CHAPTER 2 Transportation Network

Setting

Santa Cruz County is one of 58 counties in the state of California, and one of the 15 counties bordering the Pacific coastline. Santa Cruz County is on the northern tip of the Monterey Bay and is 65 miles south of San Francisco, 35 miles north of Monterey, and 35 miles southwest of the Silicon Valley. The county's location is both a spectacular natural phenomenon and a limiting factor. The meeting of the redwoods and the sea is a powerful attraction which significantly affects the demand for housing, water, transportation and other infrastructure. The population of Santa Cruz County in 2017 was 276,603 according to the California Department of Finance estimates and the total area of the county is approximately 607 square miles with a land area of 445 square miles.

Transportation System

Santa Cruz County's transportation network includes facilities for private automobiles, transit, bicycles, pedestrians, specialized transportation for seniors and people with physical or mental disabilities, transport of goods and services, and emergency vehicles. Santa Cruz County's main transportation corridors and facilities (**Figure 2.1**) are limited by the area's physical barriers of mountains and the sea. Population settlement patterns are primarily centered along highways, major arterials, and the Santa Cruz Branch rail line. The backbone of the transportation system is the 1,137 total miles of roadway in the county. In the urban areas of the county, arterial roads, including major state highways, make up 14 percent of the roadway miles but carry over 72 percent of the vehicle miles traveled (VMT).[1]

Santa Cruz Metropolitan Transit District (METRO) buses serve approximately 400 miles of roads throughout the county and cover the majority of roads designated as arterial and collector routes.[2] There are 223 miles of bicycle lanes and bicycle paths which generally follow primary transportation corridors. Sidewalks and other pedestrian facilities are also an important part of the transportation network.

State Highways

There are seven state highways in Santa Cruz County – State Routes (SR) 1, 9, 17, 35, 129, 152 and 236 (**Figure 2.1**). Highways 1 and 17 have segments that are fully grade separated freeways. Caltrans manages the state highway system, and implements highway maintenance and safety projects. Because the cost of ongoing highway maintenance and operations, including safety projects, exceed the amount of funds available to Caltrans through the State Highway Operation and Protection Program (SHOPP), any additional highway projects, such as adding new travel lanes, new auxiliary lanes, or operational improvements, must be funded from other sources. This is challenging for our county because highway projects can be relatively expensive, especially compared to the region's share of funds. Additionally, truck and automobile traffic volumes are lower than in many areas of the state or nation, which can make it difficult to compete for state and federal funds. Santa Cruz County's local Measure D sales tax measure, passed in 2016, allocates a portion of the funds to three sets of auxiliary lanes on Highway 1 between Soquel Ave and State Park Drive as discussed below. Measure D funds provide a much needed local source of funds that could more readily leverage additional funds from state and federal sources. Along all highways except for SR 236, the RTC oversees a system of 75 call boxes that connect the user to an operator who will contact services needed (e.g. a tow service, or a relative/friend to assist you). Operation and maintenance of the Call Box Program is funded from a $1 vehicle registration fee collected by the Department of Motor Vehicles. The RTC also manages the Freeway Service Patrol Program which operates roving tow trucks on both Highways 1 and 17 primarily during peak commute or visitor periods to provide quick fixes or tows for stranded vehicles. Descriptions of each of the Santa Cruz County highways are provided below. For more information about the State Highway System within Santa Cruz County, see the Caltrans Transportation Concept Reports that can be accessed on the Caltrans District 5 website (http://www.dot.ca.gov/hq/tpp/corridor-mobility/d5-page.html).

Highway 1 Corridor

Highway 1 is the key thoroughfare running through the most heavily populated areas of the county. Between Watsonville and the City of Santa Cruz, it is a separated freeway with at least two lanes in each direction, with a few auxiliary lanes that connect on-ramps with the next off-ramps. Highway 1 has the highest average daily traffic volumes (number of vehicles) of all local streets and highways, connects the region with other coastal areas to the north and south, and is roughly parallel to Highway 101 for the middle stretch of the state. Highway 1 is also the county's premier access route to the coast. The rural sections of State Route Highway 1 in the coastal zone are scenic two-lane roads pursuant to California Coastal Act Section 30254. Over the past two decades a number of major capital projects have taken place on Highway 1 in the urban areas in addition to operational projects to improve access and traffic flow.

Past Highway 1 Projects

The **Highway 1 Mission Street** project, finished in 2004 at a cost of $10.5 million, provided several left turn lanes and two continuous lanes for the length of this main street-type stretch of the corridor through the west side of the City of Santa Cruz. This project helped to alleviate some of the traffic congestion along Mission Street Highway 1 which is exacerbated by its proximity to the University of California, Santa Cruz and the lack of alternative parallel routes. Additions such as lighting, pedestrian crossings, and undergrounding of utilities cost an additional $3.6 million. This project included extensive community input.

