monterey bay sanctuary
SCENIC TRAIL NETWORK
DRAFT MASTER PLAN

Prepared for the:
SANTA CRUZ COUNTY REGIONAL
TRANSPORTATION COMMISSION

DRAFT 10-25-2012

SAM FARR
17TH DISTRICT, CALIFORNIA

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Welcome to the Monterey Bay Sanctuary Scenic Trail Network Master Plan!

Completion of this Monterey Bay Sanctuary Scenic Trail Network (Trail Network) Master Plan brings us all one step closer to realizing our long-standing dream of providing greater access and use of transportation corridors to connect Santa Cruz County with the Monterey Bay National Marine Sanctuary and other regional attractions. With the rail corridor as a tremendous new public resource, the Santa Cruz County Regional Transportation Commission is in a unique position to provide a continuous and separated bicycle and pedestrian path as the spine of a braided Trail Network. The primary corridor will link coastal access to schools, retail centers, residences and other destinations in our vibrant community. The rail right-of-way will also serve freight and passenger rail service thereby expanding travel options and providing unprecedented integration of bicycle, pedestrian and transit options.

I challenge you to join me in working to bring all segments of this continuous Trail Network to fruition. And thank you for helping to make Santa Cruz County a great place to live, work, thrive and to get around.

Regards,

Sam Farr

Member of Congress

ACKNOWLEDGEMENTS

Congressman Sam Farr

California Coastal Conservancy

Santa Cruz County Sanctuary Interagency Task Force

Adopted _____

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Cover Photo - View from Manresa State Beach looking south

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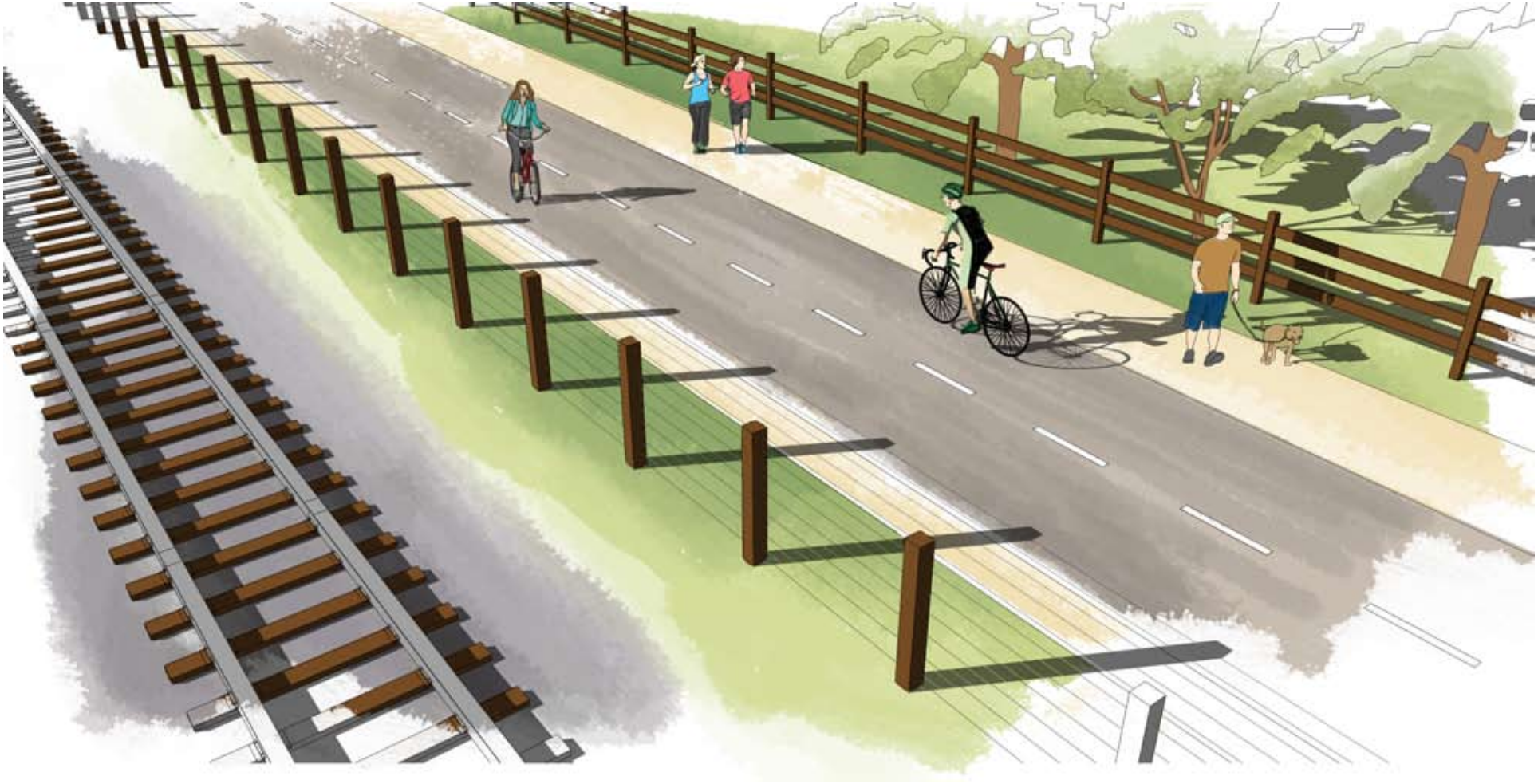
This section presents the project's history and the process that led to Santa Cruz County Regional Transportation Commission's planning efforts.

SECTION ONE
INTRODUCTION



Rail with Trail Concept

Congressman Sam Farr

"Implementation of this key 31-mile long transportation corridor will allow greater transportation options to 88 parks, 42 schools, and over half of the County's population..."

1.1 PROJECT INTRODUCTION

1.1.1 OVERVIEW

The Monterey Bay Sanctuary Scenic Trail Network is a two county pedestrian and bicycle pathway project that was initially conceived by the Santa Cruz County Sanctuary Inter-Agency Task Force and championed by Congressman Sam Farr to foster appreciation for the Monterey Bay National Marine Sanctuary and provide a coastal path for walkers, joggers, bikers, families, locals, and visitors.

The evolution of the Monterey Bay Sanctuary Scenic Trail Network has spanned over several years and includes previously funded, proposed, and/or constructed trails including the Coastal Rail Trail, the California Coastal Trail and the Santa Cruz County 11-mile core alignment of the Monterey Bay Sanctuary Scenic Trail. All these projects share the goal of developing accessible bicycle and pedestrian trail facilities on or near the coast. For improved planning, administration, coordination with state and federal entities, improved connectivity to existing facilities, and to benefit from the economies of scale, the Monterey Bay Sanctuary Scenic Trail (MBSST) Network was envisioned.

In Santa Cruz County, the Monterey Bay Sanctuary Scenic Trail Master Plan (Master Plan) is the result of a directed effort by the Santa Cruz County Regional Transportation Commission (RTC) to develop a braided bicycle/pedestrian Trail Network along Santa Cruz County's coast. The Santa Cruz Branch Line rail corridor which includes the Coastal Rail Trail, will serve the network's continuous multi-use trail spine to provide alternative transportation and coastal access. The "spine" or primary alignment of the Trail Network will be built parallel to (not in place of) the operational rail line, within the rail right of way, to the extent that it is possible so that freight service can continue and future passenger rail service may be provided.

The Coastal Rail Trail promises to be an asset to the Santa Cruz County community for transportation, recreation, education, health, eco-tourism, coastal access, economic vitality, and other visitor-serving purposes. Implementation of this key 31-mile long transportation corridor will allow greater transportation options to 88 parks, 42 schools, and over half of the county's population who live within one mile of the corridor (per 2010 census tract information).

The purpose of this Master Plan is to establish the continuous alignment and set of design standards for the Coastal Rail Trail and its associated spur trails within the context of existing physical constraints of the railroad, coastal access requirements, highway, and public street rights-of-way. The Master Plan identifies planning issues associated with the trail's construction and presents feasible solutions for its design and long term operation and maintenance.

The focus of this Master Plan is on the proposed alignment of the 31-mile long Coastal Rail Trail as the spine of the broader Monterey Bay Sanctuary Scenic Trail Network (Trail Network). Additional trail systems include the initially defined core alignment of the Monterey Bay Sanctuary Scenic Trail and the California Coastal Trail. These trails and other bicycle and pedestrian facilities form the braided network of trails that is the Trail Network project. The continuous Trail Network also proposes gap closure within its project area and access to other desirable destinations, as well as the coast. These trails, on-street facilities, and natural surface paths will form the approximately 50 mile bike/pedestrian Trail Network.

The planning effort for the Master Plan has been conducted within the framework of an extensive public outreach program, designed to involve all those interested and affected by the proposed trail.

