

VI-4. BICYCLE INITIATIVE

The Santa Cruz network of bicycle routes and paths contain gaps along key corridors and connections between areas of the City. Closing these gaps and improving the safety, comfort and convenience of bicycling can make bicycle travel an even more attractive mode for citywide transportation.

Santa Cruz's already comprehensive bicycle system is comprised of off-street multi-use paths (Class I), on-street bicycle lanes (Class II), and on-street bicycle routes (Class III). This section describes the MTS vision and implementation strategies for expanding and improving the bicycle system throughout the City.

MTS VISION

"Our well-connected, safe and efficient bicycle network includes the amenities that make bicycling in Santa Cruz practical and fun. A connected infrastructure for bicycle and pedestrian travel will make bicycling and walking not only practical but also safe and a truly desirable choice."

-- The MTS vision

Goals

The MTS goals for Santa Cruz's Bicycle Network are to:

- Complete an interconnected and efficient bicycle network with citywide coverage
- Create a bicycle network that is a safe, practical, fun and a desirable choice
- Support biking as fundamental connection to all travel modes
- Create bicycle connections to recreational areas
- Close all "gaps" in the bicycle network and connect all major destinations and activity centers
- Adopt design standards for the bicycle system to assure a high level of user amenities, safety and quality

A key outcome for the bicycle network is to serve all cyclists, ranging from the active commuter on arterial streets to recreational riders and new riders who seek convenience, safety and comfort. The bicycle network and bicycle amenities form an integral part of the MTS vision to offer greater travel choices for all people who live, work and play in Santa Cruz.



WORKSHOP AND FESTIVAL COMMENTS

The public provided comments on the concept of "Expanding and Improving the Bicycle Network" in the MTS workshops and Mobility Festivals. Below is a summary of the comments in order of the public's priority:

Bike Network Enhancements

- 1. Install bike boulevards, raised bike lanes, bike paths on railroad right of way, and grade-separated bicycle facilities
- 2. Create bike stations, increase and improve secure bicycle parking, increase bus racks, provide showers at places of employment, and install bike detectors at signalized intersections
- 3. Increase roadway maintenance and railroad crossings
- 4. Improve east-west and north-south connections, and connections between Activity Centers
- 5. Enforce traffic laws
- 6. Create more places to ride bicycles, and utilize trails in natural areas
- 7. Reduce the width of streets to calm traffic
- 8. Increase safety for bike lanes on the roadway with vehicular traffic and implement traffic mechanisms that make bike lanes safe (e.g., signals, wider lanes, bike detector sensor at key intersections).
- 9. Sponsor educational events and group rides
- 10. Educate drivers and bicyclists regarding the rules of the road
- 11. Remove unnecessary stop signs
- 12. Provide traffic school for bicyclists
- 13. Develop a bike-sharing program

Missing Bicycle Links

- 1. Beach Street/Boardwalk
- 2. Broadway/Brommer
- 3. Soquel Avenue (Morrissey to Capitola)
- 4. King Street
- 5. Central Area: Walnut, Chestnut, Ocean, SLR Levee, Harvey West
- 6. Bay Street
- 7. Mission Street
- 8. West Side: Spring St. to Coolidge, Western, Almar and Fair



- 9. Seabright/Murray
- 10. Cross-town rail line
- 11. East Side: Frederick, Fairmont/B-40
- 12. East Cliff
- 13. West Cliff
- 14. Coastal multi-use path
- 15. Laurel Street
- 16. Westside/UCSC to downtown