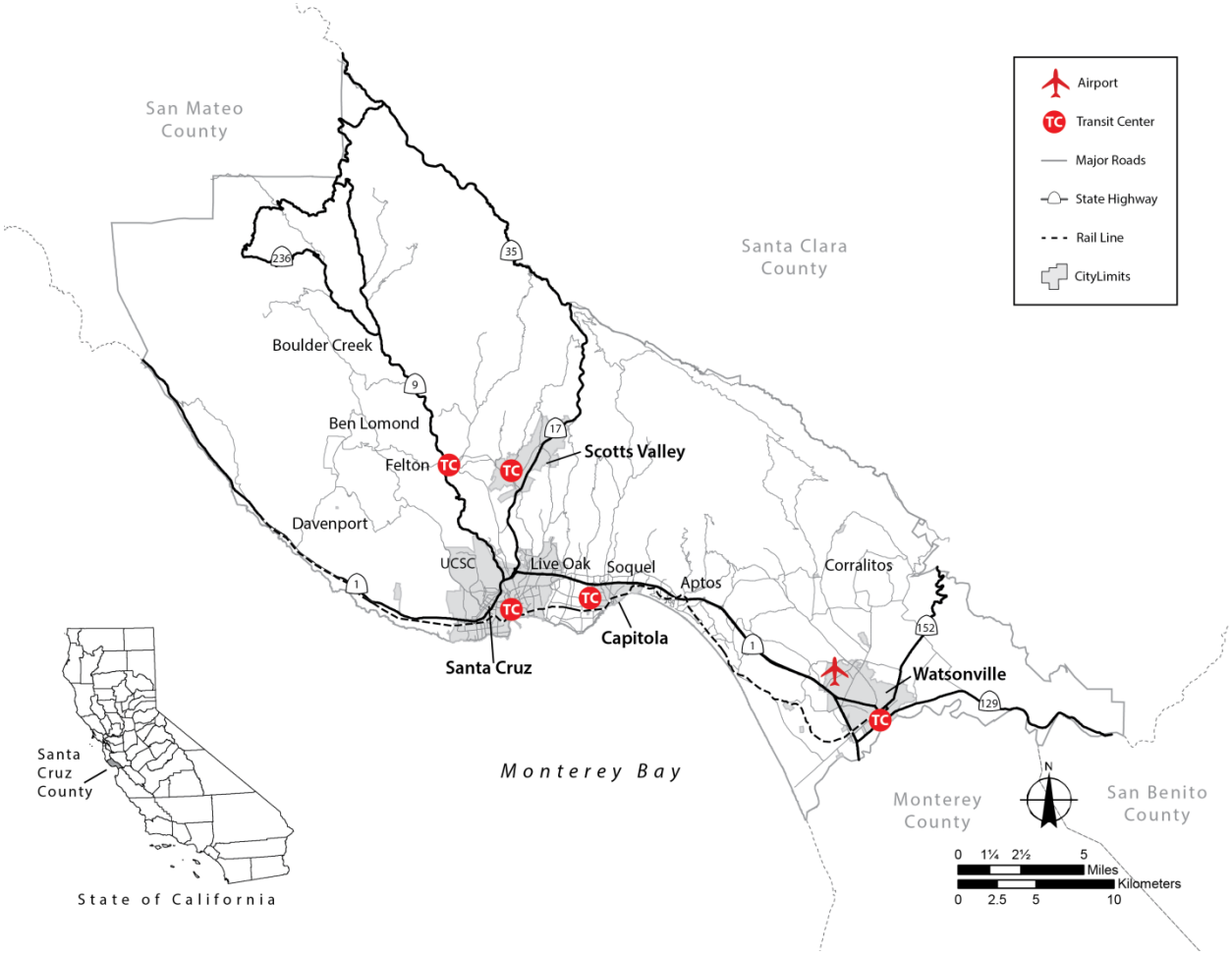


Figure 2.1 – Santa Cruz County Primary Transportation Network

Source: Santa Cruz County Regional Transportation Commission

The **Highway 1/17 Interchange Merge Lanes** project was a major project along the Highway 1 corridor. This project, completed in 2008 at a cost of $51 million, added merging lanes and sound walls between the junction of Highway 1/17 and the Morrissey Boulevard interchange. Auxiliary lanes in each direction provide longer and safer merging areas; installation of sound walls improves the quality of life for adjacent neighborhoods; and the reconstructed bridges provide improvements to the adjacent riparian corridors. The landscaping portion of the project, completed in 2010, included planting native trees and shrubs, and vines to cover the soundwalls, and installation of an irrigation system to help establish the

plants. Northbound Hwy 1 coming off the fishhook onto Highway 17 was widened in 2016 to accommodate another merge lane for improvements to safety.

In 2012 and 2013, the RTC managed the construction of the **Highway 1 Soquel/Morrissey Auxiliary Lanes** project which adds approximately one mile of auxiliary lanes, in both the northbound and southbound directions, between Soquel Avenue and Morrissey Boulevard. The La Fonda Avenue Bridge was rebuilt to make it wide enough for the new auxiliary lanes (and potentially HOV lanes in the future) and also to improve sidewalks and bicycle lanes across the bridge. The purpose of the project was to improve traffic flow by extending merging areas, shorten the bottleneck, and reduce vehicle delay on the corridor.

Funding for this project was awarded by the California Transportation Commission via a competitive process using Proposition 1B Corridor Mobility Improvement Account (CMIA) bond funds (approved by state voters in 2006) and the region's share of State Transportation Improvement Program (STIP) funds.

Highway 1 Corridor Improvement Project

Since the mid-1980s the RTC and Caltrans have analyzed options to reduce congestion, improve traffic flow, and increase carrying capacity and throughput in the Highway 1 corridor between Watsonville and the City of Santa Cruz. In 2003, the RTC approved use of state and federal funds to initiate preliminary design and environmental review for Highway 1 High Occupancy Vehicle (HOV) lanes between Morrissey Boulevard in Santa Cruz and San Andreas Road/Larkin Valley Road in Aptos.

The project has been divided into two components:

- Tier I - A long term, program level analysis for the future of the Highway 1 corridor between Santa Cruz and Aptos. The Tier I concept for the corridor could be built over time through a series of smaller incremental projects (referred to as Tier II projects).
- Tier II - Project level analysis of a smaller incremental project within the Tier I corridor which would move forward based on available funding. Each of the Tier II projects would have independent utility and benefit to the public and Highway 1 operations.

Three scenarios are being evaluated as part of the Tier I program level environmental analysis to identify the long term vision for the Corridor:

The High Occupancy Vehicle (HOV) Lane Alternative – adds a bus and carpool lane in both the north and southbound direction for the nine mile corridor; includes auxiliary lanes (connecting on-ramps with the next off-ramps) between most interchanges and metering lights on the on-ramps

The Transportation System Management (TSM) Alternative – includes auxiliary lanes (connecting on-ramps with the next off-ramps) between most interchanges and metering lights on the on-ramps

The No Build Alternative

The current Tier II project under environmental review includes north and southbound auxiliary lanes between 41st Avenue and Soquel Drive and a bike/pedestrian overcrossing of Highway 1 at Chanticleer Avenue.

The draft Tier 1 (program level) Highway 1 Corridor Investment program environmental analysis, plus a Tier 2 (detailed) environmental analysis for the 41st Avenue/Soquel Drive Auxiliary Lanes Project and Chanticleer Ave pedestrian/bicycle overcrossing was released for public review in 2015. Over 900 comments were received for which responses are required as part of the final environmental document. In review of the comments received and the changes in regulatory guidelines and requirements, the project team is updating sections of the report. The Highway 1 Tier I/Tier II Environmental Impact Report/Environmental Assessment is scheduled to be finalized in late 2018 or early 2019.

Existing federal, state, or local funding does not cover the cost to operate, maintain, and improve the existing transportation system. Measure D, a ½-cent, 30-year sales tax measure passed in November 2016 by over 2/3 of Santa Cruz County voters. Measure D can supplement historic funding sources to improve the quality of our transportation infrastructure and services in the county.

The Highway Corridors portion of Measure D provides approximately $150 million for highway corridors over the 30 year life of the measure for the following projects:

- auxiliary lanes between:
    - Soquel Drive and 41st Avenue
    - Bay Ave/Porter St and Park Avenue
    - Park Avenue and State Park Drive
- 2 new bicycle and pedestrian bridges over Highway 1
    - In Live Oak at Chanticleer Avenue
    - In Seacliff/Aptos at Mar Vista Drive
- ongoing safety and operational services including Freeway Service Patrol, Safe on 17, and Cruz511

Highway 17 Corridor

Highway 17 traverses the Santa Cruz Mountains with 2 lanes in each direction, connecting the county with Silicon Valley and the rest of the San Francisco Bay Area. Because Highway 17 straddles both Santa Cruz and Santa Clara Counties, duties such as maintenance, enforcement, transit, safety improvements, and public education are shared by entities on both sides of the summit of the Santa Cruz Mountains. Due to the steep terrain, curves, and high numbers of traffic incidents, a Safe on 17 Task Force was formed in 1998. Components of the Safe on 17 program include additional enforcement by California Highway Patrol to help enforce posted speed limits, construction projects by Caltrans to improve operational efficiency, and a public information and education campaign. Additionally, call boxes and changeable message signs were installed, and the Freeway Service Patrol (FSP) service was initiated.

An Access Management Plan was conducted for State Route 17 by Caltrans in partnership with Santa Cruz County and RTC. The plan identified issues and imbalances on the SR 17 corridor between Granite Creek Road in Scotts Valley and Summit Road at the Santa Cruz/Santa Clara County line through stakeholder engagement. Short and long term access management strategies were identified to address access, mobility and safety needs to help preserve Highway 17 as an efficient interregional corridor.

Highway 9

Highway 9 is a mountainous road connecting Santa Cruz to towns in the San Lorenzo Valley as well as providing another route over the Santa Cruz Mountains to Saratoga and Los Gatos in Santa Clara County. Through San Lorenzo Valley, the highway acts as a main street for the communities of Felton, Ben Lomond, and Boulder Creek. A complete streets plan was prepared by RTC in partnership with Caltrans and County of Santa Cruz for Highway 9 and connecting county roads through San Lorenzo Valley (SLV) that identifies and prioritizes implementation of the most critical and cost effective transportation projects. This plan focuses on safety for pedestrians, bicyclists and motorists; access to schools, businesses, and bus stops; traffic operations, pavement conditions, drainage and other needs in this travel corridor. Projects have been prioritized that can be implemented in the short and mid-term to address transportation challenges on the corridor. Measure D, which was approved by voters in November 2016, includes $10 million specifically earmarked for high priority transportation projects along the Highway 9 corridor. Plans for reducing congestion through the Highway 1 and Highway 9 intersection, just south of the Mission Street segment of Highway 1, are currently under development by the City of Santa Cruz.