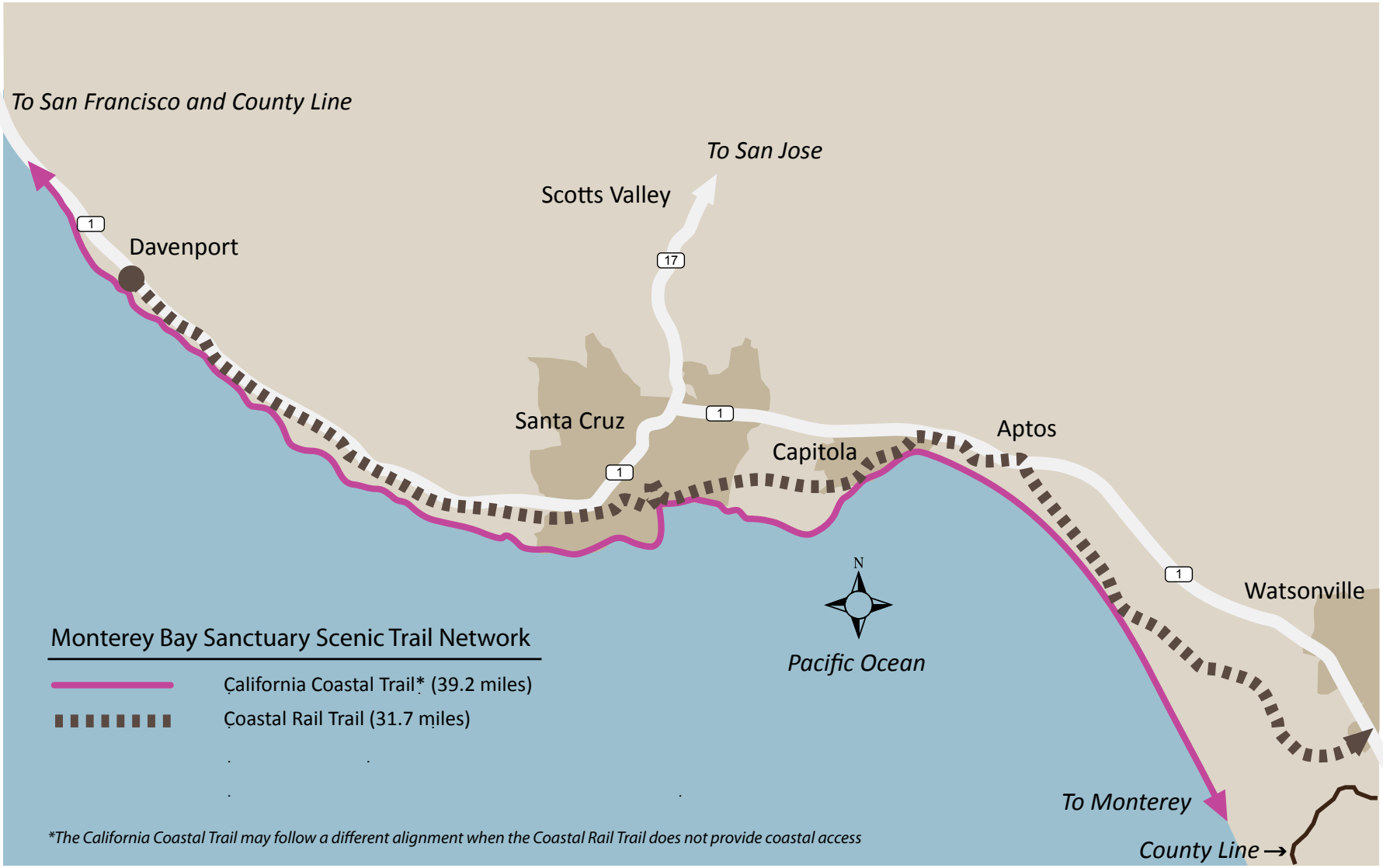


Figure 1-1 Braided Trail Network

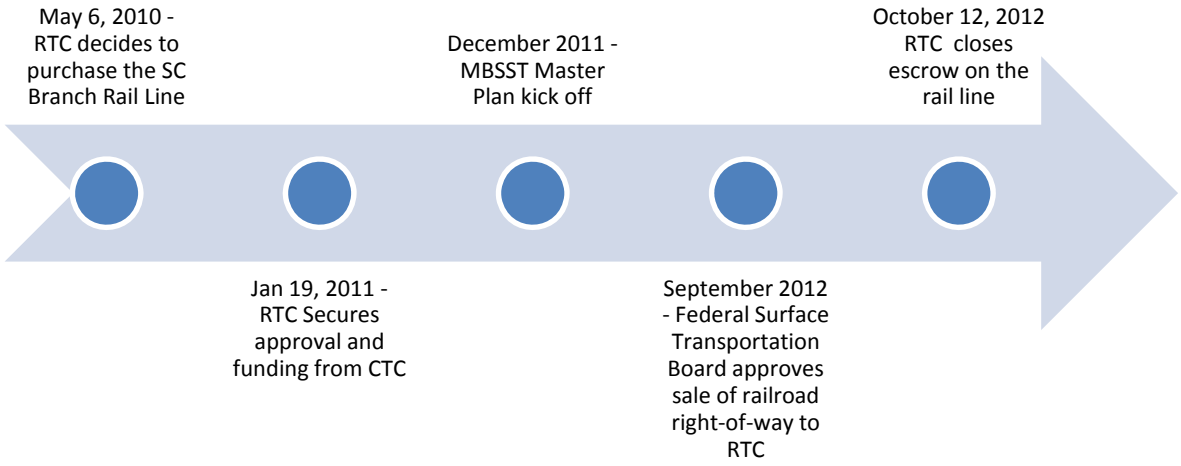
In Santa Cruz County, the trail will run from the San Mateo County line to the Monterey County line.

1.1.2 PROJECT HISTORY

The MBSST is a two-county bicycle and pedestrian pathway project championed by Congressman Sam Farr to foster appreciation for the Monterey Bay National Marine Sanctuary. Through the efforts of Congressman Sam Farr, $4.5 million has been secured through federal appropriations and earmarks. The California Coastal Conservancy granted $250,000 toward the preparation of the Master Plan and another $2.2 million has been committed from RTC discretionary sources. The trail will run the length of the Santa Cruz County coast from the San Mateo County line to Monterey County line. The Transportation Agency for Monterey County will be responsible for Monterey County sections (from Lover's Point in Pacific Grove), while the RTC is responsible, in partnership with various local government entities, for the segments in Santa Cruz County.

On May 6, 2010 the RTC decided to purchase the 31-mile Santa Cruz Branch Rail Line from Union Pacific for $14.2 million. On January 19, 2011, the RTC secured approval and funding from the California Transportation Commission for purchase of the Santa Cruz Branch Rail Line. On October 12, 2012, the RTC successfully closed escrow, placing title of the branch line into public ownership.

1.2 DOCUMENT ORGANIZATION



This Master Plan document describes, in detailed terms, the proposed alignment, how the bicycle/pedestrian facilities are proposed to be built, the order in which they should be built, and how the segments will be financed. This Master Plan is divided into seven (7) sections. The content of each section is as follows:

SECTION ONE - PROJECT INTRODUCTION

This section briefly presents the project's history and the process that led to the Regional Transportation Commission's planning efforts.

SECTION TWO - GOALS AND OBJECTIVES

This section provides the framework around which the Master Plan will be implemented.

SECTION THREE – MASTER PLAN SETTING

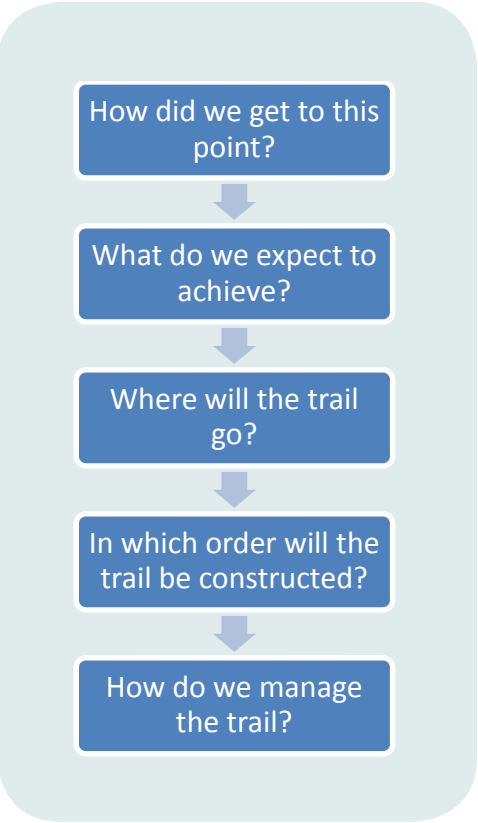
This section provides a detailed description of the Master Plan area with supporting key maps identifying the three over-arching reach maps. This section summarizes the major opportunities and constraints and identifies each segment's proximity to 13 different types of activity centers.

SECTION FOUR - RECOMMENDED TRAIL ALIGNMENT

This section focuses on the recommended trail alignment maps. The recommended alignment has been studied to determine the most appropriate, functional, and cost-effective option for each trail segment. Potential "spur" routes have also been identified, such as connections to scenic vistas, retail destinations, employment generators, transit, residential, trails, and other origin and destination areas.

SECTION FIVE - TRAIL DESIGN STANDARDS

This section establishes trail facility design standards such as typical path construction and layout, wayfinding signage and marking, rail and road crossings, rail-with-trail design standards, on-and off-road bikeways, security and landscape fencing, lighting, bridges and crossings, habitat enhancement and any operational and management specifics that might be warranted as result of proximity to sensitive biological resources. The design standards are presented in list form and supported with photos, graphic sections, and elevations.



SECTION SIX - PROJECT PRIORITIZATION, COSTS, AND IMPLEMENTATION

This section consists of matrices and tables that describe each potential trail segment, its character, major opportunities or constraints, connections to other facilities, permit requirements, nature of property ownership, etc. This section provides information necessary to evaluate, rank and recommend those "most promising" trail alignments. The type of trail that is feasible has been identified for each segment. Each trail segment has a designated priority listing, cost breakdown, potential funding source and other key project information in a user-friendly reference table.

SECTION SEVEN - TRAIL MANAGEMENT, OPERATIONS AND MAINTENANCE

This section addresses the strategies the RTC could employ to identify and implement portions of the project over time, working toward the completion of the Trail Network. Specifically, this section includes the following:

- Trail Operation and Management
- Agricultural and Rail Service Operations Interface
- Operating Responsibilities and Procedures
- Relationship with Adjacent Property Owners
- Administration and Cost
- Implementation Memorandums of Understanding

Appendices follow the Master Plan and include a summary of the documents reviewed in preparation of this Master Plan, opportunity and constraints maps, and detailed cost analysis.

APPENDIX A - OPPORTUNITY AND CONSTRAINTS MAPS
APPENDIX B - TABLE OF EXISTING GOALS, OBJECTIVES, AND POLICIES
APPENDIX C - MBSST RELATIONSHIP TO EXISTING DOCUMENTS SUMMARY
APPENDIX D - DETAILED TRAIL NETWORK COST ANALYSIS
APPENDIX E - TRAIL CROSSINGS

1.3 RELATIONSHIP TO OTHER PLANS AND POLICIES

Information used in the preparation of this Trail Master Plan includes existing general plans, circulation elements, local coastal programs, master plans, parks and recreation plans, bikeway master plans, rail service plans, environmental documents, demographic and land use data, traffic volumes, and other reports and plans. A summary of each relevant plan is presented in Section 2.4 and in Appendix D of this document.

The need to fit within the framework of these guiding documents is taken into consideration in the creation of this Master Plan. Where local ordinance and codes would not address the specific design and development standards for trail facilities, this Master Plan will function as a means to bridge that gap and become the appropriate tool for their community's implementation of a regional transportation effort.

The Master Plan supports other plans and elements by focusing on development of the rail corridor as the "spine" to which all other facilities will connect.

"...the rail corridor (will serve) as the "spine" to which all other facilities will connect".

Workshop participants providing input regarding potential trail alignment

Several stations for the public to review trail information

Many bike advocates attended the workshop series

1.4 PUBLIC OUTREACH

The information gleaned from the outreach identified below was used by the planning team to refine the opportunities and constraints analysis, evaluate alignment alternatives, and project prioritization criteria.

STAKEHOLDER INTERVIEWS

The majority of the interviews were conducted over a three-day period (October 25, 26 and 27, 2011) at the Santa Cruz County Regional Transportation Commission's office. Following the initial meeting series, two additional stakeholder groups were interviewed, one on November 16, 2011 at RRM Design Group's office, and the other on December 1, 2011 via telephone.

