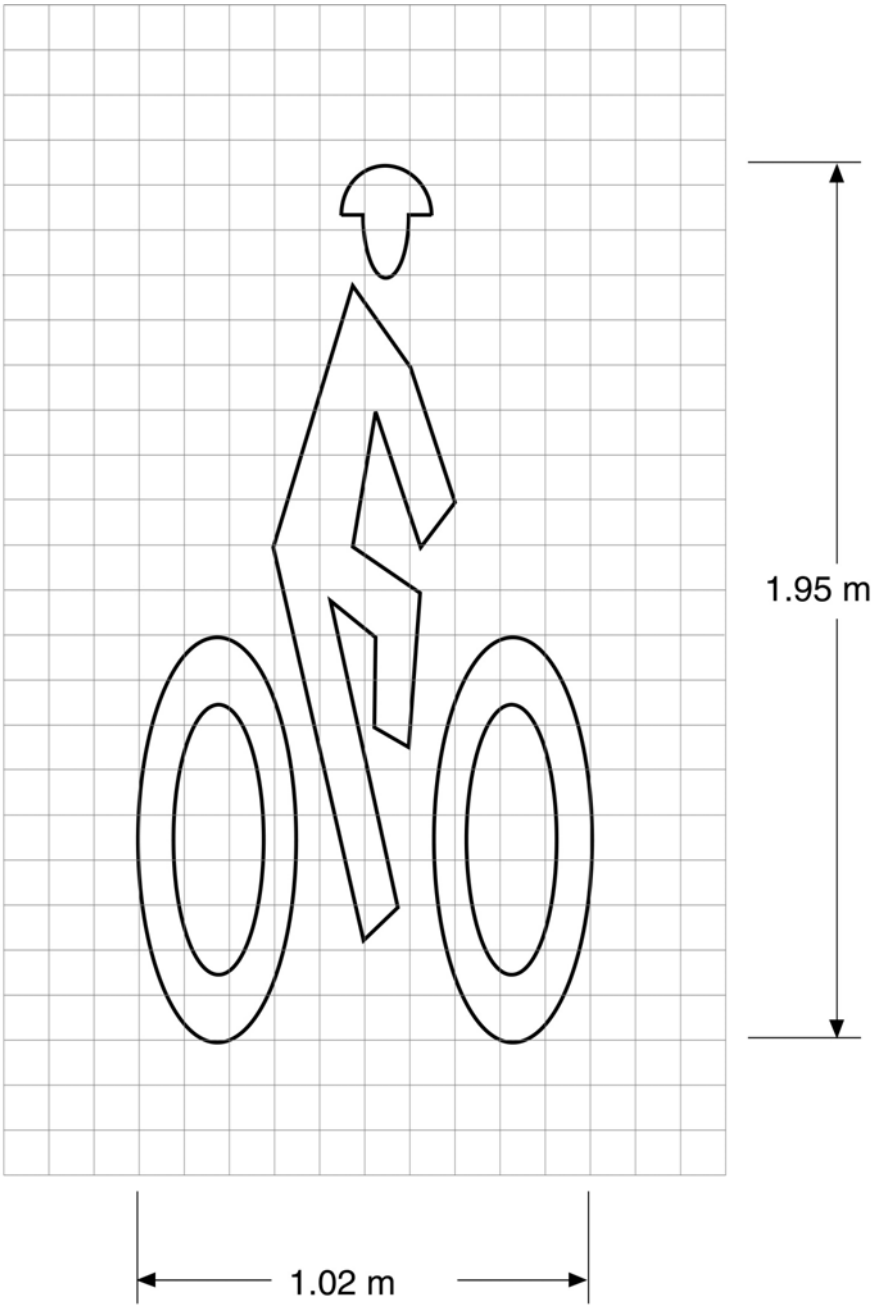
3. The G93 Bike Route sign may be placed intermittently along the bike lane if desired.