Highways 236 and 35

Highway 236 is a total of 18 miles and makes a loop connecting Highway 9 in Boulder Creek to Big Basin Redwoods State Park. A significant portion of the highway is one lane in each direction and passes through densely forested areas. Highway 35, often referred to as “Skyline Boulevard” is a two-lane road running mostly along the ridge of the Santa Cruz Mountains weaving between Santa Cruz County and Santa Clara County. Because of its scenic views and winding roadway, Highway 35 sees substantial recreational motoring and bicycling use. The winter storms of 2016/2017 washed out a section of Highway 35 near Highway 9 that made the highway impassable. It is unknown when this roadway will be repaired.

Highway 129 and 152

Highways 129 and 152, doubling as main streets through the City of Watsonville, connect south Santa Cruz County with neighboring counties, Highway 101 and the Central Valley to the east. On the western edge, Highway 152 begins at Highway 1 and is named Main Street through the City of Watsonville, then heads up and over the Hecker Pass and county line to Gilroy in Santa Clara County and beyond. The City of Watsonville is discussing with Caltrans options to provide context-sensitive design to enhance “walkability” and the main street character of the roadway, while maintaining operational efficiencies in the corridor. Highway 129 traverses the southern portion of the City of Watsonville and connects with Monterey County near Aromas, providing an important link to Highway 101 near San Juan Bautista. Highway 129 is heavily used for goods movement, particularly for agricultural products as this is the link from Santa Cruz County to Highway 101, a major goods-movement corridor. Caltrans has made numerous improvements to Highway 129 in recent years, including curve realignments, turnouts, additional signage, improved striping and an increased number of roadway reflectors.

Local City and County Street Network

Local streets and roads -- including nearly 900 miles of roads, bridges, curbs and gutters, sidewalks, access ramps, bicycle lanes, stop signs and traffic signals -- are critical components of the region's transportation system. The majority of travel, whether by car, bicycle, bus or foot, is done on local streets and roads. From the moment we open our front door to drive, bike, walk, or bus to work, school, the store, medical facilities or other destinations, we are dependent upon our local streets and roads. Increasingly, local streets and roads reflect 'Complete Streets' that focus on the movement of people, including non-drivers of all ages and abilities, and the variety of travel modes they may use.

The cities of Capitola, Santa Cruz, Scotts Valley and Watsonville and the County of Santa Cruz are responsible for maintaining and improving this multimodal network in Santa Cruz County. However, with such a large network and limited revenues, local jurisdictions are challenged to maintain, reduce congestion through, and add pedestrian and bicycle facilities to the multimodal local street and road network. Each of the five local jurisdiction public works departments rates the condition of their roadways using a Pavement Condition Index (PCI) to better understand the condition of their jurisdiction's road system and prioritize improvement projects. A PCI of 100 is in premium condition, and the optimum score is 70 or greater. The cost to rebuild roadways with lower PCI scores increases exponentially. **Figure 2.2** shows the average PCI for each jurisdiction.

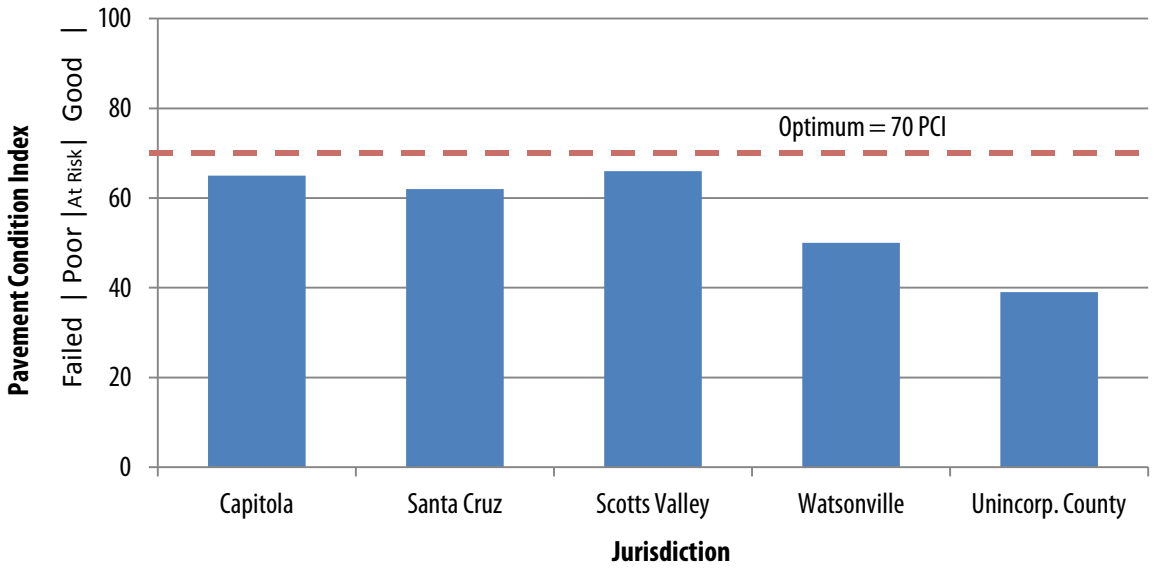


Figure 2.2 – Average Pavement Condition for Local Jurisdictions

Source: Public Works Departments of Santa Cruz County, City of Santa Cruz, Watsonville, Scotts Valley, Capitola. Data collected from 2017.

Transit

Public transit is operated locally by the Santa Cruz Metropolitan Transit District (METRO). Three main types of services provided by METRO are local fixed-route bus service, Highway 17 Express Bus service and ParaCruz services (**Figure 2.3**). METRO operates 26 fixed bus routes on approximately 400 miles of roads. Roadways through the more urban areas where frequency of service is 15 minutes or less is shown in **Figure 2.3**. METRO operates four transit centers in the Santa Cruz County area, including the Santa Cruz METRO Center in Downtown Santa Cruz, the Capitola Mall Transit Center, the Watsonville Transit Center, and the Cavallaro Transit Center in Scotts Valley (**Figure 2.1**).