A total of 68 people representing 52 stakeholder groups were interviewed. The interviews began with a summary of the project by RTC staff. Following this introduction, the consulting planning team discussed with each stakeholder group their interest in the project, specific technical issues, perceived opportunities and constraints, and finally, their key desired outcomes. The stakeholder's comments were noted on interview forms by planning team members.

The information received ranged from specific trail design standard suggestions, alignment ideas and destination linkages to adjacent land use compatibility issues, safety concerns and natural resource protection needs. Overall, the interviews yielded useful information for the planning team to consider in the draft alignment plan. The interviews also afforded a unique opportunity to meet and talk with the trail corridor's key participants.

WORKSHOP SERIES #1

This workshop series occurred on three consecutive evenings in North, Mid and South county locations from December 13 to December 15, 2011; approximately 200 members of the public attended. The workshop series goal was to bring the community into the Trail Network development early in the process, with the focus on soliciting ideas for new alignment opportunities, connection points, and design elements.

Workshops began with an overview by RTC staff of the Network Master Plan's evolution and goals, followed by an update from the consultant on the field work, corridor analysis and initial trail alignment effort completed so far. Following this introduction, the Trail Network was defined to help illustrate the concept of a "braided" trail system with a well defined, off-street, paved, multi-use trail following the rail corridor and serving as the spine for the Trail Network. With the Trail Network defined, the consultant team then presented constraints, opportunities, and the emerging trail alignment(s) within the Master Plan area.

Following the presentation, workshop participants were invited to join break-out groups to share their ideas for refining the trail alignments, identify additional key connections to and from the trail, and to discuss and map further constraints or opportunities. This exercise was valuable in that each of the break-out group facilitators was able to talk one-on-one with participants and record pertinent information directly on the preliminary alignment maps. As a result of interaction in the break-out groups, the planning team was able to confirm the following key items about each of the three projects' reaches:

NORTHERN REACH (SAN MATEO COUNTY LINE TO WESTERN SANTA CRUZ CITY LIMIT)

- Overall, the alignments shown were supported by workshop participants
- Participants liked the idea of continuing a paved multi-use trail all the way up to Davenport along the rail right-of-way
- Some refinement is necessary between Waddell Bluffs and Davenport with respect to coastal access
- Clear mapping of the off-street multi-use trail is needed from the rail right-of-way to West Cliff Drive

CENTRAL REACH (WESTERN SANTA CRUZ CITY LIMIT TO SEASCAPE BOULEVARD)

- Overall, the alignments shown were supported by workshop participants
- Participants strongly supported developing a paved multi-use trail along the rail right-of-way
- Getting over Soquel Creek utilizing either the existing or a new bridge, is imperative because of the steep grades
- Need to look seriously at adding new bike/pedestrian crossings over the rail line in dense, urban areas

WATSONVILLE REACH (SEASCAPE BOULEVARD TO MONTEREY COUNTY LINE)

- Overall, the alignments shown were supported by workshop participants
- Participants strongly supported developing a paved multi-use trail along the rail right-of-way to provide a direct connection between Watsonville and Santa Cruz County's other coastal communities
- Where the rail right-of-way and San Andreas Road are adjacent, need to explore a creative approach to allow for a paved multi-use trail in this area
- Participants encouraged exploring a levee-top alignment to the beach.

At the conclusion of the break-out session, workshop participants regrouped and were asked to provide any additional comments and ideas to help guide the Master Plan's development. Their comments and ideas were recorded by the planning team for reference in preparing the Draft Master Plan. RTC staff then discussed the project's next steps and tentative project schedule. The workshop adjourned with an invitation to attend the next workshop series.

Evaluating trail opportunities and constraints

Public workshop participants in Watsonville

Sanctuary Scenic Trail advocates in Watsonville

WORKSHOP SERIES #2

Forthcoming

WORKSHOP SERIES #2

Forthcoming

SECTION TWO CONTENTS

This section provides the framework around which the Trail Network Master Plan will be formed.

SECTION TWO
GOALS, OBJECTIVES, AND POLICIES

2.1 INTRODUCTION

Through a collaborative planning process, the following goals, objectives, and policies were developed to guide the development of the Master Plan. They are designed to enhance non-motorized mobility and improve safety, access, traffic congestion, air quality, and the quality of life for Santa Cruz County residents, workers, and visitors. The goals are meant to function as the common framework that integrate the county wide rail trail to new and existing bicycle and pedestrian facilities. Additional objectives and policies for each county jurisdiction are included in their individual plans and summarized in Section 2.5 and Appendix B of this Master Plan.

Goals are meant to function as the common framework that integrate the county wide rail trail to a bicycle and pedestrian Trail Network.

2.2 DEFINITIONS

The following definitions are provided to explain the intent of each Goal, Objective, Policy and Implementing Action.

GOAL

A general statement of desired community outcome.

OBJECTIVE

A subset of a goal, an objective is more specific and provides measurable strategies.

POLICY

Policies are actions that a community will undertake to meet the goals and objectives.

IMPLEMENTING ACTION

A recommended action necessary to implement the Master Plan policies.

2.3 GOALS, OBJECTIVES, AND POLICIES

GOAL 1 TRAIL SYSTEM DEVELOPMENT

DEFINE A CONTINUOUS TRAIL ALIGNMENT THAT MAXIMIZES OPPORTUNITIES FOR A MULTI-USE BICYCLE AND PEDESTRIAN TRAIL SEPARATE FROM ROADWAY VEHICLE TRAFFIC.

Objective 1.1 ***Provide a continuous public trail along the Santa Cruz Branch Line railroad corridor and connecting spur trails within Santa Cruz County.***

Policy 1.1.1 Prioritize funding and implementation of gaps in the Trail Network that serves multiple population and activity centers.

Policy 1.1.2 Maximize ocean views and scenic coastal vistas, emphasize connections to existing and proposed local trail systems, with frequent vertical access opportunities for different user groups from the rail trail to the beach, vista points, interpretive facilities, and other activity centers along the way.

Implementing Action #1	Present Master Plan to each local jurisdiction for adoption or approval
Frequency	Within one year of Master Plan adoption
Responsible Agency(s)	City of Santa Cruz, City of Capitola, City of Watsonville, RTC, County of Santa Cruz

Policy 1.1.3 Use existing built trails, roadways, and other transportation facilities to the fullest extent possible to provide for the primary trail alignment and spur trails.

Policy 1.1.4 Promote segments affording coastal views as primary means for experiencing and interpreting the Monterey Bay National Marine Sanctuary.

Objective 1.2 Make the trail functional as a transportation facility.

Policy 1.2.1 Link trails to regionally significant activity centers such as parks, open space, commercial centers, schools, and universities via the main trail alignment or trail connectors.

Policy 1.2.2 Provide safe, direct linkages between trails and paved pathways, bike lanes, transit terminals, bus stops, and "Park & Ride" lots.

Policy 1.2.3 Construct the trail according to Caltrans bikeway standards as described in the Caltrans Highway Design Manual, Chapter 1000, Bikeway Planning and Design and other standards manuals.

Objective 1.3: Make the trail recognizable as a continuous facility.

Policy 1.3.1 Develop a wayfinding identity and regulatory signage system that is visually clear and cohesive as well as physically durable to reduce maintenance requirements.

Policy 1.3.2 Ensure wayfinding identity and regulatory signage is consistent with and complements the previously developed Monterey Bay Sanctuary Scenic Trail Standards Manual.

Policy 1.3.3 Provide a sense of continuity along the entire trail route through unifying visual elements identified in the landscape design standards incorporated in the Master Plan.

Policy 1.3.4 Preserve the integrity of the trail's identity by focusing on the development of a cohesive spine trail.

Objective 1.4: Minimize the environmental impacts of the complete trail system.

Policy 1.4.1 Avoid sensitive habitat areas and special-status plant and animal species to the maximum extent feasible when identifying, designing, and constructing new trail segments.

Policy 1.4.2 Coordinate with local planning and Coastal Commission staff to design and construct the trail to comply with the Coastal Act and local coastal program requirements. Coordinate with designation of the California Coastal Trail.

Policy 1.4.3 Identify potential habitat enhancement projects and mitigation strategies in association with all new trail development plans and designs.

Policy 1.4.4 Establish positive working relationships with state and federal wildlife and environmental resource protection officials and staff.

Objective 1.5: Minimize trail impacts to private lands including agricultural, residential and other land uses.

Policy 1.5.1 Avoid trail development on private lands where a feasible alternative alignment exists on adjacent public properties.

Policy 1.5.2 Document all costs of modifications to land owner operations, access controls, etc., associated with trail development and incorporate such costs into public cost estimates for the project.

GOAL 2: ENHANCE APPRECIATION OF THE COASTAL ENVIRONMENT

DEVELOP PUBLIC TRAIL ACCESS ALONG THE MONTEREY BAY NATIONAL MARINE SANCTUARY TO ENHANCE APPRECIATION, UNDERSTANDING, AND PROTECTION OF THIS SPECIAL RESOURCE.

Objective 2.1: Define interpretive guidelines and exhibits to address ecological, historical, and agricultural working landscapes.

Policy 2.1.1 Continue work documented in the Monterey Bay Sanctuary Scenic Trail Standards Manual when developing interpretive materials, where appropriate.

Policy 2.1.2 Establish interpretive design and content guidelines via a memorandum of understanding (MOU) or other formal written agreement between implementing entities, as needed.

Policy 2.1.3 Provide relevant, engaging interpretation and information of the railroad, Monterey Bay National Marine Sanctuary, coastal environment, agriculture, and communities affected.

GOAL 3: EDUCATION AND AWARENESS

PROMOTE AWARENESS OF THE TRAIL, TRAIL OPPORTUNITIES, AND TRAIL USER RESPONSIBILITIES.

Objective 3.1: ***Promote the benefits of trail usage such as economic, transportation, safety, recreation, connectivity, community image, and health.***

Policy 3.1.1 Acknowledge existing trail designations such as the California Coastal Trail.

Policy 3.1.2 Create a trail identity through use of logos, maps, signage, and brochures.

Implementing Action #2	Update the Santa Cruz County Bikeway map to reflect the new Coastal Rail Trail segments.
Frequency	As needed
Responsible Agency(s)	RTC

Policy 3.1.3 Develop trail promotional materials presenting the facility as alternative transportation and to draw travelers out of their cars.

Policy 3.1.4 Establish complementary educational and regulatory programs that emphasize respect for natural resources, private property, and other trail users.

Policy 3.1.5 Use technology to promote trail awareness and opportunities such as development of a cellular phone application with maps and opportunities to report trail maintenance, provision of QR codes along the trail to access additional interpretive information, and a social media website for the trail with updates on closures.

