

**Santa Cruz County Bicycle Route Signage Program
2015 IMPLEMENTATION PLAN**



Prepared by
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Santa Cruz County Bicycle Route Signage Program 2015 Implementation Plan

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Chapter 1- Project Description

In an effort to further increase bike ridership and improve safety, the Santa Cruz County Regional Transportation Commission (RTC) developed the Santa Cruz County Bicycle Route Signage Program (SCC Bicycle Route Signage Program). The SCC Bicycle Route Signage Program directs bicyclists to preferred bicycle routes. Preferred bicycle routes link common origins and destinations throughout Santa Cruz County.

The Draft SCC Bicycle Route Signage Program - 2015 Implementation Plan (2015 Implementation Plan) builds on previous efforts, sets up the methodology for selecting routes, lists Phase I bicycle routes, defines standard signs, establishes sign design guidelines, and describes scenarios for project delivery. The 2015 Implementation Plan will be reviewed and revised as necessary.

The RTC is committed to promoting sustainable transportation options, including bicycle use. Commuters, recreational cyclists, families with children, and visitors, ranging from experienced to new bicycle riders, will benefit from a SCC Bicycle Route Signage Program. Because the RTC is a Regional Transportation Planning Agency, not a public works department with construction authority over streets and roads, coordinating with local jurisdictions to implement such a program is vital to its success.

Background

The need for a bicycle route sign system was identified by community members, transportation professionals and elected officials, in order to increase the number of bicyclists, as well as improve bicyclists' safety. The project gained significant momentum after two bicyclist fatalities on Mission Street (State Highway 1). Other areas across the United States with significant bicycle ridership have implemented similar systems, including Santa Barbara, Berkeley, and Oakland in California; Portland, Oregon; Seattle, Washington; and Chicago, Illinois, among others. The Transportation Agency for Monterey County is in the early stages of developing a way finding plan, including bike route signing.

In June 2009, the RTC programmed \$100,000 in Regional Surface Transportation Program funding for the SCC Bicycle Route Signage Program. In December 2013, RTC staff presented the Preliminary Draft SCC Bicycle Route Signage Program Implementation Plan. Development of the SCC Bicycle Route Signage Program Implementation Plan involved extensive research, review of similar implementation plans, and discussions with local jurisdictions. Earlier stages in the development of the SCC Bicycle Route Signage Program Implementation Plan were used to: establish goals and objectives; identify the target audience; recommend standard signs and outline potential strategies for selecting routes; sign placement; public involvement; and program administration.

The SCC Bicycle Route Signage Program is expected to be implemented over time as resources become available. The 2015 Implementation Plan introduces the first group of routes proposed for implementation consistent with the 2015 Implementation Plan methodology. The bicycle routes identified in the 2015 Implementation Plan are the first step in developing the community's bicycle route signage program and are referred to as "phase 1 bicycle routes". A phased approach introduces bicycle signage to the community at a scale that fits within available planning funds and allows for revisions to the system to

adapt to the community's level of interest. Additional signed bicycle routes could be identified consistent with available resources and funding opportunities.

Goals and Objectives

A bicycle route signage program in Santa Cruz County will assist in directing cyclists to preferred bicycle routes. The goals of the program are to improve safety and increase bicycling in Santa Cruz County by way of reducing conflicts between bicycles and motor vehicles; educating motorists and bicyclists about shared roadways; and increasing awareness of bicycling as a viable transportation option. Increasing the bicycling mode share, a goal of the Regional Transportation Plan, will serve to maximize use of the existing transportation network, promote non-emission generating trips by converting short distance automobile trips to bicycling trips, and improve community members' health and well-being.

To achieve program goals, the bicycle route signage program is designed to:

- 1) Identify and guide cyclists onto streets better suited for bicycle travel to common destinations;
- 2) Promote bicycle use by making the public more aware of the bicycle as a viable transportation mode;
- 3) Remind motorists that they are sharing the road with cyclists who are traveling on bicycle routes;
- 4) Attract new bicycle riders, who may be intimidated by traffic and other safety considerations or constraints, to routes with lower traffic stress; and,
- 5) Make it easier for bicyclists to find common destinations while being informed about trip length.

The 2015 Implementation Plan will assist transportation planners, local jurisdictions and interested organizations in:

- 1) Providing a framework for logical and useful routes for bicyclists in the county;
- 2) Selecting bike routes that provide convenient and comfortable access to common destinations such as: parks, beaches, shopping areas, schools, work, and scenic areas;
- 3) Selecting routes well-suited to a broad range of riders such as: commuters, tourists, families, fitness riders, and recreational riders;
- 4) Eliminating and consolidating unnecessary existing bikeway signs to "de-clutter" area streets and bikeways; and,
- 5) Developing a bike route signage program that can be implemented in phases as funding permits, and that provides clear directions to signing future bikeways in the same manner.

Target Audience

Community

While the main focus of the program are bicyclists and community members interested in riding a bicycle, the population to be served includes all Santa Cruz County residents and visitors. Design features increase bicycle ridership benefits to all members of the community since it promotes human-scale environments, traffic calming, reduced greenhouse gas emissions, and a healthier population.

Bicyclists

Bike route signs will serve bicycle riders of all persuasions — commuters, families, recreational riders, and visitors ranging from experienced to new bicycle riders. Bicycle counts taken in 2012 and 2014 show an overall increase in bicycle ridership in Santa Cruz County since 2003, with the greatest number of bicyclists in the City of Santa Cruz and mid-County, including Capitola. On average, over 3,500 workers ride a bicycle to work in Santa Cruz County between 2006 and 2010, according to the American Community Survey 5- year estimate. While the sign program will clearly serve commuters, commute trips account for just 16% of all trips nationally, according to the 2009 National Household Travel Survey. So there are a far larger number of residents traveling for other household trips, such as shopping and school by bicycle, who will benefit.

New Bicycle Riders

Community members who want to travel by bicycle but have safety concerns may be encouraged by the designation of specific bicycle routes and add to the total number of bicyclists in Santa Cruz County. Safety concerns are the main reason why residents do not choose bicycling for short trips in Santa Cruz County, according to a 2012 public input survey conducted by the RTC. Increased bicycle ridership also means higher visibility which heightens safety and provides an inviting atmosphere to timid or novice riders.

Visitors

Visitors to Santa Cruz County will be served from improved guidance while traveling through the county on touring trips or navigating around town by bicycle.

Pedestrian Way finding

While the bike route signs will be useful to pedestrians, the system will not be specifically designed to support pedestrian travel. Pedestrian way finding signage is generally focused on a finer level of detail, with support of shorter trips, areas with higher density, and more local destinations. A bicycle signage system supports longer trips and are designed and located to accommodate users traveling at speeds in the range of ten to fifteen miles per hour.

Funding

The RTC initially considered an application for \$300,000 for development of this program and later estimated \$500,000 was needed for a robust and comprehensive countywide signage program. The requested amount was determined after researching the cost of developing such programs in other areas; identifying preliminary estimates for the number of routes and signs needed; considering maintenance requirements; and estimating the staff time needed to adequately coordinate sign and route development

with all local jurisdictions. In response to the application for \$300,000 in funding to develop the program, the RTC approved a reduced amount of \$100,000 in Regional Surface Transportation Program funding. RTC staff worked with a limited project scope to develop a SCC Bicycle Route Signage Program 2015 Implementation Plan designed to accomplish program goals and position the region to take advantage of future funding opportunities.

Other jurisdictions have financed their programs through the following funding mechanisms: Bicycle Transportation Account (BTA), Transportation Development Act (TDA), Proposition 116, Transportation Enhancement Act (TEA), local maintenance funds, and various tax measures, among others. Many of these funding sources could be pursued to acquire additional funds for the county's program, while others are no longer available due to legislative changes in recent years. For example, individual jurisdictions or the RTC could apply for Active Transportation Program funds to help fund portions of the sign program within their jurisdiction.