Bicycling Incentives

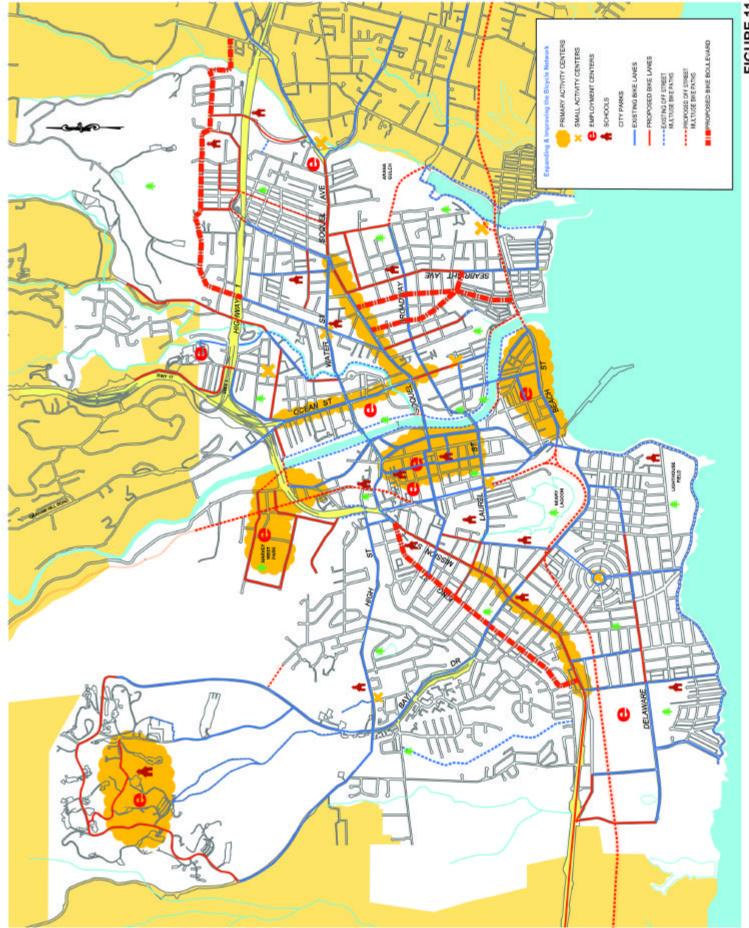
- 1. Safe bicycle lanes
- 2. Adequate facilities including bike parking, bike stations and well-maintained lanes
- 3. Traffic calming
- 4. Free-bicycle and/or electric bicycle program citywide
- 5. Connected paths and cross-town access
- 6. Convenient facilities
- 7. Bike only areas
- 8. Increase cost of gasoline

ELEMENTS OF A COMPREHENSIVE CITYWIDE BICYCLE SYSTEM

The bicycle transportation system in Santa Cruz will be comprised of a combination of physical network improvements, amenities for bicyclists to improve comfort and safety, and programs to promote bicycling as a viable mode of travel, and increase public awareness. Figure 11 presents the bicycle network, key elements and gaps. The MTS concepts for the bicycle system include:

Bicycle Lanes

Bicycle lanes provide bicyclists with an exclusive right of way on streets. Bicycle lanes create awareness that the street is shared by other modes of travel, and provide bicyclists with a clear route. Bicycle lanes reduce vehicular conflicts, particularly at intersections. Just as roads provide drivers with local, cross-town, and regional mobility, bicycle lanes provide the same function for bicyclists. A well-connected bicycle system is critical in meeting the MTS goals if it is to become a viable travel option for work, shopping, and school related trips. Santa Cruz has some noticeable gaps in its bicycle system, and providing an interconnected system of lanes is the single-most effective measure in encouraging bicycle travel. Implementation of bike lanes meets all of the MTS goals for bicycle travel.



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A lane for the exclusive or preferential use of bicycles in the roadway is the goal for all major roadways. These lanes are separated from roadway lanes with striping and marked as bicycle lanes. The recommended width for bicycle lanes is 6' width when possible. Streets with designated bike lanes can include amenities such as bicycle detectors at signalized intersections, adequate clearance intervals at signalized intersections, consideration of different pavement color, and properly designed bike lane channelization at intersections.

Off Street Multi-Use Bike Paths

Off street multi-use bike paths are separate from a roadway. They can be designed to accommodate bicyclists and pedestrians. Multi-use paths provide safe facilities for those bicyclists that do not feel comfortable riding alongside traffic. Paths allow people to enjoy Santa Cruz's scenic and recreational areas, as well as enjoy quiet routes for everyday work, shopping, and school travel.

An off-street path system, well connected to the on-street system, can significantly increase the use of bicycle travel. Off-street paths particularly encourage inexperienced bicyclists who would normally not ride on busy streets. Implementation of off-street multi-use paths specifically meets the MTS goals of creating a bicycle network that is a safe, practical, fun and desirable choice, as well as creating bicycle connections to recreational areas.

Bike Boulevards with Neighborhood and Emergency Access

Bike Boulevards are designated collector and local streets that make bicycle travel a priority through special signage, maintenance priorities, and intersection control. Bike boulevards allow bicyclists, emergency vehicles, and transit to move through the corridor with minimal delay, while discouraging through traffic. There are limited stops on a bicycle boulevard. The boulevard can also include diverters that prevent through car traffic and bicycle-activated signals at major intersections.