Interpretive signage example

Monterey Bay National Marine Sanctuary information sign at Manresa State Beach

GOAL 4: IMPLEMENTATION

DEVELOP A LONG- AND SHORT-TERM PROGRAM TO ACHIEVE THE POLICIES SET FORTH IN THIS PLAN THROUGH A COMBINATION OF PUBLIC AND PRIVATE FUNDING, REGULATORY METHODS, AND OTHER STRATEGIES.

Objective 4.1: ***Identify costs associated with each defined segment and for overall improvements required to create a continuous trail.***

Policy 4.1.1 Develop and maintain accurate, current construction unit costs for all major elements of the recommended trail facility.

Policy 4.1.2 Develop and maintain accurate, current land costs where acquisition of right-of-way and/or easements is required for trail implementation.

Policy 4.1.3 Provide implementing entities with funding to develop trail segments.

Objective 4.2: ***Ensure that sponsors of the Monterey Bay Sanctuary Scenic Trail (MBSST) pursue all potential state, federal, regional, local, and other funding sources.***

Policy 4.2.1 Allocate staff, retain grant writing volunteers, and/or retain consultants to pursue funding for direct, matching, and challenge grants from other agencies and sources for implementation of the MBSST.

Implementing Action #3	Apply for grants for construction of additional trail segments.
Frequency	As opportunities present themselves
Responsible Agency(s)	RTC & implementing entities

Policy 4.2.2 Develop and maintain a matrix of appropriate state and federal grant sources for specific trail segments, trail access points, and associated projects.

Objective 4.3: ***Utilize ordinances and park conservation, or trail easements to ensure significant trail development opportunities.***

Policy 4.3.1 Work with city and county planning staff to seek out opportunities as part of new development proposals.

Objective 4.4: ***Utilize existing lands owned by various government entities, open space groups, institutions, and other sources to develop the trail.***

Policy 4.4.1. Update and reevaluate inventory of all public agency-owned lands (RTC, county, city, other district, state, federal, etc.) and analyze for trail development opportunities.

Policy 4.4.2 Investigate partnerships for current or future collaboration on both private and public lands.

Policy 4.4.3 Explore property transfers, trades, donations, partial purchases, joint purchases, easements, long-term leases, encroachment permits, and a variety of other means from willing sellers or property owners.

Objective 4.5: ***Seek financial and other support for the trail.***

Policy 4.5.1 Seek methods to acquire funding and contributions of land including wills and bequests, stocks, gifts of life insurance, charitable remainder trusts, and maintenance endowments.

Policy 4.5.2 Investigate methods for land acquisition including life estates, contributions of surplus real estate, sequential donations or purchases, and purchase and lease back programs with landowners.

Policy 4.5.3 Develop an active volunteer program with service clubs, community groups and citizens. Identify interested corporations, clubs or individuals and create an action plan tailored to fit the adopting organizations budget and interest. Such entities may be helpful in purchasing trail furnishings such as benches, trash cans, water fountains, and lighting. Other entities may volunteer time for trail maintenance.

Objective 4.6: Maximize funding for the project.

Policy 4.6.1 Develop and position the Master Plan for use as a source of documentation for competitive funding programs, and pursue funding from as many sources as resources permit.

Policy 4.6.2 Focus on funding sources for which RTC will qualify best and be able to implement.

Policy 4.6.3 Assist implementing entities in seeking independent funding.

Policy 4.6.4 Consider allocating funding over which the RTC has local control.

GOAL 5: OPERATION AND MAINTENANCE

DEVELOP THE NECESSARY ORGANIZATIONAL STAFFING AND FUNDING MECHANISMS TO ENSURE THAT ALL TRAIL SEGMENTS, TRAILHEADS, AND ACCESSORY FEATURES ARE SAFE, WELL-MAINTAINED, AND WELL-MANAGED.

Objective 5.1: Consider establishing a shared maintenance agreement between local, County and State agencies with ownership and management responsibility for individual trail segments.

Policy 5.1.1 Engage managers and maintenance staff for existing built segments of the trail (i.e. Wilder Ranch) to determine existing maintenance standards and costs.

Policy 5.1.2 Support implementing entities in developing maintenance agreements for each new trail segment.

Policy 5.1.3 Establish operation and maintenance standards through memorandum of understanding (MOU) or other formal document for uniform application by all participating entities.

Objective 5.2: ***Ensure adequate revenue for the maintenance of all trail segments and related facilities.***

Policy 5.2.1 Accurately forecast and plan for the short- and long-term operation and maintenance of the overall trail system as an initial step in estimating implementation cost.

Policy 5.2.2 Update the maintenance and operations budget sufficient for the level of trail system development in any given year, to be funded through a reliable source.

Policy 5.2.3 As an initial step in planning each trail segment project, accurately estimate the operations and maintenance impact of each new project and develop a realistic strategy and funding for its success.

Objective 5.3: ***Provide for secure, safe, pleasant and accessible use of trail facilities.***

Policy 5.3.1 Maintain facilities at appropriate levels of the written maintenance program.

Implementing Action #4	Conduct trail counts at various locations throughout the Trail Network
Frequency	Annually
Responsible Agency(s)	RTC, volunteer groups, bicycle advocacy groups

Policy 5.3.2 Establish positive working relationships with local and County fire agencies, law enforcement officials and staff.

Policy 5.3.3 Establish and foster a “Trail Watch” program in cooperation with local law enforcement officials and local advocacy groups.

Policy 5.3.4 Engage volunteers for trail patrols to help inform and satisfy maintenance needs.

Implementing Action #5	Conduct counts of trail amenities installed such as benches, water fountains, and bike racks.
Frequency	Annually
Responsible Agency(s)	RTC, volunteer groups, bicycle advocacy groups

Policy 5.3.5 Post user guidelines for bikes, pedestrians, and other forms of non-motorized transportation to inform users of safety and interaction protocol thereby minimizing user conflict.

2.4 PLANNING AND POLICY CONTEXT

The following documents were reviewed in preparation of the Trail Master Plan alignment and development of the Master Plan goals, objectives, and policies. Appendix C provides a comprehensive list of relevant documents and their relationship to the Trail Master Plan. Appendix B includes these same documents and highlights relevant goals, objectives, and policies.

2.4.1 FEDERAL AND STATE PLANS

COMPLETING THE CALIFORNIA COASTAL TRAIL

In late 2001, the California State Legislature, by way of SB 908, directed the State Coastal Conservancy to determine what was needed to implement a proposed pedestrian trail that would stretch 1,300 miles along the entire California coast and across dozens of political jurisdictions. Development of the MBSST Network will provide approximately 50 miles of trails that directly link to the California Coastal Trail or make up a portion thereof. The Coastal Conservancy pursues this mandate in part by awarding grants to public agencies and nonprofit organizations to acquire land, or any interest therein, or to develop, operate, or manage lands for public access purposes to and along the coast.

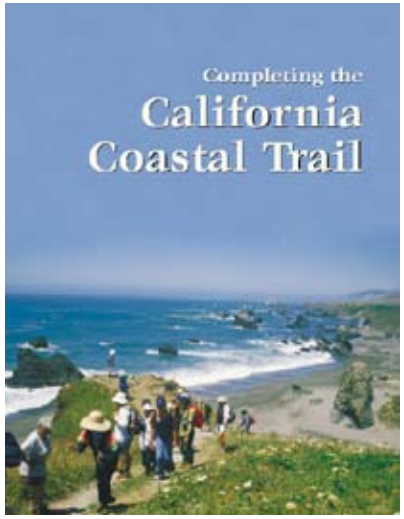
Most recently, in 2007, the Governor signed SB 1396 directing the Coastal Conservancy to coordinate development of the Coastal Trail with the Department of Transportation (Caltrans). This bill also requires local transportation planning agencies whose jurisdiction includes a portion of the Coastal Trail, or property designated for the trail to coordinate with the Coastal Conservancy, California Coastal Commission, and Caltrans regarding development of the trail.

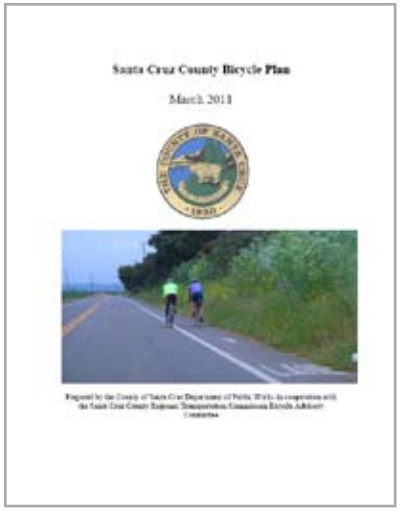
CALIFORNIA COASTAL ACT OF 1976

The California Coastal Commission, in partnership with coastal cities and counties, plans and regulates the use of land and water in the coastal zone. Development activities, which are broadly defined by the Coastal Act include construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters, generally require a coastal permit from either the California Coastal Commission or the local government.

The Coastal Act includes specific policies that address issues such as shoreline public access and recreation, lower cost visitor accommodations, terrestrial and marine habitat protection, visual resources, landform alteration, agricultural lands, commercial fisheries, industrial uses, water quality, offshore oil and gas development, transportation, development design, power plants, ports, and public works. The policies of the Coastal Act constitute the statutory standards applied to planning and regulatory decisions made by the Coastal Commission and by local governments, pursuant to the Coastal Act.

View of Santa Cruz Branch Line railroad tracks, Capitola, and the Monterey Bay





2.4.2 REGIONAL PLANS

MONTEREY BAY AREA MOBILITY 2035

Federal regulations require that the Association of Monterey Bay Area Governments (AMBAG) to develop a long-range transportation plan for the three-county Monterey Bay metropolitan region that is both financially constrained and falls under the on-road motor vehicle emissions budget included in the Federal Air Quality Maintenance Plan. The AMBAG region is currently in compliance with its vehicle emissions budget. State legislation, Senate Bill SB 375, calls for Metropolitan Planning Organizations (MPOs) to prepare a Sustainable Communities Strategy (SCS) to be used to synchronize and coordinate both the metropolitan transportation planning process and the regional housing needs allocation process. Programs and projects listed in this plan serve the stated goals and objectives, as well as address the transportation needs and deficiencies. Programs and projects are first proposed and adopted in the respective Regional Transportation Plans (RTPs) of the three Monterey Bay area counties: Monterey, San Benito, and Santa Cruz. The project lists from each RTP are incorporated, in their entirety, into the Metropolitan Transportation Plan. The project lists provide all funded projects and potential projects should funding become available, from 2010 to 2035.