Chapter 2- Needs Assessment

Existing Conditions

As of December 2014, there are 216 bikeway miles in Santa Cruz County, consisting of 191 miles of Class II striped bike lanes on a street or highway and 25 miles of Class I separated paths designated exclusively for bicycle travel. Class II bike lanes can be found on most arterials and collector roads. Green bicycle lane treatments are sometimes incorporated with Class II bike lanes when bike lanes are painted green in all or some locations. Class I bike paths can be found on the San Lorenzo River Levee, Arana Gulch Multi Use Path, Branciforte Creek Trail, and some segments of the Watsonville Slough Trails. RTC staff has not conducted an analysis of the number of Class III miles existing in the county. Sharrows are sometimes found on Class III facilities and provide improved visibility for bicycles. The area has an active bicycling community, which promotes the provision of dedicated bicycle facilities on a variety of road way types, to accommodate the varied ability and comfort levels of bicycle riders. While the county is currently served by a wide variety of bicycle facilities, the majority of the areas lack a clear, comprehensive, and consistent sign system that provides bicycle riders with directional information and information about mileage to destinations and points of interest. Two different sign systems already exist, namely the Pacific Coast Bike Route and the California Coastal Trail, but they do not provide destination or mileage-to-destination information. Additionally, many Pacific Coast Bike Route signs are in need of maintenance, and gaps in the sign system need closing. The SCC Bicycle Route Signage Program provides an opportunity to connect routes and make improvements.

Safety

Safety concerns are the main reason why residents do not choose bicycling for short trips in Santa Cruz County, according to a public input survey conducted by the RTC in 2012. Santa Cruz County bicyclists' injury/fatality rate is almost twice the State injury/fatality rate, with 158 bicyclists injured or killed in 2010, according to the Community Traffic Safety Coalition 2010 Bicycle State of the County Report. State injury/fatality rates are based on collisions per total population and not collisions per total bicycle ridership. Bicycle crashes were common at major intersections on high-speed, multi-lane arterial streets, and roads with high truck traffic volumes.

Multimodal Network Quality

The level of use of bicycle facilities is highly dependent on the quality of the facility. The quality of a bicycle facility reveals the level of comfort it provides to people riding bicycles. The Multimodal Network Quality Analysis of Santa Cruz bicycle facilities completed in 2014 concluded that the overall quality of the Santa Cruz County bicycle network rated 26 out of a maximum of 100. Although the presence of signed bicycle routes was not a variable analyzed in the bicycle network quality analysis, the location of bicycle facilities with respect to motor vehicle speed and the type of bicycle facility was a factor to determining the network score. Understanding the quality of bicycle facilities is important for increasing the number of bicycle riders by way or offering comfortable environments for bicycling.

Bicycle Plans

All local jurisdictions within the RTC planning area have developed bicycle plans to guide implementation of local policies and funding to support bikeway development, maintenance and support facilities. The purpose of bicycle plans range from developing integrated bicycle networks to implementing bicycle safety goals and designing a system that will increase bicycle commuting. Bicycle plans have undergone public review. Routes are generally consistent with priorities dictated in bicycle plans.

Monterey Bay Sanctuary Scenic Trail Network

The Monterey Bay Sanctuary Scenic Trail Network is planned to be a 50-mile bicycle and pedestrian pathway along the coast of Santa Cruz County. It will go from the San Mateo County line in the north to the Monterey County line at Pajaro, as defined in the Monterey Bay Sanctuary Scenic Trail Master Plan adopted in 2013. The RTC is overseeing the Santa Cruz County sections of the Monterey Bay Scenic Sanctuary Trail. In Santa Cruz County, the Monterey Bay Sanctuary Scenic Trail Network merges plans for a bicycle and pedestrian trail along the rail line – including coastal alignments and neighborhood spurs – into a connected network that will overlap and converge to provide safe and convenient route choices. Segments of the Monterey Bay Sanctuary Scenic Trail Network, located in the urban areas of the City of Santa Cruz and City of Watsonville, are under development. The Monterey Bay Sanctuary Scenic Trail Network will serve as the California Coastal Trail in Santa Cruz County.

California Coastal Trail

The California Coastal Trail is defined as a continuous public right-of-way along the California coastline—a trail designed to foster appreciation and stewardship of the scenic and natural resources of the coast through hiking and other complementary modes of non-motorized transportation. The Monterey Bay Sanctuary Scenic Trail Network will serve as the California Coastal Trail in Santa Cruz County.

Pacific Coast Bicycle Route

In Santa Cruz County, Highway 1 is recognized as the Pacific Coast Bike Route. The route generally follows Highway 1 north of the city of Santa Cruz, surface streets in the cities and county urbanized areas, and along rural surface streets south of Aptos. The Pacific Coast Bike Route is shown in [Appendix C](#). Due to its spectacular scenery, the route draws many recreational bicycle riders, mountain bikers, charity ride participants, group riders, bike delivery operations, triathlons, bicycle races, and is promoted by the national organization, Adventure Cycling Association.

Multiuse Pathways

There are several multi-use pathways in Santa Cruz County that serve bicycle travel. Included are the San Lorenzo River Levee Trail, the Arana Gulch Multi Use Path, Branciforte Creek Trail and some of the Watsonville Slough Trails. The multi-use pathways and most paved trails are considered Class I bicycle facilities and are physically separated from motor vehicle traffic. Multi-use pathways can provide more comfortable facilities for less experienced bicycle riders because they do not have to share the path with motor vehicles and provide fewer opportunities for conflicts between bicycle riders and motor vehicles.

Neighborhood Shared Streets

Neighborhood shared streets are local roadways that emphasize slow speeds and lower volumes and optimize bicycle and pedestrian travel. Neighborhood shared streets are intended to create “low stress” routes for bicyclists to connect to common neighborhood destinations. Neighborhood shared streets are typically located on local roads and may have one or more of the following: pavement markings that signal drivers and bicyclists to share the road; dedicated bicycle and pedestrian facilities; improved bicycle and pedestrian crossings; bicycle and pedestrian scale way finding signs; and traffic calming measures. Future neighborhood shared streets are identified in the 2014 Regional Transportation Plan.

City of Santa Cruz Way Finding Program

The City of Santa Cruz Way Finding and Signage Program is an integrated system which markets the City of Santa Cruz, while communicating that the City is unique, friendly and organized through helping visitors more easily find their way to intended and discovered destinations. The City of Santa Cruz Way Finding and Signage Program recommends developing bicycle signage for the West Cliff Drive and San Lorenzo River Levee bike loops, to include mileage and time specifications.

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Chapter 3- Route Selection

Methodology

Preferred routes are selected based on the following features: proximity to common origins and destinations; proximity to points of interest, route directness and connectivity; bicycle facilities; target audience; and traffic volumes and speeds, with safety as a major consideration. Other factors considered when choosing routes include geographic distribution, scenic attributes, and topography. The route selection process is undertaken in collaboration with all local jurisdictions in the county, as many routes crossover multiple jurisdictions.

Common Origins & Destinations

Selecting common origins and destinations is the first step in identifying preferred bicycle routes for Santa Cruz County. Common origins and destinations are considered major attractors and can generally be described as: downtowns, town centers, commercial centers, universities, state parks and beaches, and neighborhood centers. In some cases, major arterials serve as bicycle route origins (ex. Soquel Avenue and Freedom Boulevard) if their location draws individuals from more than one surrounding neighborhood or where roadways provide a connection to another bicycle route. Points of interest along routes are also important factors in determining route locations. Points of interest are described as major transit stations, colleges, coastal access points, and multi use path and trail systems. A list of common destinations and points of interest is included in [Appendix A](#).

Target Audience

The SCC Bicycle Route Signage Program is designed to serve all ages and abilities and address the needs of commuters, families, recreational riders, and visitors. Within this audience there is a continuum of experience, attitudes, and comfort associated with bicycling. The Federal Highway Administration (FHWA) describes this continuum using a scheme based on bicyclist skill. Advanced cyclists are those whose greater skill enables them to share roads with motor traffic and may be willing to sacrifice separation from traffic stress for greater speed. Basic adult cyclists are those who lack the "skill" to confidently integrate with fast or heavy traffic. Children cyclists are those who are less capable than the basic adult cyclists at negotiating with traffic and more prone to irrational and sudden movements. Common destinations using a bicycle may also vary across the target audience. For example, recreational riders may be most interested in reaching state parks or beaches and transit stations. Families may be most interested in reaching neighborhood centers, parks or schools. The result is a diverse set of bicycle routes that expose bicyclists to varying intensities of motor vehicles and motor vehicle speeds and provide links to nearby and farther away destinations.

Traffic Volumes & Speeds

Traffic volumes and speeds can be factors in a bicycle riders safety and comfort. Increase in traffic speeds and traffic volumes create "traffic stress". For example, multi-lane streets can promote higher traffic speeds and decrease ability to notice bicyclists to left-turning motor vehicles and cross traffic at driveways and intersections. Also, the severity of a crash involving a bicyclist and motorist increases exponentially with speed. Providing a low level of stress for bicyclists requires progressively more protective measures, which

include dedicated bike lanes and, ultimately, physically segregated bikeways to commensurate with the traffic speed.