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

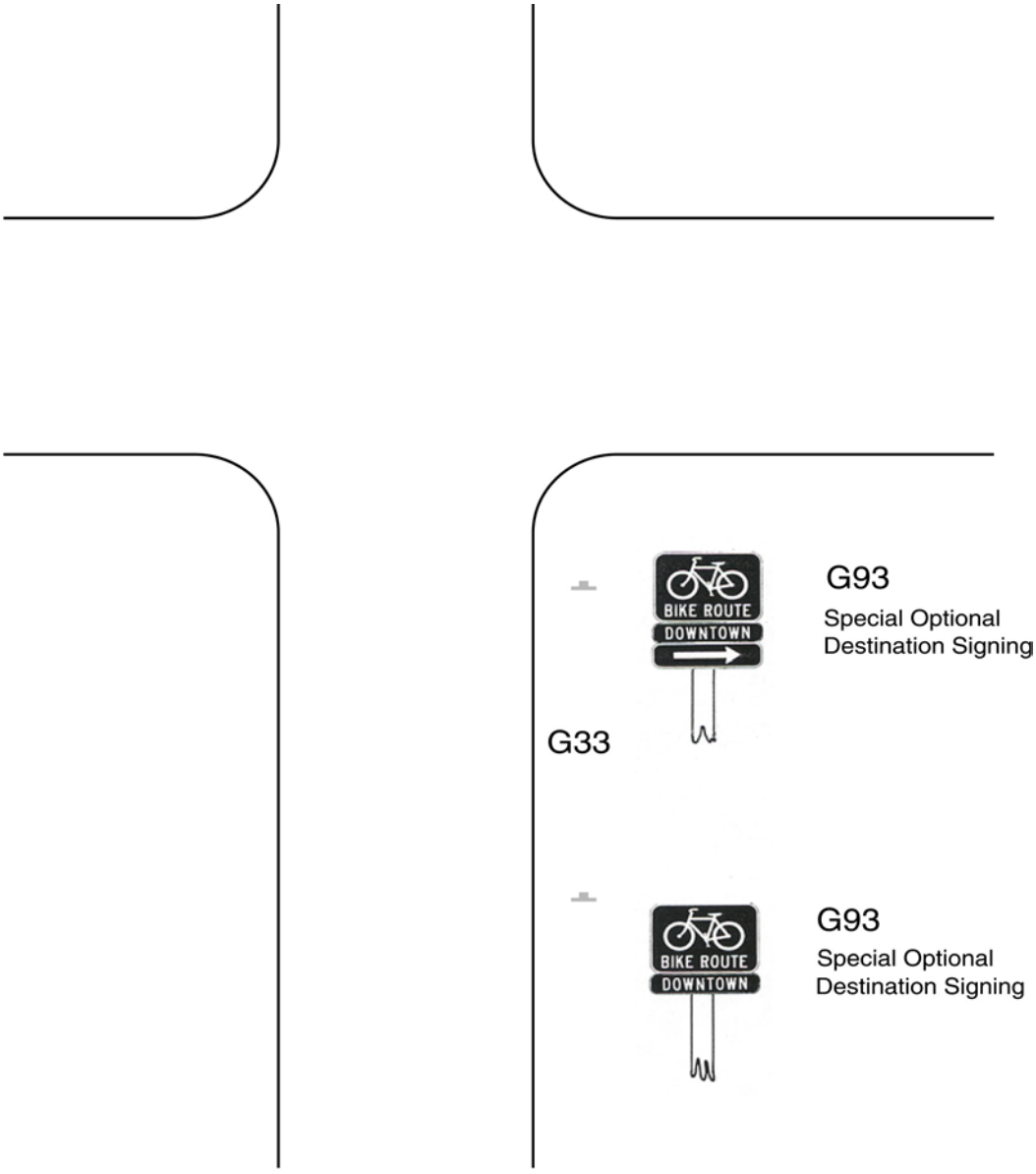


100 mm GRID

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.