2.4.3 COUNTY PLANS

SANTA CRUZ COUNTY BICYCLE PLAN

The purpose of this plan is to consolidate into one document all bicycle-related County plans and projects that are currently identified in the County General Plan, the Santa Cruz County Regional Transportation Plan, and other local documents. Although not a part of the General Plan, the Bicycle Plan is consistent with and implements action statements of the Circulation Element of the General Plan and/or County and regional plans. The Plan is intended to aid County planners and engineers in selecting and implementing bicycle improvements with the goal of increasing bicycle commuting.

SANTA CRUZ COUNTY REGIONAL TRANSPORTATION PLAN

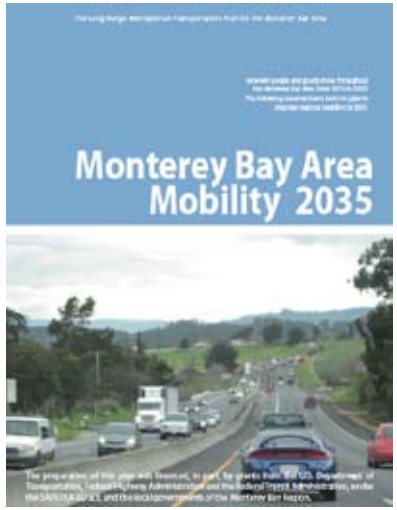
This 2010 Regional Transportation Plan (called the 2010 RTP) is a minor update of the last version, completed in 2005, and provides guidance for transportation policy and projects through the year 2035. The 2010 RTP is the RTC's comprehensive planning document, which identifies the goals, projects, and programs that will maintain and improve transportation systems over the next twenty-five years. Individual projects listed in the 2010 RTP must still undergo separate design and environmental processes, and can only be implemented as local, state, and federal funds become available.

SANTA CRUZ COUNTY GENERAL PLAN LOCAL COASTAL PROGRAM (LCP)

The Local Coastal Program (LCP) is part of the Santa Cruz County General Plan and is comprised of the land use plan, implementing policies and ordinances, and maps applicable to the coastal zone portions of the County to preserve unique coastal resources pursuant to the requirements of the California Coastal Act. The County last prepared and adopted its LCP as a part of the general plan in 1994.

SANTA CRUZ COUNTY GENERAL PLAN CIRCULATION ELEMENT

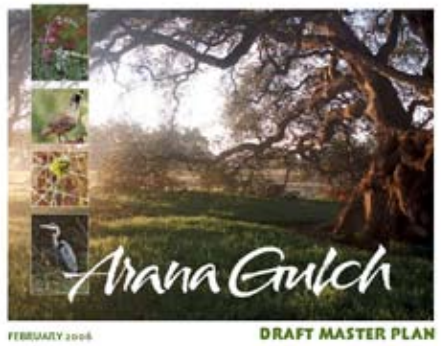
The Circulation Element is intended to be the key policy statement of the County regarding transportation facilities and programs serving the unincorporated areas. It is an integral part of the General Plan and Local Coastal Program Land Use Plans that provides a basis for transportation-related decisions and complements the other General Plan and Local Coastal Plan Land Use Plan elements. Specifically, the Circulation Element clarifies transportation issues raised in other General Plan elements and offers guidance toward solutions.



2.4.4 LOCAL PLANS

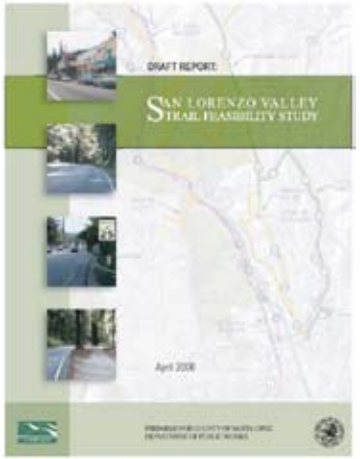
ARANA GULCH MASTER PLAN

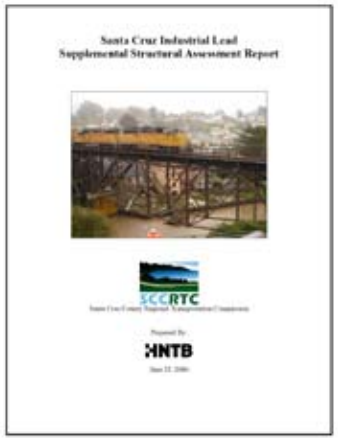
The City of Santa Cruz acquired Arana Gulch in 1994 as one of the Greenbelt lands, and shortly thereafter opened the property to the public. While popular with hikers strolling along the meadow, bicyclists riding to the Upper Harbor, and visitors of all ages enjoying the scenery and wildlife, recreational use on the property is limited to earthen trails, most of which existed prior to the City's ownership. Only two visitor entrances currently exist and there are no visitor facilities, except trails and associated signage. The intent of the Master Plan is to establish a vision and goals that will shape the future of Arana Gulch as a unique open space within the City of Santa Cruz that includes amenities such as a bicycle and pedestrian path. In addition, the Master Plan identifies recreational uses and resource management guidelines to direct future management and enhancement of this natural area.

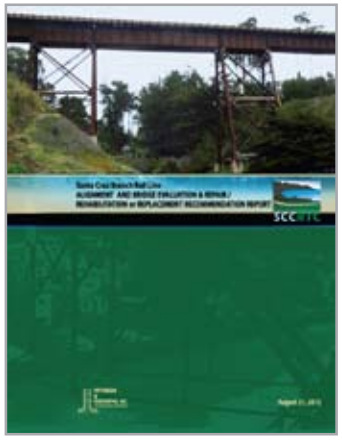


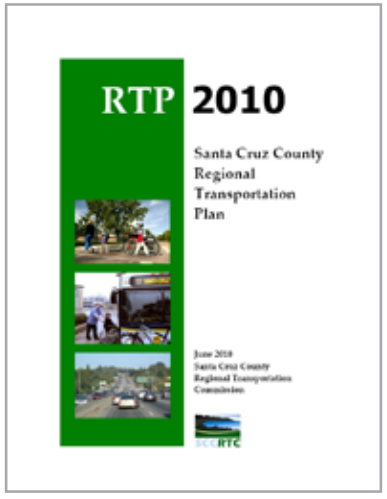
SAN LORENZO VALLEY TRAIL FEASIBILITY STUDY

Improved bicycle and pedestrian routes have been discussed in the San Lorenzo Valley for many years. In the past few years, the San Lorenzo Valley Trail Committee formed and conducted field studies to focus on this objective. In 2001 the Santa Cruz County Public Works department and the Rails-To-Trails Conservancy collaborated on an application submitted for a Caltrans Community-Based Transportation Planning Grant. In May 2002 Caltrans approved the grant to conduct a feasibility study of a trail along the San Lorenzo Valley/ Highway 9 corridor between Santa Cruz and Boulder Creek (approximately 15 miles), including an assessment of the potential to use the Big Trees/Roaring Camp Railroad line as part of the trail.









SANTA CRUZ INDUSTRIAL LEAD SUPPLEMENTAL STRUCTURAL ASSESSMENT REPORT

The report provides a structural assessment of selected structures on the Santa Cruz Industrial Lead. The Supplemental Structural Assessment Report supplements previously completed structural assessments of railroad trestles completed by other consultants in July 2005 and August 2005. The July 2005 Structural Assessment and August 2005 La Selva Trestle Supplemental Reports highlighted specific structures that were in need of additional structural assessment "due to a Poor Condition Rating, advance age of the structure, importance/ visibility of the structure, and/or potentially high capital and maintenance costs of the structure". The purpose of the Supplemental Structural Assessment Report is to present findings from HNTB's structural assessment of those specific structures.

SANTA CRUZ BRANCH RAIL LINE ALIGNMENT AND BRIDGE EVALUATION REPORT

J.L. Patterson & Associates (JLP) assisted the RTC in identifying, reassessing and prioritizing $6 million in capital improvements. The $6 million is generally directed towards maintaining and expanding freight and recreational rail service on the Santa Cruz Branch Rail Line and includes project cost analysis and budgeting for those investments that are most cost-beneficial for extending the useful life of the rail line. JLP reviewed previously prepared inspection, conditions, environmental and other related reports and conducted supplemental data collection, field inspections, testing, and analysis as needed to determine the overall scope of required rehabilitation, reconstruction, and other improvements. Next, JLP prioritized the most important repairs needed that can be performed within the $6 million construction budget.

CITY OF CAPITOLA GENERAL PLAN CIRCULATION ELEMENT

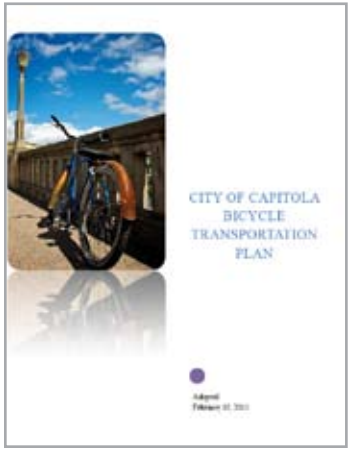
The Circulation Element contains objectives, policies, and implementation measures. An update is currently under development.

CITY OF CAPITOLA BICYCLE TRANSPORTATION PLAN

The City of Capitola Bicycle Transportation Plan (BTP) assesses commuter needs, identifies funding sources and directs the future development of bicycle facilities in the City. It also seeks to carry out the "Five E's" used by the League of American Bicyclists to identify and rank Bicycle Friendly Communities. The "Five E's" are Evaluation, Engineering, Education, Encouragement, and Enforcement. The Capitola BTP sets goals and objectives for the purpose of increasing the safety and convenience of bicycle commuting in the area. The BTP is an update of the 2005 City of Capitola Bicycle Transportation Plan. It includes or expands upon the goals and objectives put forth in 2005 to improve network connectivity, address dangerous or hazardous areas, and increase education and bicycle resources. In addition to remaining consistent with major City planning documents, the 2011 Bicycle Transportation Plan implements the policies and programs of the Circulation Element of the General Plan. The BTP is intended to aid City of Capitola planners and engineers in prioritization of bicycle improvement projects with the goal of increasing bicycle commuting, recreation, tourism, and safety. The plan complies with the requirements and guidelines articulated in Section 891.2 of the California Streets and Highways Code. By complying with this element of the vehicle code, the plan meets the requirements of the Bicycle Transportation Account (BTA), a Caltrans funding source for bicycle improvements projects.

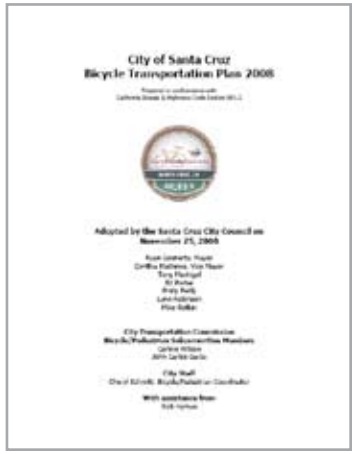
CITY OF SANTA CRUZ GENERAL PLAN 2030 MOBILITY CHAPTER

This chapter corresponds to the required circulation element under state law. Its purpose is to set forth policies and ways to ease the ability of people and vehicles to move into, around, and out of the city in the long term, through 2030. This chapter includes goals, policies, and actions that guide city bodies in making decisions related to the city's transportation and road systems as well as implementing the actions recommended in this chapter.