Bicycle Facilities

Signed bicycle routes are located on Class I, Class II and Class III bicycle facilities. Examples include: bicycle routes that utilize the San Lorenzo River Levee Class I bicycle path; Class II bicycle lanes on Soquel Avenue/Drive and collectors; and local roadways, including neighborhood streets, which serve as Class III bicycle facilities. The existing bicycle route network represented in the RTC's Santa Cruz County Bike Map should be referenced when selecting routes.

Bicycle facilities by route vary depending on the target audience and route location. Bicycle routes are typically located where there are existing bicycle facilities or low speed and low traffic roadways. Upgrades to existing bicycle facilities on identified routes may be recommended to establish the most conducive environment for the experience level and comfort of different rider types.

Safety

The most common motor vehicle-bicycle crashes are located at intersections and may include a motorist passing a cyclist on the left and turns right into the bike's path or a motorist fails to see a cyclist and makes a left turn. Other common motor vehicle-bicycle crashes are: a person riding a bicycle, traveling next to parked cars lined up on the street, strikes a car door opened by the driver; a motorist exits a driveway or parking lot into the path of a bicyclist; a motorist overtaking bicyclists from behind. In Santa Cruz County, bicycle collisions were most frequent on arterial and collector routes with speeds between 25 and 35 mph. The SCC Bicycle Route Signage Program is designed to reduce potential conflicts between bicycle and motor vehicles.

Geographic Distribution

It is important that chosen routes are equitably distributed throughout the county. Throughout Santa Cruz County there are bicyclists with a range of needs. Providing a variety of bicycle route options at locations throughout the county is the most equitable approach to distributing the benefits of bicycling. Furthermore, the overall success of the SCC Bicycle Route Signage Program is dependent on the routes ability to link common origins and destinations across Santa Cruz County.

Route Type

Preferred bicycle routes are categorized by route type. Regional, local and neighborhood routes have been designated to address the diverse needs of the target audience. Identifying three classes of preferred bicycle routes promotes routes that are designed to maximize utility and appeal to the broadest range of bicycle riders consistent with the SCC Bicycle Route Signage Program target audience. While the preferred bicycle routes are designed for all, bicyclists should always use their judgment in selecting routes that suit their experience and comfort level.

Regional Bicycle Routes: Connect common origins and destinations that support several communities and a mixture of community needs. Routes are designed to prioritize route

directness over low traffic stress. Routes are typically cross-county routes between six and twenty-miles and link to local and neighborhood routes. Routes may appeal to more experienced bicycle riders categorized as advanced riders by FHWA. Routes are typically composed of Class II bicycle facilities. *Local Bicycle Routes*: Connect between three or four common origins and destinations that support a local community's needs and provide connections to adjacent jurisdictions and neighborhoods. Routes are designed to balance route directness with traffic stress. Routes are between five and eight miles in length and link with other local route and neighborhood routes. Routes may appeal to bicycle riders with less experience integrating with traffic and fall into the category of basic adult riders, according to FHWA. Routes are typically composed of Class II and Class I bicycle facilities, and shared local roadways.

Neighborhood Bicycle Routes: Connect two or more common neighborhood origins and destinations. Routes prioritize low traffic stress over route directness. Routes are intended for new bicycle riders with little or no experience negotiating traffic and bicycle riders who fall into the category of children riders according to FHWA. Routes are between two and three miles in length and link with other local and regional routes. Routes are typically Class I bicycle facilities and shared local roadways, such as neighborhood shared streets. Class II bicycle facilities may provide connections along the route. Neighborhood routes may be further evaluated in conjunction with other neighborhood transportation planning projects.

Phased Approach

The SCC Bicycle Route Signage Program is expected to be implemented over time as resources become available. The 2015 Implementation Plan introduces the first group of routes proposed for implementation consistent with the 2015 Implementation Plan methodology. A phased approach introduces bicycle signage to the community at a scale that fits within available planning funds and allows for revisions to the system to adapt to the community's level of interest. Additional signed bicycle routes could be identified in phases consistent with available resources and funding opportunities. Once successful routes have been signed, there will likely be public requests for additional routes. Such support could help facilitate securing of funds for future routes.

Phase I Bicycle Routes

The bicycle routes identified in the 2015 Implementation Plan are the first step in developing the community's bicycle route signage program and establish the foundation for future routes and are referred to as phase 1 bicycle routes. Phase I bicycle routes build on the information provided in 2013 by local jurisdictions' representatives, as well as by bicycle advocacy/advisory organizations' representatives during development of the SCC Bicycle Route Signage Program 2015 Implementation Plan. Phase I bicycle routes focus on identifying preferred routes between common origins and destinations connecting locations generally within the urbanized areas of Santa Cruz County. Phase I bicycle routes are designed to link with an expanded network of routes as future phases of the SCC Bicycle Route Signage Program are implemented. [Appendix B](#) includes a description of Phase 1 bicycle routes, maps of routes, and street network details.

Public Involvement

The RTC Bicycle Advisory Committee and representatives from local jurisdictions provided input on the 2015 Implementation Program. The RTC Bicycle Advisory Committee is comprised of members of the public representing a variety of bicycling interests and representatives of local bicycle organizations. Updates to the program goals, phase I bicycle routes, and program promotion were made in response to comments received. Neighborhood routes may be revised as a result of additional input received during future neighborhood transportation planning activities. Development of local bicycle plans and the Regional Transportation Plan include extensive public involvement and were considered in the development of the SCC Bicycle Route Signage Program 2015 Implementation Plan.

Program Expansion

Upon completion of phase I bicycle routes, including sufficient time for completion of field review and program evaluation, the RTC, in partnership with local jurisdictions and partner agencies, may consider expanding the number of signed bicycle routes. Future signed bicycle routes should be selected consistent with the methodology described in the 2015 Implementation Plan. Adjustments to the methodology should only be made if the outcomes do not conflict with previously implemented signed bicycle routes.

Chapter 4- Sign Design Guidelines

Standard Signs

The standard SCC Bicycle Route Signage Program signs provide bicyclists three general kinds of guidance: direction, destination, and distance information along designated SCC Bicycle Route Signage Program routes.

- 1) Directional information instructs bicyclists about which way to go to reach common destinations near approaching decision points and intersections.
- 2) Destination information confirms the bicyclist's route choice for reaching common destinations after selection of a direction at decision points and intersections.
- 3) Distance information indicates mileages and allows bicyclists to plan for energy needs and to better account for the time that the bicycle trip may require.

The SCC Bicycle Route Signage Program proposes to use the Federal Highway Administration's and California Manual on Traffic Safety Control Devices (MUTCD) sign standards to support a destination-based route signing system. The MUTCD destination-based route signs selected for the SCC Bicycle Route Signage Program are recognizable, easy to understand and provide the greatest utility in terms of destination and distance information. The destination-based sign system follow the look and feel of standard highway guide signs, with the addition of a bicycle graphic to identify that the signs are designed for bicyclists, and encourage consistency with existing "Bike Route" signs. Several areas within California with signed bicycle routes are installing or moving towards destination-based route signs.

A modified version of sign D11-1 combined with D1-1a to D1-3a, shown in Figure 1, are the primary signs utilized for the SCC Bicycle Route Signage Program to direct bicycle riders and assure bicyclists they are on the correct route. A modified version of the D11-1 sign is proposed to remove the words "BIKE ROUTE". The words "BIKE ROUTE" officially reference a Class III facility. While this distinction may not be of concern to users, the use of "route" on a Class I or II facility is incorrect. In addition, minimizing the number of words presented on a sign is typically preferred. Sign D11-1c shown in Figure 1 may occasionally be utilized for the SCC Bicycle Route Signage Program when only the final destination is identified, typically in more rural areas where there are few decision points. The D1-1a/D1-3a signs provide directional and mileage aspects when combined with the D11-1 sign.

In order to give jurisdictions as much flexibility as possible while maintaining a uniform look across the county, the SCC Bicycle Route Signage Program should deploy the signs identified in Figure 1 below in a modular fashion, with consideration for the 2015 Implementation Plan sign design guidelines, and professional judgment of location and route specific circumstances.

Figure 1: Standard SCC Bicycle Route Sign

Option 1: To be used before decision points to direct bicycle riders to the correct destination and identify the direction and distance to destinations and points of interest.