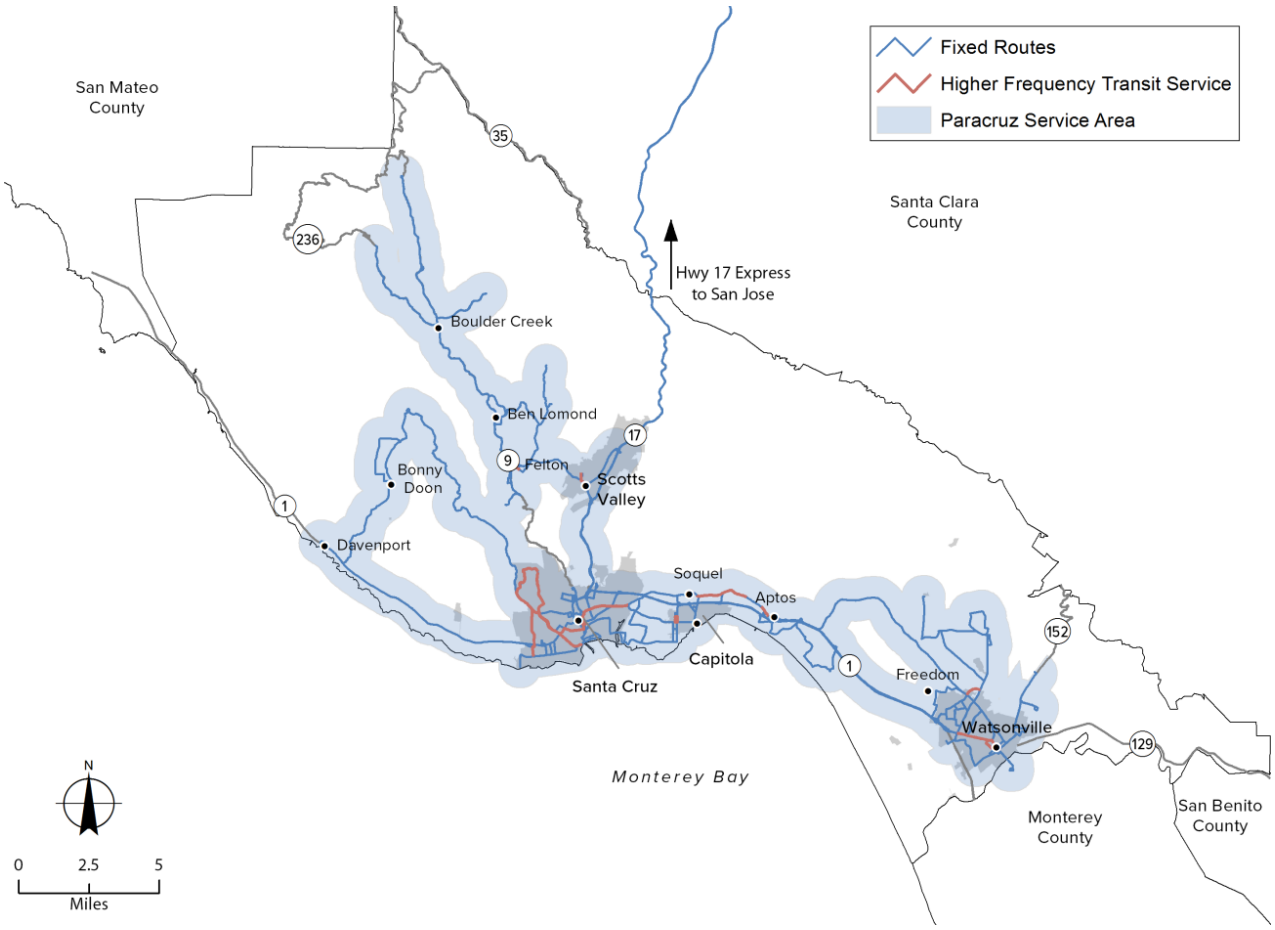


Figure 2.3 – Transit Service Provided by Santa Cruz Metropolitan Transit District (METRO)

Source: Santa Cruz County Regional Transportation Commission and Santa Cruz Metropolitan Transit District, 2018

Photo Credit: Santa Cruz Metropolitan Transit District

Trip planning for METRO's fixed route system is available through Google Transit and METRO's Customer Service Department. METRO has a fare card system which allows prepayment of bus fares to speed boarding times and increase customer convenience. The 'Cruz Pass' card can store one of the many different time period passes offered by METRO such as one-day and 31-day passes for express or local buses. The 'Cruz Cash' card can store a monetary value and be used for different ride types at the time of boarding. Funding for METRO is provided by fares, two local sales taxes (including funds from Measure D), Transportation Development Act (TDA) funds and various state and federal dollars. This funding mix for local public transit is similar to that of other public transit systems across the state and the nation.

Santa Cruz County is also connected to Monterey County by bus service provided by Monterey-Salinas Transit (MST) and to other parts of the state by Greyhound interregional bus services. The Highway 17 Express Bus – which is operated jointly by METRO, Amtrak and the Santa Clara Valley Transportation Authority (VTA) – provides a connection to the San Jose train station which serves the southern part of the San Francisco Bay Area and regional passenger train services (see rail section for details).

Specialized Transportation

Many seniors and people living with disabilities need specialized transportation services to get around Santa Cruz County. This might include lifts or ramps for wheelchairs in vehicles, drivers with special training, or vehicles that kneel or are equipped with other accessible features. The RTC produces a Guide for Specialized Transportation Services that is regularly updated. Included is information about eligibility, schedule, service area, and fee information for over 30 transportation providers or agencies in Santa Cruz County.

The Americans with Disabilities Act (ADA) mandates that complementary paratransit service be provided for people unable to use the fixed route transit due to physical, cognitive and/or psychiatric disabilities. In our region, the ADA-mandated service is ParaCruz and is provided by Santa Cruz Metropolitan Transit District (METRO). METRO ParaCruz provides service to any destination within Santa Cruz County that is within three-quarters (¾) of a mile of an operating bus route. This service is a shared ride service arranged in advance. The fare is $4 in 2017 (twice the adult fixed route cash fare, as allowed by law).

Another main provider is Community Bridges Lift Line. This non-profit provides or contracts a range of services including local and out-of-county medical transportation, senior center/meal site delivery, bed-to-bed medical, veterans medical transportation and taxi scrip. As the area's designated Consolidated Transportation Services Agency, Community Bridges has a responsibility to work toward consolidating and coordinating specialized transportation services to avoid inefficient and duplicative social service transportation programs. Many of the rides provided by Lift Line are to individuals who are unable to afford ParaCruz or because their origin and/or destination are outside the ParaCruz service area.

Other Providers

Although Metro ParaCruz and Lift Line are the two primary providers of specialized transportation services in the county, other service providers also exist. Non-profit or private for-profit entities, such as the Volunteer Center, Veterans Services, local taxi companies, and First Transit operate specialized transportation services. Each particular service program fills a unique niche for, or offers discounted services to, seniors and people with disabilities.

Identifying Needs

To gain a better understanding about potential deficiencies, the RTC conducts a regular process to solicit input about unmet specialized transportation needs in the community. Social service entities, non-profits, local transportation providers, community organizations and human service advocates, as well as members of the public identify gaps and needs in human service transportation. Input from all these and other sources is incorporated into the development of the RTC Unmet Needs List and federally-mandated Monterey Bay Region Coordinated Public Transit-Human Services Transportation Plan. The most recent version of the Coordinated Plan was finalized in 2013. The plan incorporates these identified needs and presents innovative implementation strategies for closing the gaps and improving the management of mobility services. These strategies help prioritize available funding. The Coordinated Public Transit - Human Services Transportation Plan, which is an element of the Metropolitan Transportation Plan prepared by AMBAG, is available online at www.ambag.org.

Rail

Local Corridor

On October 12, 2012, after more than ten years of extensive due diligence and negotiations, the RTC became the owner of the Santa Cruz Branch Rail Line, thereby placing this cross-county transportation corridor into public hands. The RTC purchased the rail corridor on behalf of the community to preserve the corridor for existing and future transportation uses, including freight rail, passenger rail service/transit, and bicycle and pedestrian facilities. The passage of Measure D requires an analysis to determine the future potential use to better serve Santa Cruz County residents and visitors. The Unified Corridor Investment Study is currently underway to perform an analysis of the options for transportation uses of the rail right-of-way.