CITY OF SANTA CRUZ BICYCLE TRANSPORTATION PLAN 2008

The emphasis of the 2008 Bicycle Transportation Plan (BTP) is shifted from that of the 2000 and 2004 plans. Many of the significant projects from those plans have been completed - Bay Street, Beach Street, High Street, Soquel Avenue and major portions of the San Lorenzo River Path. The 2008 plan is focused on creating a detailed network of routes to give bicyclists a greater range of choices. There is potential to develop a multi-purpose trail for bicyclists and pedestrians within the Santa Cruz Branch rail right-of-way. The City of Santa Cruz should establish and maintain access to the rail right-of-way and potential new transportation facilities when considering new development projects. This Plan includes a wider variety of bicycle facilities, not just bike lanes and bike paths, but signed bike routes, traffic-calmed bike boulevards, shared pavement markings, or "sharrows", and developed multi-purpose trails. The 2008 Plan supports the grand scale of the regional Monterey Bay Sanctuary Scenic Trail Network as well as the small scale of simple cut-through easements for access and improved railroad crossings. The plan complies with the requirements and guidelines articulated in Section 891.2 of the California Streets and Highways Code. By complying with this element of the vehicle code, the plan meets the requirements of the Bicycle Transportation Account (BTA), a Caltrans funding source for bicycle improvements projects.

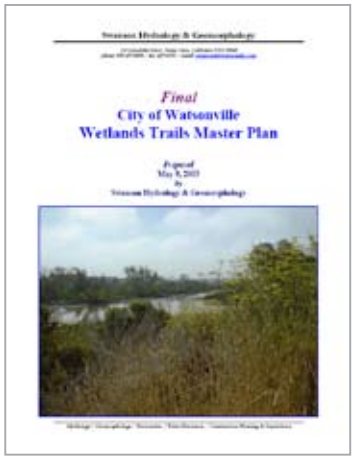


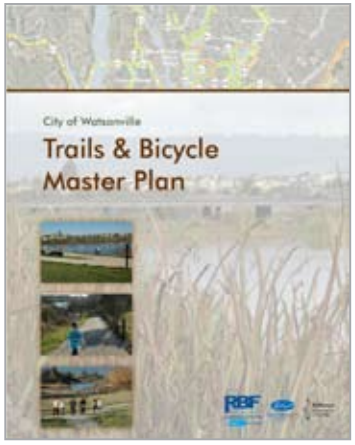
WATSONVILLE VISTA 2030 GENERAL PLAN CIRCULATION ELEMENT

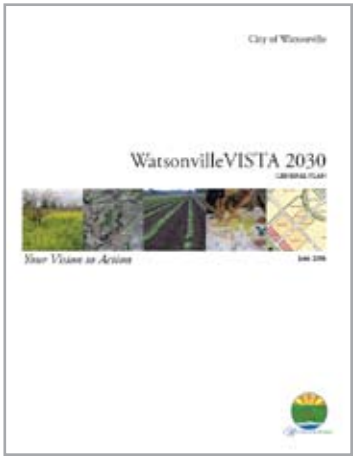
The October 2012 update to the Vista 2030 General Plan includes updates to the circulation element policies. These policies are consistent with the Watsonville bicycle plan and county RTP policies and contain objectives, policies, and implementation measures.

CITY OF WATSONVILLE WETLANDS TRAILS MASTER PLAN

The Trails Master Plan for the City of Watsonville was prepared to improve public access and recreation to areas surrounding Watsonville and Struve Sloughs. The Watsonville Wetlands system provides a rich variety of natural wetland and other habitats within the city and outlying unincorporated areas of Santa Cruz County. A well-designed network of trails will allow for better public access to the sloughs and promote greater community awareness of its assets. This Master Plan calls for a system of paved pedestrian footpaths that will incorporate bicycle use and access for disabled users. The Trails Master Plan was developed considering a host of factors, including various means of travel, Americans with Disabilities Act requirements, public safety concerns, biological and water quality impacts, erosion control, and construction and maintenance costs. Trail alignment, grade, type, construction, and design have also been considered in producing the Trails Master Plan.







CITY OF WATSONVILLE TRAILS & BICYCLE MASTER PLAN

The purpose of the Watsonville Trails & Bicycle Master Plan is to develop a framework for building an integrated system of pathways and bikeways that will link residents to the outdoors. The future network will provide residents of Watsonville and the greater region with close-to-home and close-to-work access to bicycle and pedestrian trails that connect to the city's most popular destinations and surrounding natural areas, including the vast network of sloughs that are unique to south Santa Cruz County. The trails and greenways will serve as non-vehicular transportation and recreation needs and help to encourage quality, sustainable economic growth. This plan will also serve as the Bicycle Transportation Plan. The plan complies with the requirements and guidelines articulated in Section 891.2 of the California Streets and Highways Code. By complying with this element of the vehicle code, the plan meets the requirements of the Bicycle Transportation Account (BTA), a Caltrans funding source for bicycle improvements projects.

UNIVERSITY OF CALIFORNIA, SANTA CRUZ 2008 BICYCLE PLAN

The purpose of the UC Santa Cruz 2008 Bicycle Plan is to serve as a guide for improving bicycling conditions and continue to encourage and support bicycling as a sustainable transportation mode on, to and from the campus. As such, this document describes the existing policies and facilities related to bicycling in the campus context, and it includes a list of projects and programs intended to improve bicycling as a viable commute mode in the future. The plan complies with the requirements and guidelines articulated in Section 891.2 of the California Streets and Highways Code. By complying with this element of the vehicle code, the plan meets the requirements of the Bicycle Transportation Account (BTA), a Caltrans funding source for bicycle improvements projects. The plan is not intended to serve as a standards manual for design and construction of bicycle facilities.

SANCTUARY SCENIC TRAIL STANDARDS MANUAL

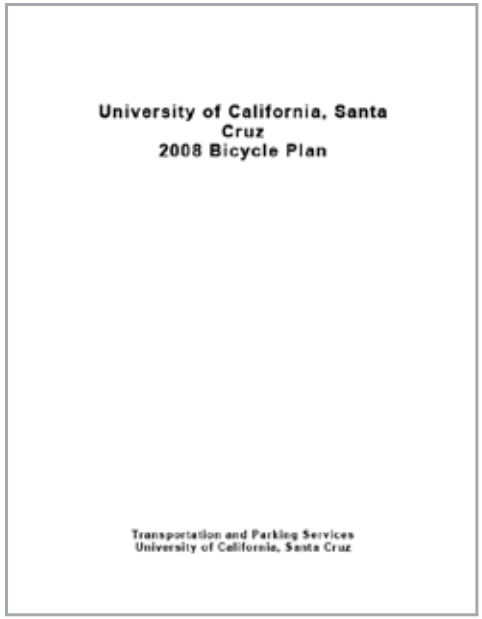
This Standards Manual contains the guidelines, specifications and construction documents for the signage and exhibit program along the 11-mile core area of the Sanctuary Scenic Trail in Santa Cruz County. The purpose of the Standards Manual is to assist participating jurisdictions when they create and install trail elements and exhibits along their segment of the Trail. It describes sites, placement, site preparation, sign types, content, and frequency of signs.

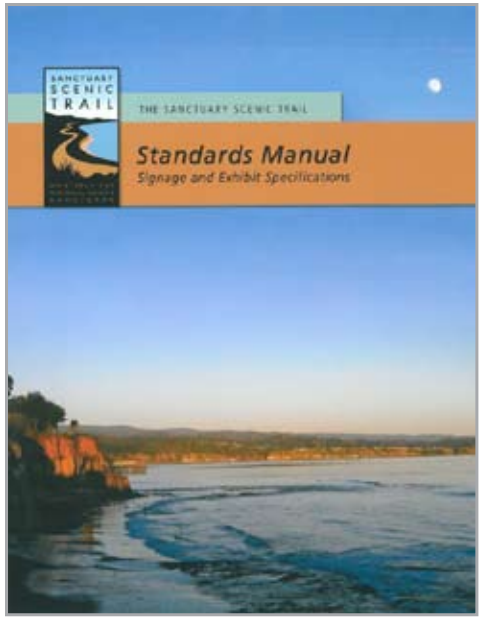
This "blueprint" has been accepted by officials in each of the jurisdictions along the 11-mile trail segment in Santa Cruz County. It should be referred to when developing signs and exhibits by each of these jurisdictions. Within the broad framework of the guidelines established in this manual, each jurisdiction will have the latitude to determine content, exact siting and contextual details.

The Standards Manual establishes guidelines to make each site consistent with the overall trail plan. Each jurisdiction will be responsible for following these guidelines. The Standards Manual outlines this process to make it as easy as possible to implement the overall plan.

CALTRANS HIGHWAY DESIGN MANUAL - CHAPTER 1000 BICYCLE TRANSPORTATION DESIGN

The needs of non motorized transportation are an essential part of all highway projects. Mobility for all travel modes is recognized as an integral element of the transportation system. Chapter 1000 includes design guidance for Class I bike paths, Class II bike lanes, and Class III bike routes. Design guidance that addresses the mobility needs of bicyclists on all roads is distributed throughout the manual where appropriate.





SECTION THREE CONTENTS

This section provides a detailed description of the master plan area with supporting key maps identifying the trail network segments.

SECTION THREE
MASTER PLAN SETTING

Harkins Slough

3.1 INTRODUCTION

The Master Plan area stretches the entire length of Santa Cruz County from the Pajaro River in Watsonville to the San Mateo County Line north of Davenport. The trail has the opportunity to connect the scenic coastal bluffs in the north county to the urban areas of Santa Cruz, Capitola, and Aptos, and to traverse the rural agricultural and open space lands of south county. As shown in Figure 3-1, the Master Plan area is organized into three large subareas or "reaches": Northern Reach, Central Reach, and Watsonville Reach.

The Santa Cruz Branch Line right-of-way, now owned by the Santa Cruz County Regional Transportation Commission (RTC), is a defining feature of the area. The railroad corridor will provide the primary spine for the Monterey Bay Sanctuary Scenic Trail (MBSST) through Santa Cruz County.

The railroad generally runs along the coast, parallel to the Pacific Ocean, except where it turns inland near Manresa State Beach. From there, the tracks run inland toward Watsonville and ultimately end at the Watsonville Junction. The railroad right-of-way, which is the subject of this Master Plan, is an approximately 31-mile continuous stretch of travel corridor, providing a unique opportunity to create a transportation and recreational link between existing trails and transportation facilities in Santa Cruz County.