D11-1, modified ("Bike Route" removed)

Size: 24" x 18"



D1-1a: Single Destination

D1-2a: Two Destinations

D1-3a: Three Destinations (shown here)

Size: Height varies based on number of destinations; width varies, but could limit to 24" to match width of D11-1

Note: The two signs for Option 1 can be mounted on single plate

Option 2: To be used after decision points or along routes to confirm that bicycle riders are headed towards the correct destination. Only the final destination is identified on confirmation signs.



D11-1c

Size: 24" x 18"

The sign layout specification for the SCC Bicycle Route Signage Program deviates from the MUTCD as described in Table 1.

Table 1: Standard Sign Deviation from MUTCD

Difference from MUTCD	Rationale
Removes "BIKE ROUTE"	Remove reference to Class III facility
Incorporates symbols with destination names	Improved communication while minimizing text

Sign Text & Mileage

Text on signs should be limited to destinations, points of interest and symbols for transit, multiuse paths, and state parks as listed in [Appendix A](#). Reference to commercial destination should be minimized. Final destinations should be included on all respective route signs. Route destinations should be signed at a distance of less than six miles. Points of interest should be signed at a distance of less than two miles. Signs shall use mixed case letters (e.g. upper case and lower case).

Distances on bicycle routes should be measured from the center of intersections to the geographical or business center of urban nodes. Mileage on signs should be listed in one mile increments. When the distance is less than one mile, the mileage number is expressed as a decimal, with a zero placed before the decimal (e.g., "0.5").

Symbols on Standards Signs

Symbols will be used to convey destination and point of interest information in a space efficient manner. Symbols will be incorporated to identify the location of multiuse paths or trails, state parks, and transit stations. Symbols that may be incorporated with the SCC Bicycle Route Signage Program are shown in Figure 2. Figure 3 provides examples of SCC bicycle route sign with symbols.

Figure 2: Symbols for Use with SCC Bicycle Route Signs



Multi Use Path	Transit Station	California State Park
		TBD

Figure 3: SCC Bicycle Route Sign with Transit or Multi Use Path Symbol

Symbols will be used to convey destination and point of interest information in a space efficient manner on SCC Bicycle Route Signs. The modified D1-1a signs here are combined with D11-1 modified sign to indentify the location of a transit station and multi use path.



Sign Layout

The following should be considered when determining sign layout:

- 1) Include no more than three locations made up of a combination of destinations and points of interest;
- 2) Locate the nearest destinations or point of interests at the top two places. If destinations or points of interests are equal in distance, the sign with an up arrow should be placed on top;
- 3) The final destination should be located in the bottom place. If a point of interest is beyond the final destination, then the point of interest beyond the final destination may be located in the bottom place and the final destination should be located in the middle place;
- 4) If a combination of destinations and points of interest are greater than three, than the two nearest destinations or points of interest should be listed in the top two places and

the final destination should be listed in the bottom place. If a point of interest is beyond the final destination, then the nearest destination or point of interest should be placed in the top place, the final destination placed in the middle and the point of interest beyond the destination should be placed in the bottom place;

- 5) The straight arrow should be placed to the left of a destination and be left-justified, the left arrow to the left of a destination and be left-justified, and the right arrow to the right of a destination and be right-justified; and,
- 6) Symbols should be located between arrows and destination text and included only for destinations within two miles of the bicycle route.

Sign Assemblies

A sign assembly is the group of signs that are placed at one location. SCC Bike Route Signage Program sign assembly would include the modified D11-1 "Bike Route" sign shown in Figure 1 plus a second set of D1-1a to D1-3a signs mounted below that contain destination and distance information. In unison, they contain the necessary SCC Bicycle Route Signage Program information at that location.

The RTC recommends that each sign be produced separately, rather than putting all the signs for a given sign assembly on a single plate. Separate signs will ease replacement of individual units. Using a single plate for each sign assembly is possible, though, and has been done by various jurisdictions.

Sign Frequency

Signs per directional mile will vary based on the number of decision points. Some routes might be more rural, and have less decision points, meaning fewer signs are needed. More urban routes will need more signs, since decision points are abundant. Other bicycle route signage program signs frequency range from 14 to 2 signs per bi-directional mile. The Pacific Coast Bike Route signs originally installed in Santa Cruz County contain 8 signs per bi-directional mile (4 in each direction). The SCC Bicycle Route Signage Program is expected to average 2 to 4 signs per bi-directional mile with signs per mile increasing in areas where there are multiple decision points and signs per mile decreasing in areas where there are fewer decision points.

Sign Placement

Effective placement of signs along the routes is crucial to the functioning of the system. Each route should be evaluated individually to determine the most effective location for signs. Signs should generally be located before and after major intersections or decision points, before a bike route turns. Location for sign installations should be determined by the responsible local jurisdiction.

Sign placement located near intersections should consider intersection geometrics, number of lanes, sign distance and professional judgment. For example, left turns may require a sign to be placed a greater distance before the intersection based on the number of lanes the bicyclist must merge across in order to make the left turn. Other bicycle route signage programs place decision signs 30 feet for a zero lane merge and 100 feet for one or more lane merges.

Sign locations should be mapped prior to installation. A database of final sign locations should be documented and shared between local jurisdictions and RTC. Doing so will ease

maintenance efforts when signs need to be replaced, which will help maintain the integrity of the sign system. Evaluation of sign locations conducted during field reviews should utilize maps of planned sign locations.

A database of final sign locations should include a detailed description of:

- Sign placement including closest cross streets and distance in feet from intersections, where possible;
- Sign assembly including MUTCD signs utilized, signed destination and mileage, other signage located on the sign post, and a image of posted sign where possible; and,
- Sign dimensions including sign height and clearance.

Other Sign Systems

SCC Bicycle Route Signage Program signs should integrate with other signs systems to avoid proliferation of signs, where appropriate. Existing signs for the California Coastal Trail, the Pacific Coast Bike Route, San Lorenzo River Levee Trail, as well as standard bike path, bike lane, and bike route signs are installed throughout the county. SCC bicycle route signs should also plan to integrate with future sign systems.

Bike Facility Signs

Figure 4 provides examples of existing bicycle sign systems in Santa Cruz County. Class III signs are similar to and can integrate well with the SCC Bicycle Route Signage Program. Class II signs are different in color scheme and Class I signs are different in color scheme and layout than the SCC Bicycle Route Signage Program. To encourage an easily recognizable sign system, where bike facility signs are located on SCC Bicycle Route Signage Program routes:

- 1) Existing Class III facility signs should generally be removed or combined with SCC Bicycle Route Signage Program signs; and,
- 2) Existing Class I and Class II facility signs should be removed.

Two bike facility signs initiatives – one state and one national – could result in new bike signs in the county as shown in Figure 5. The U.S. Bike Route initiative, a program sponsored by the American Association of State Highway and Transportation Officials and the American Cycling Association, is requesting that local jurisdictions designate and sign bike routes of national significance. A California initiative resulting from the passage of AB 1464 is requesting the same thing. Both programs have unique signs. At this time, RTC staff is recommending that the Pacific Coast Bike Route network be used for both programs and that no new signs are installed in order to avoid confusion and sign proliferation.

Figure 4: Existing Bicycle Facility Signs in Santa Cruz County






Pacific Coast Bike Route	Class I Bike Path	Class II Bike Lane	Class III Bike Route
			

Figure 5: Future Bicycle Facility Sign in Santa Cruz County

Possible US Bike Route	AB 1464 State Route Program
	Image not yet determined

Pacific Coast Bike Route

The Pacific Coast Bike Route signs are similar to the SCC Bicycle Route Signage Program signs and can integrate well with the SCC Bicycle Route Signage Program. To encourage an easily recognizable sign system, existing Pacific Coast Bike Route signs may be combined with SCC Bicycle Route Signage Program signs. Combining Pacific Coast Bike Route sign with the SCC Bicycle Route Signage Program sign can be accomplished by replacing the existing D11-1 “Bike Route” sign with the adopted SCC Bicycle Route Signage Program standard signs (modified D11-1 sign), adding directional sign elements, and relocating signs consistent with the SCC Bicycle Route Signage Program sign placement principles. An example of a Pacific Coast Bike Route sign combined with the SCC Bicycle Route Signage Program sign is shown in Figure 6.