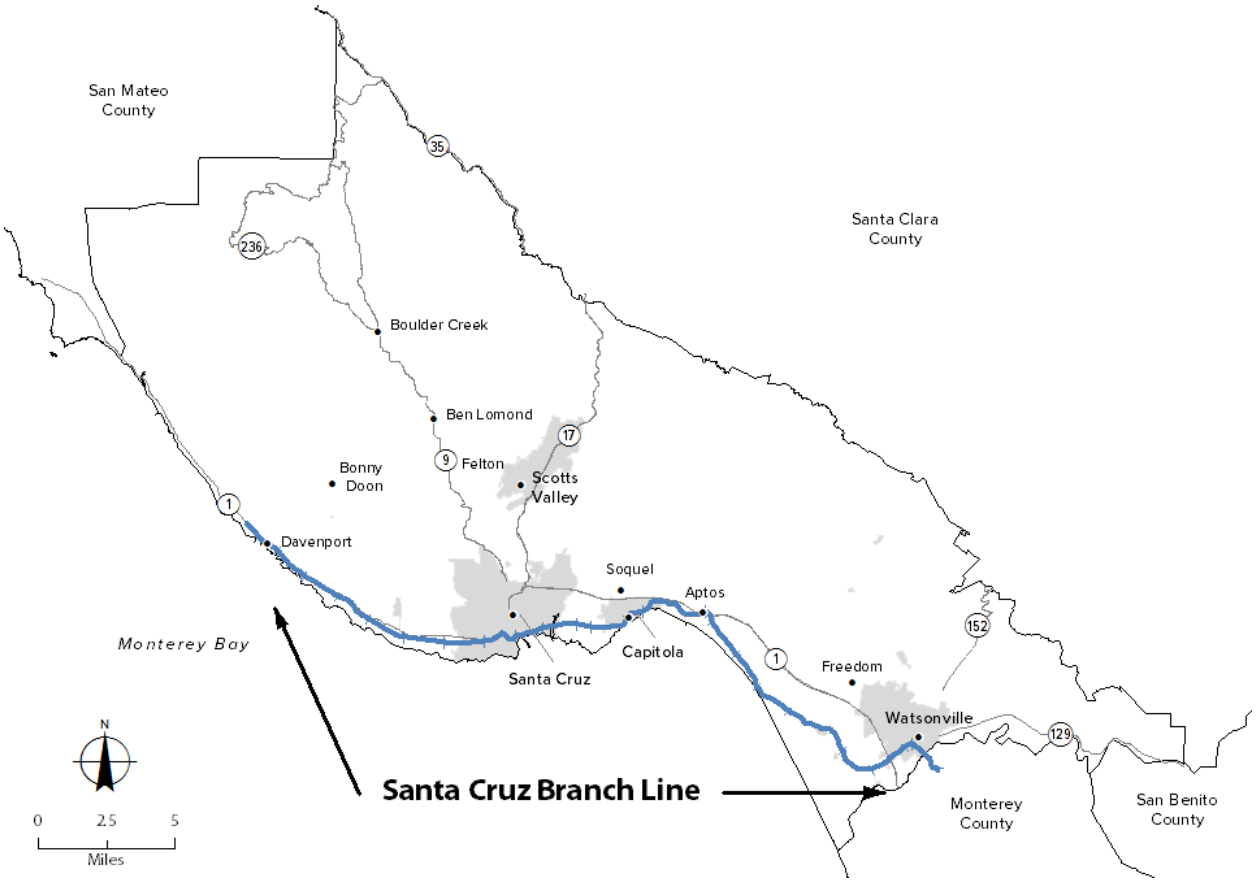


Figure 2.4 – Santa Cruz Branch Rail Line

Source: Santa Cruz County Regional Transportation Commission

This 135-year old transportation corridor parallels Highway 1, extending almost 32 miles from just south of the county line near Watsonville, to Davenport in north Santa Cruz County (**Figure 2.4**). The right-of-way is generally 50 to 60 feet wide with 37 bridges and trestles, including major crossings of the Pajaro River, Highway 1, Soquel Creek, the Santa Cruz Yacht Harbor and the San Lorenzo River. Adjacent land uses include residential, commercial, industrial, agricultural, and park land/open space. The corridor links major activity centers as it traverses downtown Watsonville, Aptos Village, Capitola Village and the Santa Cruz Beach area near downtown Santa Cruz. Also adjacent to the corridor are many parks and recreational facilities, including: Manresa State Beach, Seacliff State Beach, New Brighton State Park, Simpkins Swim Center, Santa Cruz Yacht Harbor, Natural Bridges State Park and Wilder Ranch State Park. The rail corridor enhances public access to the Monterey Bay National Marine Sanctuary at several key locations consistent with the CA Coastal Act objectives.

On May 17, 2012, the RTC selected Iowa Pacific Holdings as the new operator for the Branch Line. The company, operating freight and excursion passenger service on the Santa Cruz Branch Rail Line under the name Santa Cruz & Monterey Bay Railway (SC&MB), is responsible for operation and general maintenance of the track and rail equipment.

Currently freight service operates from the western boundary of the City of Watsonville along West Beach Street east to the town of Pajaro connecting to the Union Pacific main line. Goods shipped on the rail line in 2017 include construction materials, agricultural products, and raw materials for biofuel production. Freight growth is projected to double in the next 20 years, representing a more significant increase than population growth. [3] Shipping goods on the rail network is more efficient, cost effective and emits one-third less greenhouse gas (GHG) than trucks.[4] One gallon of diesel fuel can move one ton of freight 480 miles by rail.[5]

As part of the purchase agreement between the RTC and the previous property owner, Union Pacific, funding was set aside to upgrade a number of structures on the line. The La Selva Beach trestle was the most extensive of the four bridges upgraded with those funds. The upgrades to the four bridges were completed in 2015. Also in 2015, the RTC completed a report to assess the feasibility of rail transit using the Santa Cruz Branch Rail Line to expand access and mobility, enhance the environment and support economic vitality. The study analyzed a range of public transportation service scenarios and how well each scenario advances community goals and objectives. The project provided capital and operating cost estimates and potential sources of funding. Public input was solicited throughout the project development. The final report was completed in 2015.

The Felton Branch Rail Line owned by Roaring Camp Railroads connects to the Santa Cruz Branch Rail Line near the Santa Cruz Wharf and extends up the San Lorenzo Valley to Felton. Roaring Camp Railroads operates excursion and seasonal passenger rail service between Felton and Santa Cruz during the summer and during the end of the year holidays and also provides freight rail service to the San Lorenzo Valley area when needed.

2018 California State Rail Plan

The 2018 California State Rail Plan[6] establishes a statewide vision describing a future integrated rail system that provides a faster, more frequent and connected service for moving both people and goods. A statewide rail system offers a viable alternative to driving for both local and long distance trips for all populations, including those who lack access to or cannot afford automobiles, and for people who choose not to drive. The Rail Plan vision provides a framework for realizing the full potential of our existing rail network while reducing greenhouse gas emissions and helping to reduce highway congestion. As shown in **Figure 2.5**, the Santa Cruz Branch Rail Line links to existing and proposed new passenger rail services on the state rail corridor – extending from San Diego to states north of California. The 2022 regional goals of the plan include a station at Pajaro/Watsonville and an analysis of opportunities to improve connections between Santa Cruz, Monterey and the High Speed Rail Line at Gilroy. The mid-term 2027 goals include implementation planning for connecting Santa Cruz and Monterey to the statewide rail network at Gilroy and establishment of hourly service by 2040, if recommended by the 2022 study.

The Transportation Agency for Monterey County is actively pursuing rail service that includes local service as well as greater regional access. Regional service would entail an extension of the Capitol Corridor train system from Sacramento through the San Francisco Bay Area, to Salinas with a stop at Pajaro Station and Castroville. Local light rail service would connect the cities of Seaside and Monterey to Castroville for connections to Pajaro Station and the San Francisco Bay Area and beyond.