Santa Cruz Beach Boardwalk

Scenic bluffs north of Santa Cruz

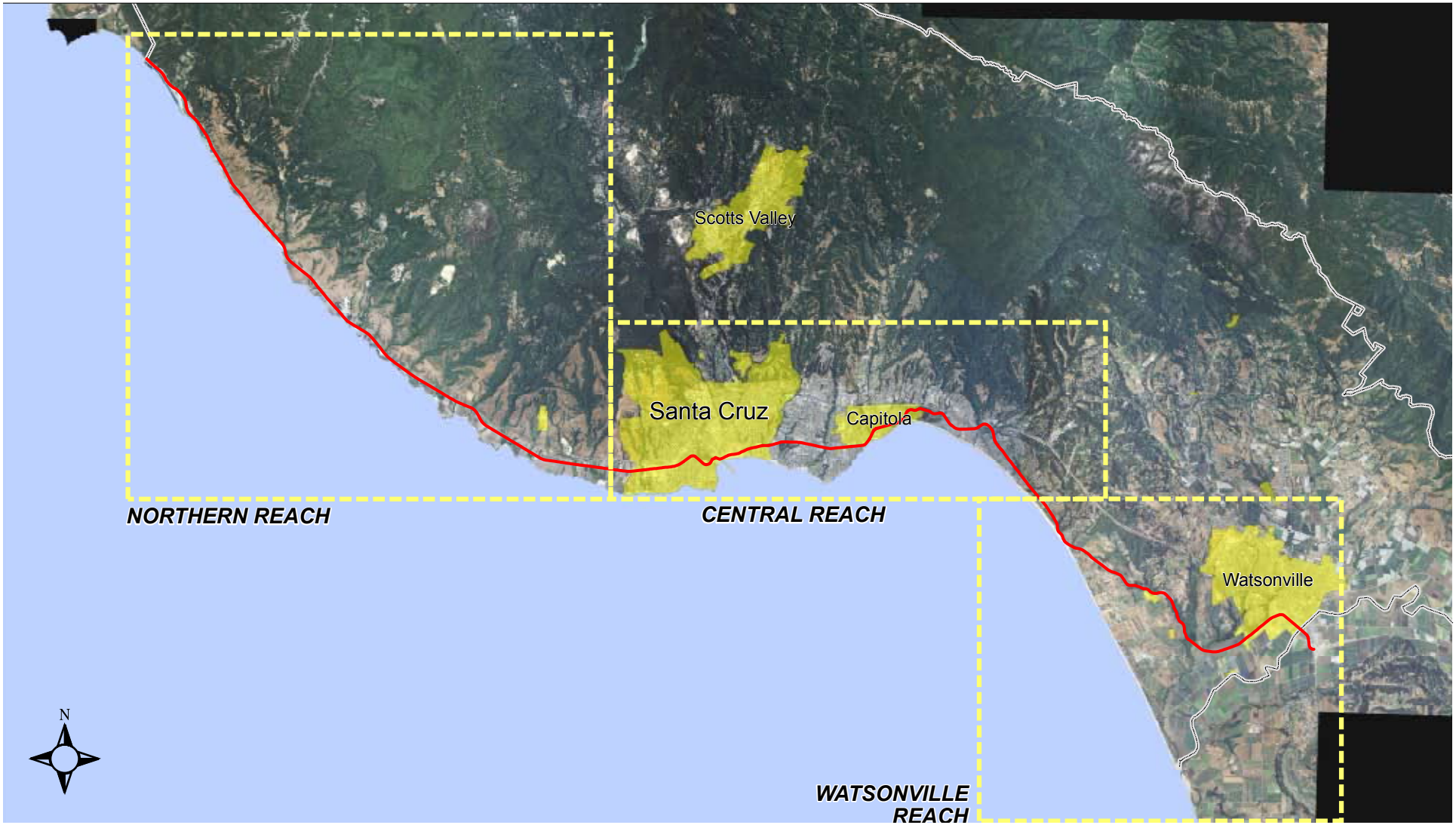


Figure 3-1 Master Plan Area

3.1.1 EXISTING BICYCLE TRAILS

Santa Cruz County boasts 215 miles of bikeways, 190 of them are bidirectional bike lanes, and 25 miles are separated paths. Several projects that benefit bicyclists were recently constructed including a new bike/pedestrian bridge over the San Lorenzo River, adjacent to Highway 1; a two-way bike lane on Beach Street; Soquel Avenue bike lanes; and several segments of the Watsonville wetland trails. Additional bicycle projects are under development that will fill critical links in the bicycle network. These include the Broadway/Brommer bicycle and pedestrian path through Arana Gulch, Calabasas Road bicycle lanes and sidewalks, 38th Avenue bicycle lanes in Capitola, and a county-wide bicycle route signage and way-finding program.

Wilder Ranch multi-use trail

3.1.2 EXISTING TRAIL NETWORKS

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. Some of the Coastal Trail's key objectives are to provide a continuous trail as close to the ocean as possible, with connections to the shoreline, to provide sufficient transportation access to encourage public use, to create linkages to other trail systems, and to use the Coastal Trail system to increase accessibility to coastal resources from urban population centers. The Coastal Trail network alignment was developed by the California State Coastal Conservancy in conjunction with the California Coastal Commission, the California Department of Parks and Recreation, and Coastwalk, and has been incorporated into this Master Plan as shown on the alignment maps in Section 4.

Railroad tracks and Highway 1

MONTEREY BAY SANCTUARY SCENIC TRAIL

The Monterey Bay Sanctuary Scenic Trail main goal is to provide a safe bicycle and pedestrian route between Monterey and Santa Cruz Counties. Initially conceived by the Santa Cruz County Sanctuary Inter Agency Task Force, the project was then expanded into a trail network plan by the RTC to include additional transportation alignments, namely the Santa Cruz Branch Line Railroad right-of-way. The Sanctuary Scenic Trail will be a bicycle and pedestrian pathway that spans the entire coast of the Monterey Bay National Marine Sanctuary, from Pacific Grove to Santa Cruz. The vision of the project is to create a continuous, safe and accessible scenic trail for pedestrians, bicycles, and other users free of automobile traffic. Parts of the trail already exist in Monterey and Santa Cruz Counties, yet vital links are missing, especially between Marina and Aptos. The trail will include interpretive features that provide information on the National Marine Sanctuary, the surrounding communities, adjacent farmlands and natural habitats. A portion of the Santa Cruz County Monterey Bay Sanctuary Scenic Trail alignment was conceptually developed in conjunction with preparation of the Sanctuary Scenic Trail Standards Manual, June 2005. This document identifies an eleven mile "core-route" adjacent to the coastline between Wilder Ranch State Park and Seacliff Beach State Park. This initially defined "core-route" alignment has been incorporated into this Master Plan as shown on the alignment maps in Section 4.

Existing Monterey Bay Sanctuary Scenic Trail interpretive signage

Pacific Coast Bike Route

PACIFIC COAST BIKE ROUTE

In 1976, in honor of the Nation's Bicentennial, the American Revolution Bicentennial Commission of California and the California Department of Transportation developed the Pacific Coast Bicentennial Bike Route. The designated route began on Highway 101 at the California/Oregon State Line, and ended adjacent to Interstate 5 at the Mexican Border. In the early 1990's, the California State Legislature designated this route as the Pacific Coast Bike Route.

In Santa Cruz County, Highway 1 is recognized as the Pacific Coast Bike Route. The route generally follows Highway 1 north of Santa Cruz, surface streets in the cities and county urbanized areas, and along rural surface streets south of Aptos. Due to its spectacular scenery, the route draws many recreational bicycle riders, mountain bikers, charity ride participants, group riders, bike delivery operations, triathlons, and bicycle races. The Pacific Coast Bike Route has been incorporated into this Master Plan as shown on the alignment maps in Section 4.

Iowa Pacific Holdings train

3.1.3 EXISTING RAIL LINE

The 136-year old Santa Cruz Branch Rail Line corridor parallels Highway 1 extending almost 32 miles from the town of Pajaro in Monterey County to Davenport in Santa Cruz County. 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. The corridor links major tourism and activity centers as it traverses downtown Watsonville, Aptos Village, Capitola Village and the Santa Cruz Beach area near downtown Santa Cruz.

Iowa Pacific Holdings, operating as Santa Cruz and Monterey Bay Railway, is the freight operator and will implement freight, passenger, and recreational rail service. Iowa Pacific Holdings intends to run trains twice per week to serve existing freight customers. While passenger service is initially planned from Santa Cruz to Davenport, Iowa Pacific Holdings is exploring the possibility of service throughout the entire County and possibly beyond.

Existing multi-use trail south of Depot Park

3.1.4 EXISTING HIKING/WALKING TRAILS AND PUBLIC ACCESS AREAS

Each of the jurisdictions found within the trail plan area have prepared bicycle plans identifying existing routes. Currently, the unincorporated County of Santa Cruz has approximately 92 miles of bike lanes and 4 miles of bike paths. The City of Capitola has approximately 14 miles of bike lanes and less than 1 mile of Class I bike paths. The City of Santa Cruz has 48 miles of Class II bike lanes and approximately 10 miles of Class I bike paths. The City of Watsonville has approximately 18 miles of Class II bike lanes and 9 miles of Class I bike paths. These routes have been incorporated into the opportunities and constraints maps found in Appendix A. The proposed alignment described in Section 4 has taken into consideration the existing trails and recommends connections wherever possible with the intent of linking as many trails as possible along one continuous alignment.

3.2 OPPORTUNITY AND CONSTRAINT METHODOLOGY

The Master Plan area presents a range of opportunities and constraints for the proposed multi-use trail. Opportunities are defined as unique conditions that will facilitate implementation and/or enhance the operations and user experience of the trail. Constraints are defined as conditions that may negatively impact the feasibility, enjoyment, and/or operation of the trail. The project team gathered data for development of opportunities and constraints maps using the methodologies described below.

FIELD RESEARCH

The project team conducted an extensive three-day study of the Master Plan area that included development of field notes per trail segment, digital photography, ground truthing of aerial photography, and identification of potential alignment opportunities.

STAKEHOLDER AND PUBLIC INPUT

The RTC and project team collected input from agency and implementing entities staff and community stakeholders, including railroad staff, community groups, and business leaders. In addition, three county-wide community workshops were conducted in which over 200 members of the public were in attendance. These workshops provided the opportunity for members of the public to comment on the draft opportunity and constraints analysis and maps.