Figure 6: SCC Bicycle Route Sign Combined with Pacific Coast Bike Route Sign



Multi Use Path & Trail System Signs

Bicycle route signs identifying the location of multi use paths or trail systems may include the multi use path or trail system symbol in addition to the text description, such as shown on Figure 3. Where SCC Bicycle Route Signage Program routes overlap with multi use path or trail systems, such as the San Lorenzo River Levee Trail, Watsonville Slough Trails, and future Monterey Bay Area Scenic Sanctuary Trail, signing for the SCC Bicycle Route Signage Program could be incorporated into the unique multi use path or trail use signs. When SCC Bicycle Route Signage Program signs are incorporated with unique multi use path or trail system signs, the bicycle route sign should maintain the look and feel of the standard SCC Bicycle Route Signage Program signs and remain consistent with the 2015 Implementation Plan placement principles. The SCC Bicycle Route Signage Program's signs may be modified in size to fit within the adopted multi use path or trail post sign. Figure 7 provides an example of how a SCC Bicycle Route Signage Program sign may be incorporated into a unique multi use path or trail use sign.

Figure 7: SCC Bicycle Route Sign Incorporated with Multi Use Path or Trail System Sign



Chapter 5- Project Delivery

As a Regional Transportation Planning Agency (RTPA), the RTC is in a unique position to implement a countywide bike route signage program. The RTC will work closely with all local jurisdictions through which routes will traverse (the Cities of Watsonville, Scotts Valley, Capitola, and Santa Cruz, the County of Santa Cruz, and Caltrans for state highway facilities) to deliver the SCC Bicycle Route Signage Program.

In 2010, the RTC provided the initial funding for development of the SCC Bicycle Route Signage Program. The RTC developed the 2015 Implementation Plan in coordination with the RTC's Bicycle Advisory Committee and local jurisdictions and adopted the Final 2015 Implementation Plan in May 2015. RTC will work with local jurisdictions to implement the SCC Bicycle Route Signage Program. Sign design standards and placement will be consistent with the adopted 2015 Implementation Plan.

Sign Production and Installation

Available resources for project delivery, related planning efforts, and institutional capacity will influence the role of RTC and local jurisdictions in production and installation of signs. The RTC will pursue funding for implementing the SCC Bicycle Route Signage Program as opportunities arise. Local jurisdictions may also provide funding for sign production and installation. Distribution of funds from RTC for implementation of the SCC Bicycle Route Signage Program will consider equitable geographic distribution, time of requests by local jurisdiction, and route connectivity.

Some examples of RTC and local jurisdictions roles in production and installation of signs may include:

- 1) Local jurisdictions produce and install signs consistent with the 2015 Implementation Plan.
- 2) RTC coordinates production of signs and local jurisdictions install signs consistent with the 2015 Implementation Plan. Production of signs may be completed by an outside vendor or one local jurisdiction on behalf of other local jurisdictions within Santa Cruz County.
- 3) RTC coordinates production and installation of signs consistent with the 2015 Implementation Plan. Production and installation of signs may be completed by an outside vendor or one local jurisdiction on behalf of other local jurisdictions within Santa Cruz County. The RTC does not have a licensed traffic engineer on staff, therefore sign placement would be dependent on engineering evaluations after consideration of line of sight, traffic volume, lane numbers, and other factors. RTC recommends this approach only if all other options have been exhausted.

Agreements, contracts or memorandums of understanding desired or required to carry-out sign production and installation will be handled on a case by case basis. Coordination with Caltrans may require more administration, however, as local bicycle route signs may require greater level of consideration to be located on state facilities.

The RTC will provide as much assistance, direction, and guidance as possible. Local agencies' participation is paramount and creative streamlining, such as waiving

encroachment permits, will provide for time and cost savings.

Sign Maintenance

Sign maintenance is crucial to the success of the SCC Bicycle Route Signage Program. Missing, damaged, or vandalized signs in any link in a route could render that route incomplete.

Local jurisdictions will be responsible for sign maintenance, including manufacture of replacement signs, installation, and all associated costs. In preliminary discussions with local jurisdictions in Santa Cruz County, sign maintenance costs are estimated between \$2,000 and \$4,000 annually per local jurisdiction, depending on the number of signs installed. If funding is identified, the RTC will strive to cover on-going sign replacement as possible.

Sign Costs

A major expense in the sign program is the cost to manufacture the bike route signs and install them, including hardware and labor. In preliminary discussions with local jurisdictions and a review of other Bay Area bike route sign programs, sign production/installation costs are estimated to be between \$300 and \$400 per sign for the SCC Bicycle Route Signage Program. This estimate includes the cost of encroachment permits where they may be needed. One way of determining the total costs for implementing signage on bike routes is to determine the average number of signs used per bi-directional mile. Once the number of miles on a given route is known the number of signs and cost per route can be calculated.

Field Survey

It is recommended that a pre-installation field survey occur for each route prior to sign installation to ensure that directional guides are logical, comprehensive, and streamlined. Field survey should reveal route deficiencies that may impact sign placement and solutions or enhancements such as bicycle route pavement markings. A post-installation field review would also be advisable to confirm network connectivity and functionality. Members of the public and/or advocacy organizations could be invited to assist in this effort.

Liability

Liability questions have been raised locally by the members of the RTC. Other jurisdictions determined that improvements associated with the bike route system (i.e. improved road conditions, increased motorist awareness) could themselves reduce liability concerns. Additionally, the recent "Complete Streets" approach to transportation projects, which aims to address the safety and mobility needs of bicyclists, pedestrians, and transit users in all projects, is a goal of this improvement project as well.

Chapter 6- Promotion & Evaluation

Promotion

The SCC Bicycle Route Signage Program will be promoted using a variety of public information strategies including public officials' endorsement at a ribbon cutting, media coverage in local publications, and route maps. Additionally, the resources of partnering organizations such as: Ecology Action and its Bike to Work program, the Community Traffic Safety Coalition, and Bike Santa Cruz County (formerly People Power) will be utilized to promote routes. At the current time, funding is not available for any specific promotional campaign so no-cost avenues will be employed.

Route Maps

Maps of bicycle routes may be developed in hard copy and electronic version when additional resources are available. Maps of the complete bicycle route system may be posted at key junctures along the bicycle route system. In addition, the inclusion of quick response, "QR" codes on hard copies and electronic versions of the maps may assist bicycle riders in identifying their exact location and could be further investigated for inclusion in route map materials.

Route numbering can provide a reference for bicycle riders utilizing reference maps and may be included in hard copy and electronic versions of SCC Bicycle Route Signage Program maps. Consistent with other bicycle route numbering systems, routes that are generally east-west are referenced with even numbers and routes that are generally north-south are referenced with odd numbers. Route numbers will not be included on signs and will serve as reference for planning purposes and mapping resources only.

Evaluation

Bicycle ridership counts should be completed before and after sign installation. Bicycle ridership counts on bicycle routes may be incorporated into existing bicycle count programs held annually and overseen by the Community Traffic Safety Coalition and the RTC. Surveys to capture the public's awareness of bicycle route signage and routes can also evaluate the program effectiveness.

Appendices

Appendix A: Common Destinations and Points of Interest

Appendix B: Phase I Bicycle Routes

- **General Description**
- **Maps**
- **Street Network**

Appendix C: Pacific Coast Bike Route Map

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Appendix A: Common Origins-Destinations & Points of Interest