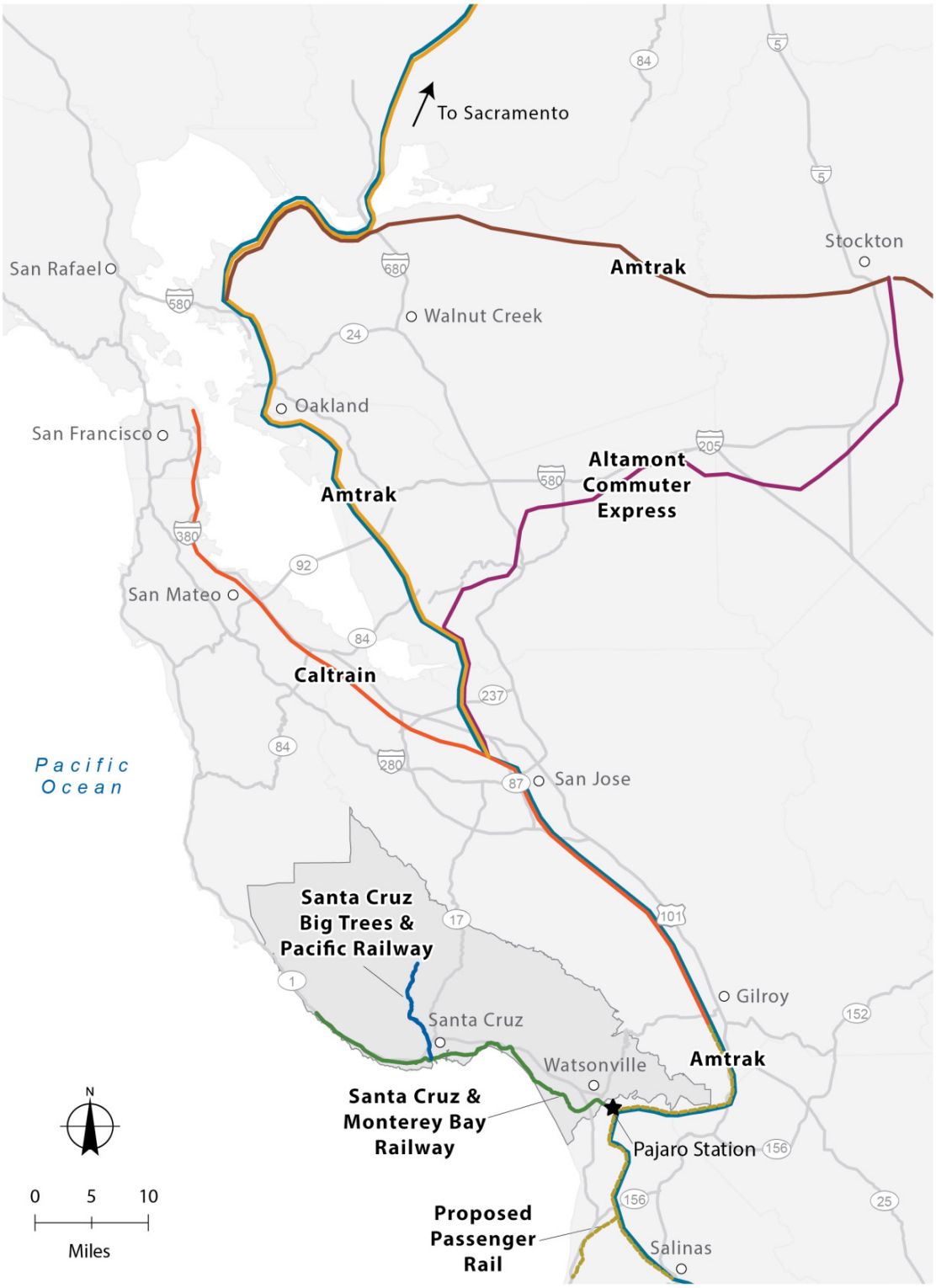


Figure 2.5 – Regional Rail Network Surrounding Santa Cruz County

Source: Santa Cruz County Regional Transportation Commission

Photo Credit: Howard Cohen

There are four existing passenger rail services accessible by traveling to neighboring counties. Amtrak provides interstate and cross country train connections with daily service on the Coast Starlight between Vancouver, WA and San Diego, CA with stops in San Jose and Salinas. Caltrain provides commuter service to cities along the peninsula between San Francisco and San Jose with an extension to Gilroy. The Altamont Corridor Express (ACE) provides weekday service between Stockton and San Jose. The Capitol Corridor provides daily service between San Jose and Sacramento/Auburn. The closest access point for all four trains is the San Jose Diridon Station, which can be reached using the Highway 17 Express Bus. For south county residents, Caltrain's Gilroy or Amtrak's Salinas station may be equally close.

A new Amtrak train between northern and southern California called the Coast Daylight is also in the planning phases. The current proposal includes one round trip per day in each direction, with a station stop in Pajaro.

High Speed Rail Plans

Construction of the first segment of high-speed rail is well underway. The construction of Phase 1 began in 2015 and will connect the San Francisco Bay Area to the Los Angeles Basin through the Central Valley. The project is funded in part by Proposition 1A, a bond measure passed by California voters in 2008. According to the State, "California high-speed rail will connect the mega-regions of the state, contribute to economic development and a cleaner environment, create jobs and preserve agricultural and protected lands. By 2029, the system will run from San Francisco to the Los Angeles basin in under three hours at speeds capable of over 200 miles per hour. The system will eventually extend to Sacramento and San Diego, totaling 800 miles with up to 24 stations."[7]

The closest stations for Santa Cruz County residents will be San Jose or Gilroy. Once high speed rail service is completed, transit connectivity to these stations will be essential in order for Santa Cruz County residents to fully benefit from this new rail system. High Speed Rail will provide important transportation alternatives for travel between San Francisco and Los Angeles.

Figure 2.6 – Proposed California High Speed Rail Line

Source: California High Speed Rail Authority

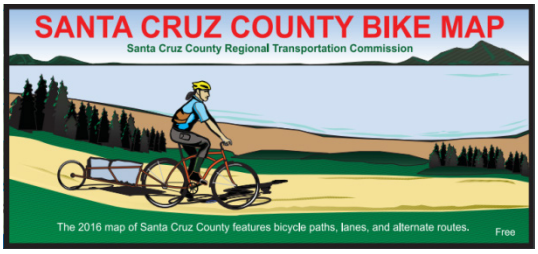
Active Transportation

Bike Network

The region has an extensive network of bike lanes and paths for commuters and recreational riders. Currently, Santa Cruz County boasts 223 miles of bikeways: 196 miles of bike lanes and 27 centerline miles of separated paths. Bike lanes can be found on most arterials and collector roads and there are an increasing number of separated bike paths and bikeways on low traffic volume neighborhood streets. Bicycle parking, including bicycle racks and lockers, are located throughout the county.

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 people in our community. The RTC has a Bicycle Advisory Committee which reviews RTC-funded bicycle projects and programs and advises the RTC and other entities on bicycle related issues.

Bicycle Resources and Programs. There are numerous resources and programs that educate people about bicycling and encourage them to bike in Santa Cruz County. One of the most popular outreach materials produced by the RTC is the Bicycle Map featuring bicycle paths, lanes, and alternate routes throughout the county. This map is available in a printed or electronic format from the RTC's website. The Bicycle Map contains information on bicycling resources and rules of the road in both English and Spanish.



In addition, there are several ongoing events promoting bicycling and bicycle safety. The RTC has been a primary funder of Ecology Action's Bicycle to Work/School events, which are held twice a year. The events include activities at schools, coffee shops and other sites around the county and draw about 13,000 participants per year. Open Streets events - which temporarily divert automobile traffic and open entire roadways for people to bike, walk, skate in a safe and festive environment –have been occurring annually in a number of locations throughout the county.

The Community Traffic Safety Coalition, partially funded by the RTC, provides ongoing bicycle safety classes, outreach and education programs countywide. Ecology Action's bicycle safety programs geared toward elementary school and pre-school children such as Boltage, "Bicycle Traffic School," and BikeSmart are also funded in part by the RTC.

Pedestrian Facilities

Whether walking to the bus stop, from a parking spot into work, or home from school, everyone is a pedestrian for some portion of their trip. The existing pedestrian network consists of sidewalks built by developers in conjunction with construction projects, private property owners, and by local jurisdictions as part of roadway projects. Ways in which local jurisdictions work towards expanding the pedestrian network is by constructing sidewalks and curb cuts in conjunction with new and redeveloped streets, considering pedestrian access in new designs, filling gaps in the sidewalk network, and working closely with the public to identify where existing pedestrian facilities need attention. In some areas, local jurisdictions are implementing projects to slow vehicular traffic and create more attractive pedestrian facilities. In recent years, more emphasis is being placed on the benefits of "walkability." Sidewalks and pedestrian-friendly amenities – such as wide sidewalks, crosswalks, curb cuts, landscaping/buffers and benches – are seen as beneficial additions which make communities friendly and livable.

Despite a more recent focus on the community and personal, economic and health benefits of pedestrian travel, extensive gaps and other deficiencies in the pedestrian network still exist. The condition of a sidewalk can constitute a barrier, particularly if there are cracks, lifts, vegetation or other obstructions. Universal access standards are focused on the ease of access for pedestrian facilities, particularly for people with mobility impairments.

Additionally, property owners, not the cities and county, are responsible for maintaining sidewalks in front of their properties and are often unaware or slow to make needed repairs. Currently a significant portion of the county's pedestrian facilities are not mapped. As additional information about the existing pedestrian network is available, agencies will be able to increase the quality of these facilities, particularly near activity centers.

Identifying Needs

Bicycling. In addition to several major bicycle projects identified individually in the Regional Transportation Plan (RTP), several local jurisdictions have developed Bicycle Plans or Active

Transportation Plans to guide implementation of local policies and funding to support bikeway development, maintenance and support facilities. Members of the general public, RTC's Bicycle Committee, the City of Santa Cruz's Transportation Commission, the Community Traffic Safety Coalition, and other entities continue to assist local jurisdictions with prioritizing and promoting local bicycle programs and facilities.