As with off-street paths, bike boulevards serve as an alternative bicycling route for people who are uncomfortable riding on busy, high-speed streets. Bike boulevards encourage more people and families to ride bicycles for short local trips and for recreational purposes. Implementation of bike boulevards meets the MTS goal of creating a bicycle network that is a safe, practical, fun and a desirable choice.

Improved Transit Access

Adding features that strengthen the link between the transit system and the bicycle network include:

- Increasing bike carrying capacity on buses, and
- Increasing covered secure bike parking at major transit stops and transit centers.



 Expanding the bike shuttle program including consideration of modifying older buses to serve as bicycle shuttle vehicles.

Bicycling becomes significantly more practical and viable for longer work, shopping, and social/personal travel when combined with transit. Increased capacity for bicycles on buses encourages people to use transit, while secure bicycle parking increases the comfort of leaving property at transit stops for long periods of time. Shuttle services for bicyclists between major activity centers such as between Downtown and the University further encourages bicycling.

Implementation of measures which improve transit access meets the MTS goals of supporting biking as fundamental connection to all travel modes; closing all "gaps" in the bicycle network and connecting all major destinations and activity centers; and adopting design standards for the bicycle system to assure a high level of user amenities, safety and quality.

Bicycle Facility Design and Maintenance

Guidelines for the design and maintenance of the bikeway system include intersection design, addition of intersection bicycle phases at signalized intersections (especially for east to west connections), and movement of limit lines back for buses and bicycles. Bicycle parking guidelines including locker design, location guidelines, and transit connectivity. Guidelines for maintenance of bicycle facilities emphasize safe and obstruction and debris-free facilities, especially for pavement edge conditions.

Well-maintained bicycle facilities are essential for the safety and efficiency of bicycling, as well as an important way of encouraging bicycling. Poorly maintained facilities not only discourage bicycling, but also serve as a message to bicyclists that bicycling is a lower transportation priority. Implementation of good facility design and maintenance standards meets the MTS goals of adopting design standards for the bicycle system to assure a high level of user amenities, safety and quality.

Bicycle Education and Promotion

A critical element of the bicycle system is the identification, design, and implementation of bicycle education and promotion programs for safe bicycle riding in the City. This concept is already being implemented by other agencies with the cooperation of the City. The objective of this concept is encouraging safe bicycling travel. Improved signage and mapping is one of the goals of this element. Implementation of bicycling education and promotion meets all of the MTS goals for bicycling.



EXISTING CITY POLICIES

The City of Santa Cruz General Plan adopted in 1994 contains goals and policies related to bicycle transportation. These goals, policies, and programs remain valid and support the MTS goals described above. The primary bicycle related goal in the General Plan is to:

"Develop a safe, convenient and effective bikeway system that promotes bicycle travel as a viable transportation mode and connects work, shopping, schools, residential and recreational areas."

In addition the City has an adopted a Bicycle Transportation Plan in conformance with the California Streets and Highways Code. This plan is updated regularly and is scheduled to be updated in 2004.

DESIGN GUIDELINES

The following design guidelines are to ensure that future investment in the bicycle network and bicycle amenities will create a safe, comfortable and convenient bicycling system for people of all ages and travel needs consistent with the MTS goals.

Class II On-Street Bike Lanes

Design of Class II on-street bike lanes are to conform to Caltrans and AASHTO standards and guidelines. Bike lanes are intended to improve conditions for bicyclists, delineate street right-of-way for bicyclists, and provide both motorists and bicyclists predictable guidance at points of conflict. Bike lanes are to be provided where insufficient width exists for safe bicycling on major corridors throughout the city, and can be implemented with re-allocation of existing traffic lanes and on-street parking.

Bicycle Boulevards

Bicycle Boulevards are streets that provide comfortable travel for bicyclists. They are intended to be low volume, low speed routes as an alternative, but not as a replacement to bicycle travel on major streets. Bicycle Boulevards have the following characteristics:

- Free-flow travel for bikes: traffic control favors the direction of travel on the bicycle boulevard and gives right-of-way to the bicycle boulevard at intersections wherever possible
- Low traffic volumes (or installing bike lanes where traffic volumes are medium);
- Discouragement of non-local motor vehicle traffic: traffic calming can be provided to slow speeds and reduce non-local traffic but must be designed to accommodate bicyclists



- Traffic control to help bicycles cross major streets (arterials) may include bicycle
 detection at signalized intersections, or special channelization that expedites
 bicycle travel and diverts vehicle travel;
- A distinctive look and/or ambiance that: 1) helps cyclist become aware of the
 existence of the bike boulevard, and 2) alerts motorists that the roadway is a
 priority route for bicyclists: this can be accomplished with special signs and/or
 pavement markings.