Signed Locations	Sign Text*	Symbol
Origins-Destinations, Commercial Centers		
Aptos Village	Aptos Vlg.	
Capitola Mall	Capitola Mall	
Capitola Village	Capitola Vlg.	
Downtown Santa Cruz	Santa Cruz Dwtn.	
Downtown Watsonville	Watsonville	
Felton	Felton	
Green Valley Commercial Center	Green Valley	
Please Point	Pleasure Pt.	
Scotts Valley Town Center	Scotts Valley	
Seacliff Village	Seacliff Vlg.	
Soquel Village	Soquel Vlg.	
UCSC	UCSC	
Origins-Destinations, Neighborhoods		
Live Oak Neighborhood	Live Oak	
Prospect Heights Neighborhood	Prospect Hts.	
Seabright Neighborhood Center	Seabright	
Seacliff Neighborhood	Seacliff	
Westside Neighborhood Center	Westside	
Points of Interest, State Beaches		
Manresa State Beach	Manresa	Park/Beach
Henry Cowell State Park	Henry Cowell	Park/Beach
Lighthouse State Beach	Lighthouse	Park/Beach
Natural Bridges State Beach	Natural Bridges	Park/Beach
New Brighton State Beach	New Brighton	Park/Beach
Nisene Marks State Park	Nisene Marks	Park/Beach
Seabright State Beach	Seabright	Park/Beach
Seacliff State Beach	Seacliff	Park/Beach
Sunset State Beach	Sunset	Park/Beach
Twin Lakes State Beach	Twin Lakes	Park/Beach
Wilder Ranch State Park	Wilder	Park/Beach
Points of Interest, Multi Use Paths and Trail Systems		
Arana Gulch Multi Use Path	Arana Gulch	Multi Use Path
Branciforte Creek Path	Branciforte Cr.	Multi Use Path
Monterey Bay Scenic Sanctuary Trail	Rail Trail	Multi Use Path
San Lorenzo River Levee	San Lorenzo	Multi Use Path
Santa Cruz Harbor	Harbor	Multi Use Path
Watsonville Slough Trails	Slough Trails	Multi Use Path
Points of Interest, Transit Stations		
Pacific Transit Station	Santa Cruz Dwtn.	Transit
Capitola Mall Transit Station	Capitola Mall	Transit
Kings Village Transit Station	Scotts Valley	Transit
Watsonville Transit Station	Watsonville Dwtn.	Transit

Points of Interest, Other		
Boulder Creek	Boulder Cr.	
Cabrillo College	Cabrillo Colg.	
Cabrillo College Watsonville Center	Cabrillo Colg.	
Harvey West Park	Harvey West	
Long Marine Lab	Long Marine	
Pinto Lake	Pinto Lk.	
Pleasure Point	Pleasure Pt.	
Santa Cruz Wharf	Wharf	
Tannery Performing Arts Center	Tannery	

Locations Not Signed		
Origins-Destinations, Roadways**		
Capitola Avenue	NA	
Clares Street	NA	
East Cliff Drive	NA	
Freedom Boulevard	NA	
Green Valley Road	NA	
Main Street	NA	
Mission Street	NA	
Soquel Avenue	NA	
Soquel Drive	NA	
Origins-Destinations, Schools***		
Scotts Valley High School	NA	
Pajaro Valley High School	NA	
Watsonville High School	NA	

*Sign text may be modified to fit within sign spacing requirements.

**Roadways serve as a bicycle route origins if they link to more than one neighborhood or place, where the roadways provides a connection to another bicycle routes or where alternative routes to major roadways are recommended.

***Schools are identified as bicycle route origins if the school location also serves as origin for a neighborhood or is located on the outer limit of a bicycle route that also links commercial services.

Appendix B- Phase I Bicycle Routes, General Description

The bicycle routes identified in the 2015 Implementation Plan are the first step in developing the community's bicycle route signage program and establish the foundation for future routes and are referred to as Phase I bicycle routes. The Phase I bicycle routes build on the information provided in 2013 by local jurisdictions' representatives and bicycle advocacy/advisory organizations' representatives during development of the SCC Bicycle Route Signage Program - 2015 Implementation Plan. Phase I bicycle routes focus on identifying preferred routes that connect common origins and destinations. Phase I bicycle routes are designed to link with an expanded network of routes as future phases of the SCC Bicycle Route Signage Program are implemented. Consistent with other bicycle route numbering systems, routes that are generally east-west are referenced with even numbers and routes that are generally north-south are referenced with odd numbers. Route numbers will not be included on signs and will serve as reference for bicycle riders using mapping resources only.

Regional Bicycle Routes (RR):

- RR01- Felton to and from City of Scotts Valley and Downtown Santa Cruz
- RR02- Downtown Santa Cruz to and from Soquel Village, Aptos Village, Downtown Watsonville
- RR04- Capitola Mall to and from Downtown Santa Cruz
- RR05- Soquel Village to and from Capitola Village
- RR06- Seacliff Village to and from Capitola Village and Downtown Santa Cruz

Local Bicycle Routes (LR):

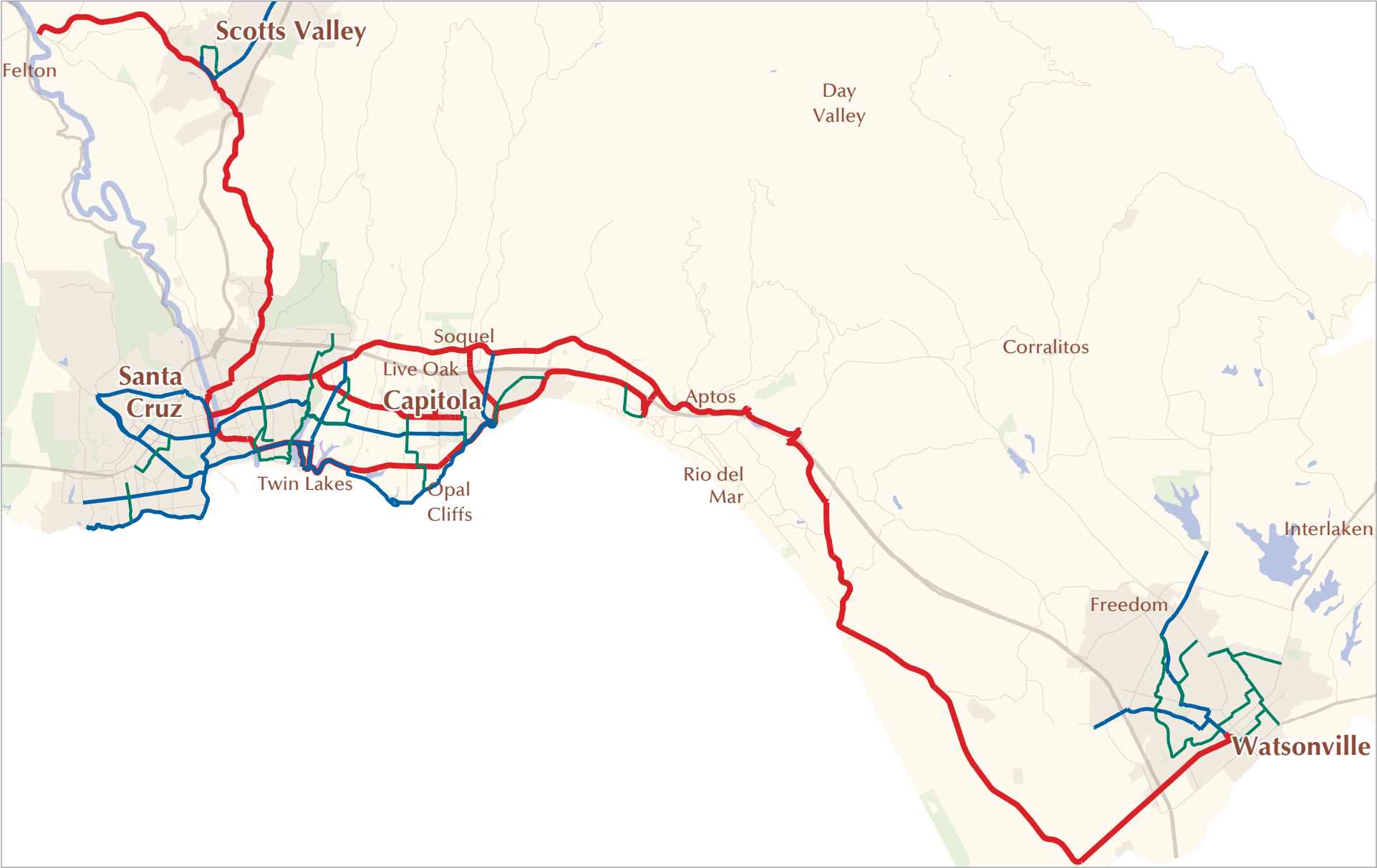
- LR 07- Scotts Valley High School to and from Scotts Valley Town Center
- LR08- Natural Bridges State Beach to and from Downtown Santa Cruz
- LR09- UCSC to and from Downtown Santa Cruz via Bay
- LR10- Capitola Village to and from Natural Bridges State Beach
- LR11- UCSC to and from Downtown Santa Cruz via High
- LR12- Capitola Village to and from UCSC
- LR13- Soquel Avenue to and from Seabright Neighborhood Center
- LR14- Pajaro Valley High School to and from Downtown Watsonville
- LR15- Pinto Lake to and from Downtown Watsonville
- LR17- Soquel Drive to and from Capitola Village

Neighborhood Bicycle Routes:

- NR18- Scotts Valley Drive to and from Scotts Valley Town Center
- NR19- Mission Street to and from Laurel Street
- NR20- Westside Neighborhood Center to and from West Cliff Drive
- NR21- Soquel Avenue to and from East Cliff Drive
- NR22- New Brighton State Beach to and from Capitola Village
- NR23- Soquel Avenue to and from Seabright Neighborhood Center
- NR25- Prospect Heights to and from Seabright Neighborhood Center
- NR27- Live Oak Neighborhood to and from Seabright Neighborhood Center
- NR29- Capitola Road to and from Pleasure Point
- NR31- Clares Street to and from Capitola Village
- NR33- Seacliff Neighborhood to and from Seacliff Village
- NR35- Hall Middle School to and from Downtown Watsonville
- NR36- Downtown Watsonville to and from Green Valley Commercial Center and Green Valley Road
- NR37- Watsonville High School to and from Downtown Watsonville
- NR39- Freedom Boulevard to and from Main Street
- NR40- Freedom Boulevard to and from East Lake Avenue
- NR41- Freedom Boulevard to and from Highway 129

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Appendix B: Phase I Bicycle Routes, Map - All Routes



SCC Bicycle Route Signage Program

Regional Bike Routes

Local Bike Routes

Neighborhood Bike Routes

Schools

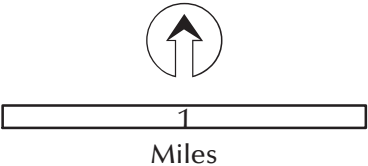
Transit Center

Appendix B: Phase I Bicycle Routes, Map - Scotts Valley and Felton



SCC Bicycle Route Signage Program

- Regional Bike Routes
- Local Bike Routes
- Neighborhood Bike Routes
- Schools
- Transit Center

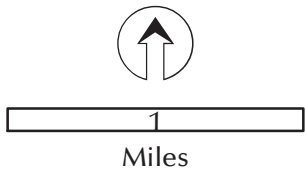


Appendix B: Phase I Bicycle Routes, Map - North & Mid County



SCC Bicycle Route Signage Program

- Regional Bike Routes
- Local Bike Routes
- Neighborhood Bike Routes
- Schools
- Transit Center

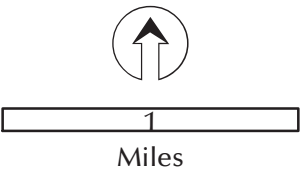


Appendix B: Phase I Bicycle Routes, Map - Capitola & Aptos



SCC Bicycle Route Signage Program

- Regional Bike Routes
- Local Bike Routes
- Neighborhood Bike Routes
- Schools
- Transit Center

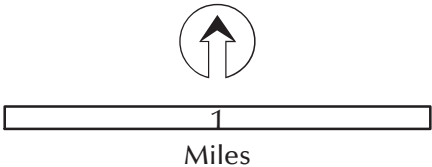


Appendix B: Phase I Bicycle Routes, Map - Watsonville



SCC Bicycle Route Signage Program

- Regional Bike Routes
- Local Bike Routes
- Neighborhood Bike Routes
- Schools
- Transit Center



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Appendix B: Phase I Bicycle Routes, Street Network

Route Reference	Route Type	Route Description	Street Network
Regional Routes			
RR01	Regional	Felton and Scotts Valley to Downtown Santa Cruz	Graham Hill Road, Mt. Hermon Road, Glen Canyon Road, Market Street, Water Street, Front Street Graham Hill Road Mt. Hermon Road Glen Canyon Road Market Street Water Street Front Street
RR02	Regional	Downtown Santa Cruz to Soquel Village, Aptos Village, Downtown Watsonville	Front Street, Soquel Avenue, Soquel Drive, Bonita Drive, San Andreas Road, Beach Road, West Beach Street Front Street Soquel Avenue Soquel Drive Bonita Drive San Andreas Road Beach Road West Beach Street
RR04	Regional	Capitola Mall to Downtown Santa Cruz	Capitola Road, Soquel Avenue Capitola Road Soquel Avenue Front Street
RR05	Regional	Soquel Village to Capitola Village	Porter Street, Bay Avenue, Monterey Avenue, Capitola Avenue Porter Street Bay Avenue Monterey Avenue Capitola Avenue
RR06	Regional	Seacliff Village to Capitola Village and Downtown Santa Cruz	State Park Drive, McGregor Drive, Park Avenue, Monterey Avenue, Cliff Drive, Portola Drive, East Cliff Drive, 7th/Lake Avenue, Murray Street, San Lorenzo River Levee, Front Street State Park Drive McGregor Drive Park Avenue Monterey Avenue Cliff Drive Portola Drive East Cliff Drive 7th Avenue/Lake Avenue Murray Street San Lorenzo River Levee Front Street

Appendix B: Phase I Bicycle Routes, Street Network

Route Reference	Route Type	Route Description	Street Network
Local Routes			
LR07	Local	Scotts Valley High School to Scotts Valley Town Center	Glenwood Drive, Scotts Valley Drive, Mt. Hermon Road
			Glenwood Drive
			Scotts Valley Drive
			Mt. Hermon Road
			Kings Village Road
LR08	Local	Natural Bridges State Beach to Downtown Santa Cruz	Delaware Avenue, Bay Street, West Cliff Drive, West Cliff Drive (trestle), Pacific Avenue, Front Street
			Delaware Avenue
			Bay Street
			West Cliff Drive
			West Cliff Drive (trestle)
			Pacific Avenue
LR09	Local	UCSC to Santa Cruz Wharf and Downtown Santa Cruz	Front Street
			Bay Drive, Bay Street, West Cliff Drive, West Cliff Drive (trestle), Pacific Avenue, Front Street
			Bay Drive
			Bay Street
			West Cliff Drive
			West Cliff Drive (trestle)
LR10	Local	Capitola Village to Natural Bridges State Beach	Pacific Avenue
			Front Street
			Bay Drive, Bay Street, West Cliff Drive, West Cliff Drive (trestle), Pacific Avenue, Front Street
			Bay Drive
			Bay Street
			West Cliff Drive
			West Cliff Drive (trestle)
			Pacific Avenue
			Front Street
			Capitola Avenue, Stockton Avenue, Cliff Drive, Opal Cliff Drive, 41st Avenue, East Cliff Drive, 7th/Lake Avenue, Murray Street, Beach Street, West Cliff Drive
			Capitola Avenue
LR11	Local	UCSC to Downtown Santa Cruz	Stockton Avenue
			Cliff Drive
			Opal Cliff Drive
			41st Avenue
			East Cliff Drive
			7th Avenue/Lake Avenue
LR11	Local	UCSC to Downtown Santa Cruz	Murray Street
			Beach Street
			West Cliff Drive
			High Street, High Street (pedestrian bridge), Sylvar Street, Mission Street, Pacific Avenue
			High Street
LR11	Local	UCSC to Downtown Santa Cruz	High Street (pedestrian bridge)
			Sylvar Street
			Mission Street
			Pacific Avenue
			Pacific Avenue

Appendix B: Phase I Bicycle Routes, Street Network

Route Reference	Route Type	Route Description	Street Network
LR12	Local	Capitola Village to UCSC	Capitola Avenue/Esplanade, Stockton Avenue, Cliff Drive, 47th Avenue, Topaz Street, Jade Street, Brommer Street, Arana Gulch Multi Use Path, Broadway, Laurel Street, King Street, Bay Street, Bay Drive
			Capitola Avenue/Esplanade
			Stockton Avenue
			Cliff Drive
			47th Avenue
			Topaz Street
			Jade Street
			Brommer Street
			Arana Gulch Multi Use Path
			Broadway
			Laurel Street
			King Street
			Bay Street
			Bay Drive
LR13	Local	Soquel Avenue to Seabright Neighborhood	7th Avenue, Murray Street
			7th Avenue
			Murray Street
LR14	Local	Pajaro Valley High School to Downtown Watsonville	Harkins Slough Road, Ford Street, Rodriguez Street
			Harkins Slough Road
			Ford Street
			Rodriguez Street
LR15	Local	Pinto Lake to Downtown Watsonville	Green Valley Road, Pennsylvania Drive, Main Street Path, Rodriguez Street
			Green Valley Road
			Pennsylvania Drive
			Main Street Path
			Rodriguez Street
LR17	Local	Soquel Drive to Capitola Village	Capitola Avenue