Pedestrian. A number of groups are working collaboratively to improve the pedestrian network. The goal of the RTC's Elderly & Disabled Transportation Advisory Committee's Pedestrian Safety Work Group is to "ensure safe and accessible pedestrian travel and access throughout the county for the benefit of all residents." The Work Group has been actively engaged in the following:

- analyzing pedestrian facilities around priority origin and destination locations,
- assisting in the identification/implementation of improvements to encourage greater transit use and ensure safe/accessible pedestrian travel throughout the region, and
- conducting an outreach campaign to encourage private property owners to maintain the condition of sidewalks adjacent to their property, as required by California law.

The group also focuses on improving pedestrian safety through educating the public about the rules and typical behaviors relevant to pedestrians, bicyclists and motorists. The group has produced brochures titled "What Pedestrians Want Motorists to Know & What Motorists Want Pedestrians to Know" and "What Pedestrians and Bicyclists Want Each Other to Know."

The Community Traffic Safety Coalition enlists volunteers to complete an annual Pedestrian Safety Observation Survey. The purpose of the study is to track key pedestrian and motorist behaviors that contribute to increased risk of pedestrian injury and fatality. Over 2,800 pedestrians were observed in the 2015 survey. Observations were made at 18high traffic pedestrian crossings throughout the county.

Bicycling/Pedestrian. An online interactive Hazard Report on the RTC's website provides a forum for bicyclists and pedestrians to report deficiencies in the network. Individuals can use this form to report hazards that may inhibit bike or pedestrian travel – such as rough pavement, vegetation, drainage issues, traffic signal problems, gaps in the system, and construction obstacles. Completing the form alerts local jurisdictions or the appropriate property owner of the issue.

Entities such as local jurisdictions, the Community Traffic Safety Coalition and Ecology Action are working on improving Safe Routes to School in response to the high numbers of parents driving their children to school. The Safe Routes to School Program brings together parents and traffic engineers at individual school sites to develop infrastructure and traffic flow improvements, and recommend routes for walking and biking. In recent years, this program has developed maps indicating safe routes to school for several local elementary schools.

Caltrans is also actively planning for a multi-modal transportation network to guide the development of non-motorized transportation facilities. In 2017, the first California State Bicycle and Pedestrian Plan, *Toward an Active California* was completed (http://www.dot.ca.gov/activecalifornia/theplan.html). This report lays out an ambitious plan to achieve statewide goals to double walking and triple bicycling trips by 2020.

Bicycle and Pedestrian Projects Underway

Monterey Bay Sanctuary Scenic Trail Network (MBSST). In late 2013, the RTC approved the Final Master Plan for the Monterey Bay Sanctuary Scenic Trail Network (MBSST). Master Plans for the trail in both Santa Cruz and Monterey Counties identify how a bicycle and pedestrian pathway will eventually arc the Monterey Bay coastline providing non-motorized coastal access for walkers, joggers, cyclists, people with mobility impairments, families, locals, and visitors. In Santa Cruz County, the 50 mile network can be constructed in segments as funding becomes available. The spine of the trail network in Santa Cruz County will run within the 32-mile rail right-of-way (**Figure 2.7**). Trail spurs provide a braided network with coastal access connections to schools, retail centers, residences and other destinations. Sections of the MBSST Network may be designated as part of the California Coastal Trail (CCT). The CCT is a network of public trails that will extend the entire 1200-mile length of the California Coast and currently is more than half complete. Thirteen miles of projects along the rail right-of-way have been funded in full or in part with construction to begin as soon as design, engineering and environmental permitting are completed. These projects include the north coast from Davenport to Wilder Ranch; the west side of Santa Cruz from Natural Bridges Dr to the Santa Cruz Wharf; the City of Watsonville from Lee Rd to Walker St, and from the Santa Cruz Boardwalk to 17th Ave. The first project on the west side of Santa Cruz is scheduled to be completed in 2018.

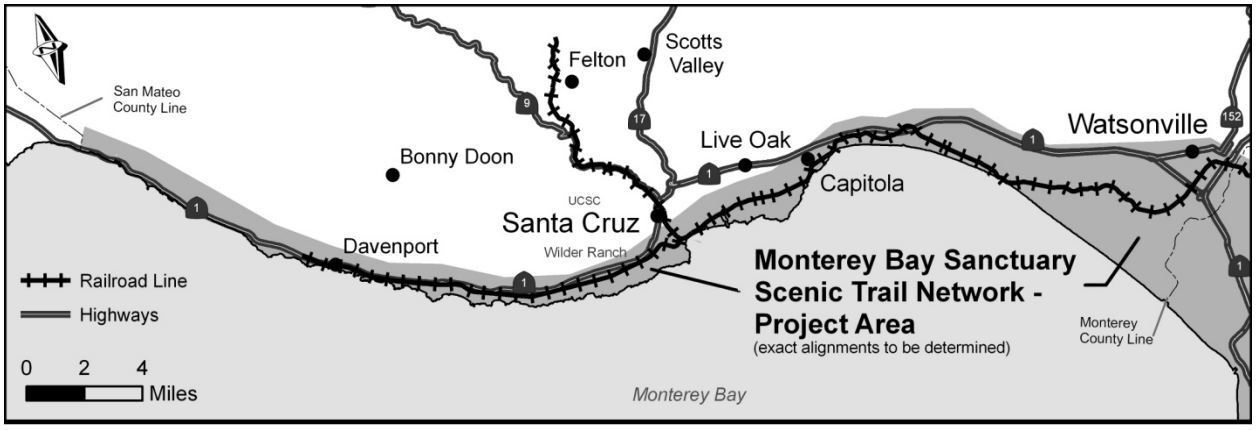


Figure 2.7 – Monterey Bay Sanctuary Scenic Trail Network Map

Source: Santa Cruz County Regional Transportation Commission

Wayfinding Signage. A county-wide bicycle route and way-finding signage program is under development with funds secured by the RTC. This program will be implemented in coordination with the Monterey Bay Sanctuary Scenic Trail Network, as well as the California Coastal Trail, Pacific Coast Route and Caltrans sign requirements.

Other. Bicycling and walking is also facilitated by Safe Routes to School efforts, the UCSC Bicycle Trailer which provides a ride up the hill to campus, and local jurisdiction's increasing incorporation of Complete Streets principals in an effort to balance and encourage all modes of transportation.

Transportation Demand Management

Transportation Demand Management is a general term for the use of strategies that result in the more efficient use of transportation resources.[8] These strategies are designed to increase the number of people using sustainable transportation options such as carpooling, bicycling, walking, telecommuting and taking transit. Since 1979, the RTC has worked with partner agencies to implement TDM strategies at a local level as well as at the regional level. Partner agencies include local jurisdictions and non-profits such as Ecology Action and Community Bridges. Regional strategies include traveler information services, carpool/vanpool matching and incentives, employer coordination, and marketing campaigns.

Historically, the RTC has provided commuter assistance and carpool matching in person, on the phone or through third party websites. More recently some of these services and resources were migrated to the RTC website. However, as smart phone ownership increases and more apps providing people with travel resources become available, the expectation is that travel data and assistance be available in real time. To meet this demand the RTC launched a new program Cruz511 in 2015.

Cruz511 is a free traveler information service for up-to-the minute traffic, transit, bicycle and pedestrian information in Santa Cruz County via a mobile-responsive website. It was developed with the mission to provide comprehensive, accurate, reliable and useful multi-modal travel information to meet the needs of Santa Cruz County travelers. For those without online access, RTC still provides a traveler help desk for personalized assistance by email or phone.