Bicycle Boulevards should be implemented incrementally on streets that are local streets or low-volume collector streets; that have little commercial frontage; are within 1/4 mile of a major street or a high-traffic collector or arterial street; and are a continuous connection between existing bicycle corridors. Consideration should be given to maintaining emergency and peak traffic flows.

Off-Street Paths

Design of Class I off-street bikeways or multi-use paths are to conform to Caltrans or AASHTO design standards and guidelines. Bikeways and multi-use paths are intended to provide exclusive right-of-way for non-motorized forms of travel. Off-street facilities minimize conflicts with vehicles, and generally provide a safer environment.

Intersections

While each design situation varies, the following design guidelines should generally apply to Class II bike lanes at intersections.

- Bike lanes should be striped up to the limit line (stop bar) of controlled intersections and up to the curb return at uncontrolled intersections. Approaching an intersection without an exclusive right turn lane, the bicycle lane stripe should be dashed.
- At intersections with an exclusive right-turn lane on an approach, the bicycle lane should be striped between the right-turn lane and the through lane. The striping should be dropped or dashed before the right-turn lane begins to allow for turning vehicles and bicycles to weave.
- Bicycle detectors should be installed in the pavement at actuated signalized intersections within the bike lane, or within vehicle travel lanes if bike movements use the travel lanes. Pavement markings should identify the location of the bicycle detector. Alternatively, video detection may be used. Where bicycle detectors are not feasible, bicyclist accessible push buttons should be used.
- At actuated signalized intersections without bike lanes, the detectors located in the right-most lane should be enhanced to detect bicycles, along with pavement marking indicating bicycle detection.



- At signalized intersections, signal timing should be adjusted to provide a
 minimum clearance interval for bicycles (time enough for a bicyclist to clear the
 intersection before light turns red). Clearance intervals should be calculated using
 the formulae presented in AASHTO's Guide for the Development of Bicycle
 Facilities.
- At intersections with high left turns by bicyclists, exclusive bicycle left-turn lanes should be provided adjacent to, and as long as, the left-turn lane for vehicles.
 The through bicycle lane stripe should be dashed prior to the beginning of the left-turn lane for bicycles.
- At intersection approaches crossing streets with bicycle lanes, use standard "Bicycle Symbol Sign" (W79) to indicate that a designated bicycle facility is crossing the roadway.
- At signalized intersections give priorities to bicycles

IMPLEMENTATION

Short Term Implementation Actions

Short-term implementation actions are strategies, programs, and capital projects that Santa Cruz can implement within the next five years. Many of these short-term actions were identified as priorities in the MTS workshops and mobility festivals.

Short Term Implementation Actions

Update and adopt Bicycle Transportation Plan to comply with California Streets and Highways Code and to incorporate the bicycle initiative identified in the Master Transportation Study.

Increase enforcement of traffic laws and bicycle rights of way

Identify and repair bicycle facility problems

Improve citywide bicycle route signing

Consider modifying older buses to serve as bicycle shuttle vehicles between downtown and UCSC

Increase bike capacity on buses on longer, regional bus routes

Develop and implement campaigns to educate motorists and bicyclists on Santa Cruz's bicycle system, safety, traffic laws, and courtesy

Develop and offer a city sponsored traffic school for bicyclists

Add secure bicycle parking facilities at activity centers, major transit stops, and the transit center

Provide bicycle lanes on Soquel Avenue from Seabright Avenue to Capitola Road

Maintain and enhance access points to the San Lorenzo Riverway

Implement the Broadway-Brommer Connection

Provide bike boulevard on Cayuga Street from Soquel Avenue to Hiawatha Street

Install bicycle detectors at signalized intersections on streets with Class II bike lanes

Prepare a feasibility study to improve the bicycle connection on East Cliff Drive from Jesse Street to the levee path at Hiawatha Street including investigation of constructing a separated bike path along the levee embankment