Appendix B: Phase I Bicycle Routes, Street Network

Route Reference	Route Type	Route Description	Street Network
Neighborhood Routes			
NR18	Neighborhood	Scotts Valley Drive to Scotts Valley Town Center	Bean Creek Road, Blue Bonnet Lane, Kings Village Road Bean Creek Road Blue Bonnet Lane Kings Village Road
NR19	Neighborhood	Mission Street to Laurel Street	Almar Avenue, Seaside Avenue, Acadia Avenue, California Street Almar Avenue at Mission Street Seaside Avenue Acadia Avenue California Street
NR20	Neighborhood	Westside Neighborhood Center to West Cliff Drive	Fair Avenue
NR21	Neighborhood	Soquel Avenue to East Cliff Drive	Cayuga Street, Buena Vista Avenue Cayuga Street Buena Vista Avenue
NR22	Neighborhood	New Brighton State Beach to Capitola Village	Kennedy Drive, Monterey Avenue Kennedy Drive Monterey Avenue
NR23	Neighborhood	Soquel Avenue to Seabright Neighborhood Center	Cayuga Street, Logan Street, Seabright Avenue Cayuga Street Logan Street Seabright Avenue
NR25	Neighborhood	Prospect Heights Neighborhood to Seabright Neighborhood Center	Prospect Heights, Park Way, to Arana Gulch Mult Use Path, Santa Cruz Harbor Prospect Heights La Fonda Avenue La Fonda Avenue/Park Way multi use pathway connector Park Way Arana Gulch Multi Use Path Santa Cruz Harbor Atlantic Avenue East Cliff Drive
NR27	Neighborhood	Live Oak Neighborhood to Seabright Neighborhood Center	Rodriguez Street, Jose Avenue, El Dorado Avenue, Brommer Street, Arana Gulch Multi Use Path, Santa Cruz Harbor, Atlantic Avenue, East Cliff Drive Rodriguez Street Jose Avenue El Dorado Avenue Brommer Street Arana Gulch Multi Use Path Santa Cruz Harbor Atlantic Avenue East Cliff Drive

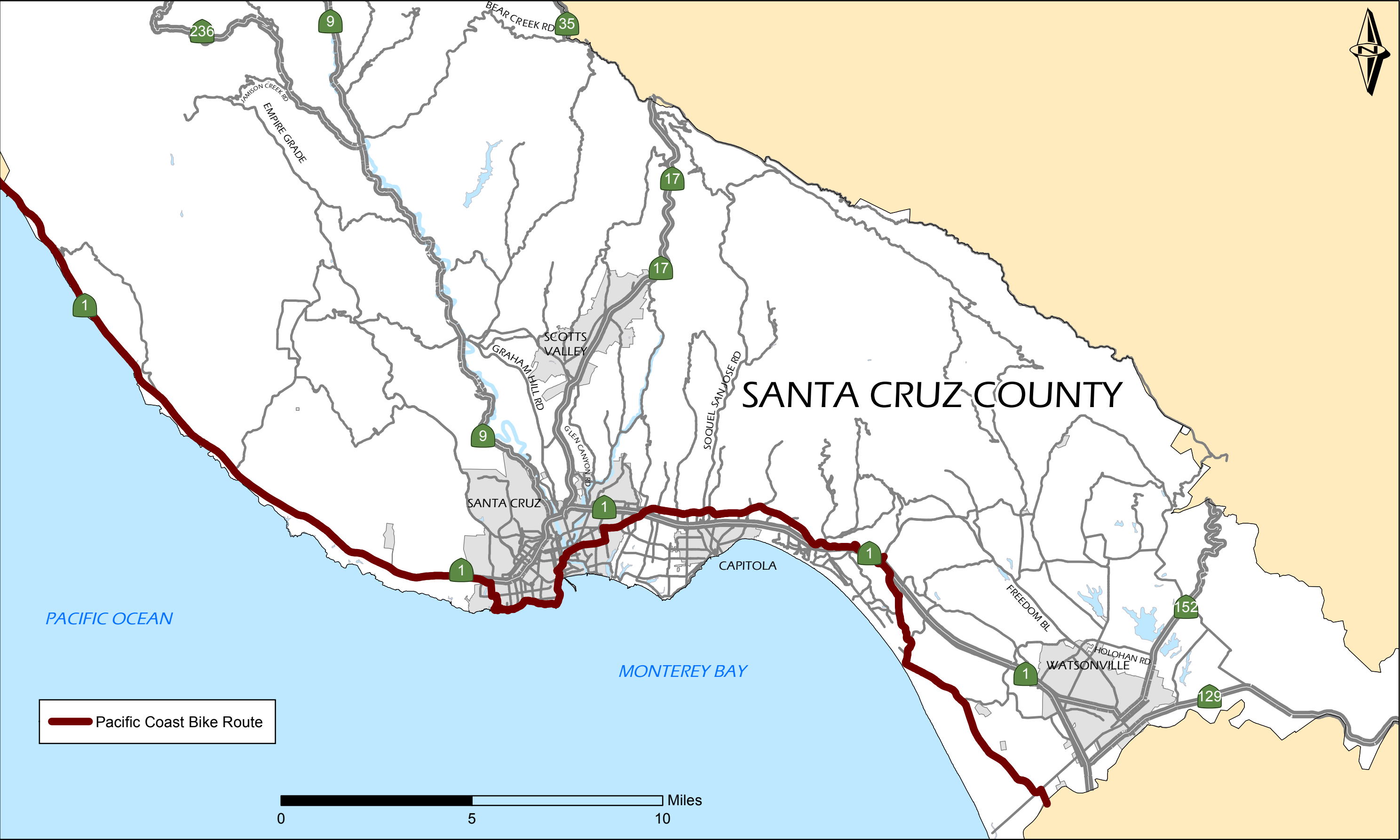
Appendix B: Phase I Bicycle Routes, Street Network

Route Reference	Route Type	Route Description	Street Network
NR29	Neighborhood	Capitola Road to Pleasure Point	30th Avenue, Roland Drive, 35th Avenue, Portola Drive, 37th Avenue, East Cliff Drive
			30th Avenue
			Roland Drive
			35th Avenue
			Portola Drive
			37th Avenue
NR31	Neighborhood	Clares Street to Capitola Village	East Cliff Drive
			46th Avenue, Capitola Road, 47th Avenue, Cliff Drive, Stockton Avenue, Capitola Avenue
			46th Avenue
			Capitola Road
			47th Avenue
			Cliff Drive
NR33	Neighborhood	Seacliff Neighborhood to Seacliff Village	Stockton Avenue
			Capitola Avenue
			Mar Vista Drive, Seacliff Drive, State Park Drive
			Mar Vista Drive
NR35	Neighborhood	Hall Middle School to Downtown Watsonville	Seacliff Drive
			State Park Drive
			Palm Avenue, Madison Street, 5th Street, Brennan, West 5th Street, Rodriguez Street
			Palm Avenue
			Madison Street
			5th Street
NR36	Neighborhood	Downtown Watsonville to Green Valley Commercial Center and Green Valley Road	Brennan Street
			West 5th Street
			Rodriguez Street
			Kearney Street, Lower Slough Trails, Ohlone Parkway, Upper Slough Trails, Pennsylvania Drive
			Kearney Street
			Lower Slough Trails
NR37	Neighborhood	Watsonville High School to Downtown Watsonville	Ohlone Parkway
			Upper Slough Trails
			Pennsylvania Drive
			East Beach Street, Lincoln Street, Maple Ave, 2nd, Rodriguez Street
			East Beach Street
			Lincoln Street
NR39	Neighborhood	Freedom Boulevard to Main Street	Maple Avenue
			2nd
			Rodriguez Street
			Arthur Road, Hammer Drive, Pennsylvania Drive, Main Street Path
			Arthur Road
			Hammer Drive
			Pennsylvania Drive
			Main Street Path

Appendix B: Phase I Bicycle Routes, Street Network

Route Reference	Route Type	Route Description	Street Network
NR40	Neighborhood	Freedom Boulevard to East Lake Avenue	Crestview Drive, Brewington Avenue, Martinelli Street
			Crestview Drive
			Brewington Avenue
			Martinelli Street
NR41	Neighborhood	Freedom Boulevard to Highway 129	Crestview Drive, Brewington Avenue, East Lake Avenue, Blackburn Street
			Crestview Drive
			Brewington Avenue
			East Lake Avenue
			Blackburn Street

Appendix C: Pacific Coast Bike Route



Pacific Coast Bike Route
Santa Cruz County Map