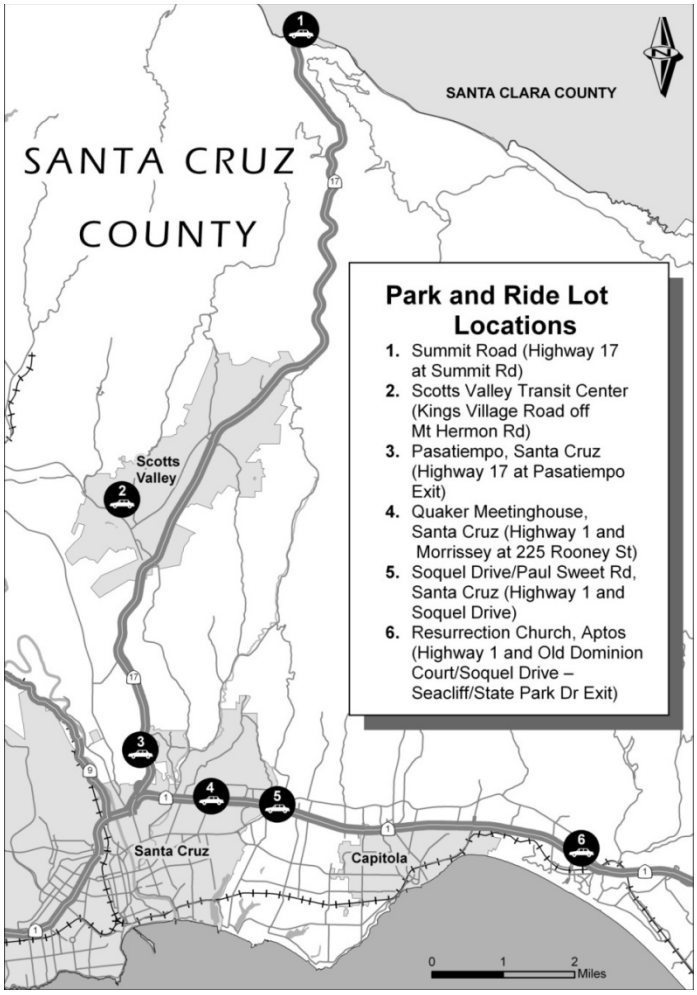


Figure 2.8 – Park and Ride Lots Serving Santa Cruz County
Source: Santa Cruz County Regional Transportation Commission

In keeping with the trend towards people directly accessing information online, the Cruz511 website currently provides more than 50 pages of content-rich resources about using the local transportation network. Among the resources available is a map providing travelers with real-time traffic, construction closures, traffic camera images, and incident feeds. Cruz511 will continue to implement more contemporary easy to use resources to encourage people to use sustainable transportation.

Park and Ride

Park and Ride lots are strategically located pick up spots where commuters can park their cars during the work or school day to meet a carpool, vanpool, or bus ride. There are six Park and Ride lots that serve Santa Cruz county commuters (**Figure 2.8**), and many more in surrounding counties. Most are located along highways or near transit centers. Parking is free for public use during specified hours, but no overnight parking is allowed. Local park and ride facilities are owned by public agencies or are shared-use lots by agreement with churches. The Cruz511 website has a user guide for additional information.

Transportation System Management

Transportation System Management (TSM) is a strategy of implementing operational projects that can enhance the efficiency of the existing transportation system. Generally, TSM techniques are designed to improve traffic flow and air quality, as well as enhance system accessibility and safety. Often, the costs associated with TSM strategies are lower in cost than constructing new facilities. Examples include intersection and signal improvements (e.g. signal synchronization, HOV queue jumps and signal priority, turning lanes), incident management, auxiliary lanes and ramp metering.

Photo Credit: Tom Ralston

Intelligent Transportation Systems

Santa Cruz County's transportation system runs more efficiently and safely due to a variety of Traffic Operation System (TOS) components. Caltrans installs, operates and maintains these systems and works in cooperation with California Highway Patrol and the RTC to assure they are being used to the greatest benefit. Components include the following:

- **Changeable Message Signs (CMS)** - displays messages about roadway conditions (incidents, delays)
- **Dynamic Curve Warning Signs** - broadcasts driver speeds and cautions drivers about safe speeds
- **Closed Circuit TV (CCTV) Cameras** - displays live traffic conditions online to public and Caltrans TMC
- **Traffic Monitoring Stations** - obtains information about traffic speeds and counts
- **Traffic Management Centers (TMC)** - operators at the Oakland TMC and San Luis Obispo TMC control and operate the individual TOS components
- **QuickMap** - displays real-time traffic speeds, construction zones, incidents reported to the CHP, CMS messages and CCTV images

The Traffic Operations System, which extends along Highway 1 and Highway 17, is used to detect and verify traffic incidents and disseminate traffic information to motorists so they may adjust their travel plans accordingly. This system is critical to traffic flow, since single-incident disruptions, such as crashes or construction projects, are responsible for a good portion of all freeway traffic jams. Better information and communication can improve the county's major commute thoroughfares in an economical way.

Intelligent Transportation Systems (ITS), such as the components of the Traffic Operations System, are developed using a standardized architecture. In response to increased federal emphasis on ITS, the Central Coast ITS Strategic Deployment Plan was developed in 2000 through a multi-agency partnership of Central Coast government agencies including the RTC. The Regional ITS Architecture was later developed to ensure that any intelligent transportation system element implemented in the Central Coast considered all possible links to other aspects of the transportation network, whether the connection between these elements were based on the data they required or the data that they dispersed.

For example, information disseminated through a Changeable Message Sign is directly dependent on the roadway condition data collected by the California Highway Patrol, Caltrans or others. As such, ITS Architecture ensures that investments maximize all existing technological resources and build on existing investments. This RTP is consistent with the Regional ITS Architecture to the maximum extent practicable. The 2014 RTP includes funding for continued coordination with Caltrans and the CHP on the Traffic Operations Systems for Santa Cruz County.

Aviation

The Watsonville Municipal Airport, developed in 1947, serves business and recreational users, and is the only public use airport in Santa Cruz County. The facility serves single and twin engine aircraft and helicopters, as well as turboprop and turbine-powered business jets. Approximately 45 percent of all

general aviation activities for the Monterey Bay Area are served by the Watsonville Airport. The double-runway airport occupies 277 acres, plus has an additional 53 acres of land designated as runway protection zone. There is a helipad and fueling facilities on site. The Watsonville Municipal Airport is owned by the City of Watsonville and is a self sustaining "enterprise operation" with a staff of thirteen full time employees.[9] The airport is home to approximately 330 aircraft and over 60,000 flight operations per year. According to the Watsonville Municipal Airport annual aviation operations count, runway operations (landings and take offs) will increase to 100,000 by the year 2025, most of which will be general aviation. There are 218 hangars and 80 tie-downs on the property to store aircraft. Other structures are primarily for maintenance, flight training, and sales.

The airport serves as the airport base for several agricultural growers that distribute fruits, berries, and vegetables. In addition to use by private citizens and businesses, the airport is also used for law enforcement (County Sheriff, California Highway Patrol, Coast Guard, and California Fish and Wildlife), medical evacuation, fire suppression and flight instruction. The Regional Airports Economic Impact Study completed by AMBAG in 2006 showed that the Watsonville Airport had a total economic impact of over $650 million dollars annually for the region.

There are also three private airstrips within the county, located in Bonny Doon, at the Monterey Bay Academy, and Las Trancas/ Big Creek (the latter two operate for private uses amounting to fewer than 10 trips per month). Large passenger airports serving the region are located in San Jose, Monterey, Oakland and San Francisco. Civil aviation helipads maintained for helicopter use include those at Watsonville Community Hospital and Dominican Hospital. There is also a helicopter pad next to Highway 17 in the Santa Cruz Mountains summit area.

Notes for Chapter 2

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[2] "Santa Cruz Metropolitan Transit District Operating Financials and Statistics FY 2010-2013 (through Oct. 2012)," Santa Cruz METRO, accessed January 2014, http://www.scmtd.com/images/department/planning/transitfactsheet%2012-13.pdf.

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[8] "Online TDM Encyclopedia," Victoria Transport Policy Institute (2017), http://www.vtpi.org/tdm/.

[9] Rayvon Williams, City of Watsonville Airport Manager, personal communications, October 10, 2017.