Long Term Implementation Actions

Long-term implementation actions are primarily capital projects that Santa Cruz can implement in 5-20 years, and are dependent on available funding. These projects include the facilities identified throughout the MTS process and facilities identified in Santa Cruz's Bicycle Transportation Plan. Some of the long term actions may be implemented incrementally. The ultimate goal of the bicycle boulevard may be achieved through the initial installation of bike lanes. Or the long term goal of bike lanes may be proceeded by signage indicating "Bikes May Use Full Lane". With implementation of these projects, all of the gaps in the City's bicycle transportation system will be closed. Each project is prioritized according to its primary function:

Priority A: Connects the City's major activity centers and employment centers promoting bicycle travel for commuting and other types of trips normally taken by automobile. Safety projects are also "A" priorities.

Priority B: Primarily connects the City's schools and parks and neighborhoods promoting safe routes to school and livable streets within neighborhoods. Longer distance community connections are also included.

Priority C: Primarily internal neighborhood connections and recreational routes.



Long Term Implementation Actions

Function	Capital Project	Location
Α	Bicycle Boulevard	King Street
Α	Class I Bike Path	Encinal to San Lorenzo River Path
Α	Class I Bike Path	Spring Street (end) to Coolidge Drive
Α	Class I Bike Path	San Lorenzo River Path (Soquel to San Lorenzo Park)
Α	Class I Bike Path	San Lorenzo River Path (Riverside to Spruce)
Α	Class I Bike Path	River Street to San Lorenzo River Path (incl. bridge)
Α	Class I Bike Path	Widen the San Lorenzo River trestle bridge
Α	Class II Bike Lanes	West Cliff one-way with contraflow/bike lanes
Α	Class II Bike Lanes	Laurel Street (King to California)
Α	Class II Bike Lanes	Encinal, Dubois, Harvey West, Coral
Α	Class II Bike Lanes	River Street (City limits to Highway 1)
Α	Class II Bike Lanes	East Cliff Drive (Ocean View Park to Murray)
Α	Class II Bike Lanes	La Fonda Ave. (Soquel to Prospect Heights)
Α	Ped/Bike Traffic Signal	Provide a pedestrian and bicycle activated signalized crossing from Hiawatha Street to the levee path
В	Bicycle Boulevard	Cayuga (Soquel to Murray)
В	Bicycle Boulevard	Modify exist. Speed bumps on Pine Street make bike accessible
В	Bicycle Boulevard	Laveaga, Prospect Heights
В	Bicycle Boulevard	Pine (Soquel to Seabright)
В	Bicycle Boulevard	Brookwood Drive
В	Class I Bike Path	UPRR Railroad and Big Trees and Pacific Right of Way
В	Class II Bike Lane Improvements	UCSC Campus (Heller, McLaughlin Dr. and Steinhart Way)
В	Class II Bike Lanes	California Street (Laurel to Walnut)
В	Class II Bike Lanes	Ocean Street (Soquel to Barson)
В	Class II Bike Lanes	Branciforte Drive (City limits to Market, include under crossing of Highway 1)
В	Class II Bike Lanes	Goss, Gilbert, Rooney (Branciforte to Morrissey)
В	Class II Bike Lanes	Morrissey (Fairmount to Prospect)
В	Class II Bike Lanes	Gault Street (Seabright to Frederick)
С	Class II Bike Lanes	Shaffer Road (Mission to Delaware)
С	Bicycle Boulevard	Darwin St. (Gault to Hall)
С	Class I Bike Path	Santa Cruz Harbor
С	Class I Bike Path	Frederick Street Park to Santa Cruz Harbor
С	Class II Bike Lanes	Seabright Ave. (Soquel to Pine)
С	Class II Bike Lanes	Swanton Blvd. (Delaware to West Cliff Drive)
С	Class II Bike Lanes	Evergreen Street
С	Class II Bike Lanes	Felker Street (Riverway to Ocean Street Ext.)



_	С	Class II Bike Lanes	Grant Street (Plymouth to Market)
_	С	Class II Bike Lanes	Market Street (Water to Washburn)
	С	Class II Bike Lanes	Emeline Ave (City limits to Plymouth, incl. under crossing of Highway 1)
	С	Class II Bike Lanes	Frederick (Broadway to Soquel)

Key to functions:

A	Connects major activity centers and employment centers	
В	Connects schools and parks	
С	Internal neighborhood connections and recreational connections	