DOCUMENT RESEARCH

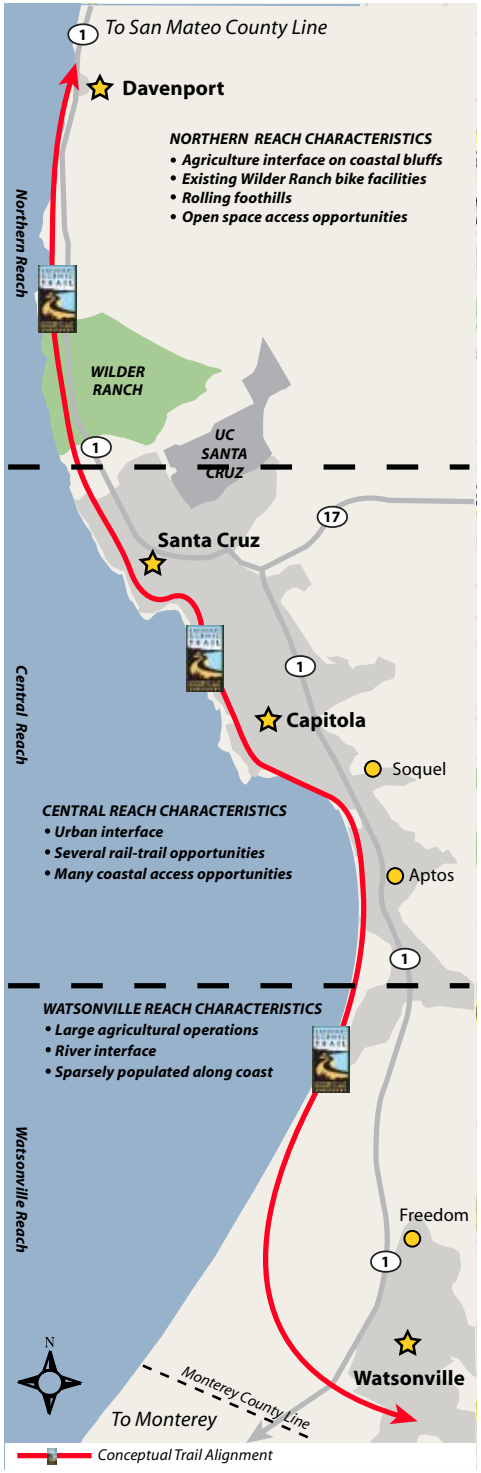
Over two dozen documents were reviewed by the project team in order to incorporate opportunities and constraints information prepared by others. The data collected for the opportunities and constraints was mapped and is included in Appendix A. This information was used in development of the proposed alignment.

3.2.1 REACH VS. SEGMENT

The Master Plan organizes the proposed trail alignment into two categories; reaches and segments.

A reach is defined as a geographic area identified by regional similarities, such as the urbanized areas of Santa Cruz, Capitola, and Aptos. The Master Plan area is divided into a Northern, Central, and Watsonville reach, which are further explained in Sections 3.3 through 3.5.

Segments are defined as potential trail projects with logical beginning and end points. The Master Plan trail alignment is divided into 20 segments with the intent that each segment will be funded, designed, and constructed as a whole. Each segment is described and mapped in Section 4.



Breathtaking vista looking at the northern reach of the trail alignment

3.3 NORTHERN REACH DESCRIPTION

The defined Northern Reach of the Monterey Bay Sanctuary Scenic Trail Network begins at the San Mateo/Santa Cruz county line Highway 1, just north of the Waddell Bluffs, and continues south to the northern City of Santa Cruz city limit near Schaffer Road. The Northern Reach is primarily narrow steep coastal bluffs from Waddell Creek to Yellow Bank Beach at Coastal Dairies and then opens up to rural agricultural land and natural coastal mesas south to Schaffer Road.

There are numerous small coves and beach strands with mostly informal footpaths down to the beach shore. Large sections of the coastal edge are owned by State Parks with several scenic rest stops along Highway 1 with passive recreation access to beaches, coastal bluffs, and inland parkland trails. Much of the land between Highway 1 and the coastal bluffs is managed under agricultural leases with intermittent public coastal access adjacent to the agricultural land. These intermittent access points vary from paved parking lots with restrooms, potable water, and scenic overlooks to unpaved informal roadway pullouts with difficult access to steep coastal bluff tops and beaches. An existing multi-use paved path parallels between the railroad corridor and Highway 1, heading north just over one mile from Schaffer Road to Wilder Ranch trailhead parking, off Highway 1. Many of the other public access points along the Northern Reach are poorly signed and provide limited quality trail access along the coast.

The railroad corridor parallels the coastal side of Highway 1 from Schaffer Road to Davenport, where the tracks cross Highway 1 to the inland side before ending one mile north of Davenport. Except for the crossing in Davenport, the railroad's offset from Highway 1 varies from 100 feet to ¼ mile distance from Schaffer Road to Scaroni Road then parallels Highway 1 at a distance of 50 feet to 100 feet as the coastal bluffs steepen and narrow toward Davenport. The rail tracks cross several small drainages with both wood trestles and box culverts in the Northern Reach. Much of the land is flat south of Coast Dairies with intermittent rolling hills giving way to steep coastal cliffs further north. Sensitive biological areas exist along perennial creeks and drainages and near coastal bluffs and sand dunes. Refer to Appendix A for more information on the Northern Reach opportunities and constraints. The Northern Reach is comprised of segments 1-5.

Coastal bluffs in the northern reach

Picnic facilities near Greyhound Rock

Rail tracks adjacent to Highway 1 looking south

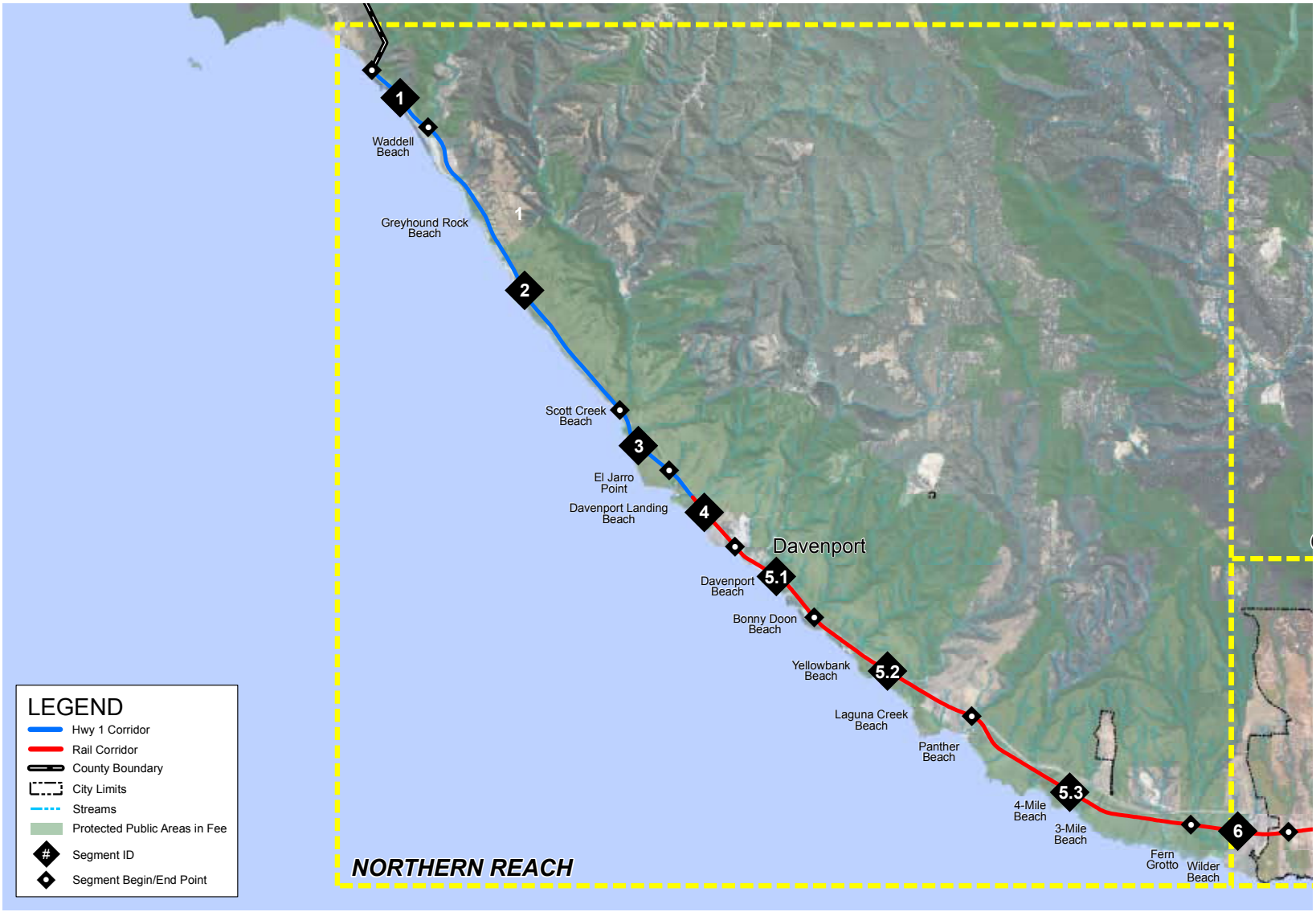


Figure 3-2 Northern Reach Location Map

3.4 CENTRAL REACH DESCRIPTION

Beginning at the City of Santa Cruz's northern city limit, near Schaffer Road, and extending southeast to Seascape Park just south of Aptos, this reach of the rail corridor traverses through densely populated coastal urban areas. The combination of intense urban development and the steep coastal edge in the Central Reach create many physical challenges. Within the Santa Cruz city limits the rail corridor parallels with many existing segments of the core route of the Monterey Bay Sanctuary Scenic Trail alignment. The existing Sanctuary Scenic Trail in the Central Reach is made up of many pedestrian and bike facility types with limited consistency to the overall network. Some sections are strictly in the street as Class III bike routes with no sidewalks; other areas are coastal edge pedestrian boardwalks with beach access and interpretive signs.

The rail corridor parallels the entire length of the existing Scenic Sanctuary Trail alignment and could serve as an alternate off-street, multi-use route connecting communities north and south to the regional network. Other challenges along the Central Reach are the many existing large rail bridge and trestle structure crossings. These structures are old, narrow in width, and span steep drainages and roadways. In one scenario the structure spans across a historic residential area in Capitola. The southern portion of the Central Reach parallels the coast meandering atop the steep coastal bluffs and multiple residential and resort areas. The Central Reach connects over six State Beaches, numerous coastal access points, parks, schools, and provides future connection opportunities for countless communities along the corridor. Refer to Appendix A for more information on the Central Reach opportunities and constraints. The Central Reach is comprised of Segments 6-14.

Santa Cruz Harbor

New Brighton State Beach

View of Capitola from the historic train trestle

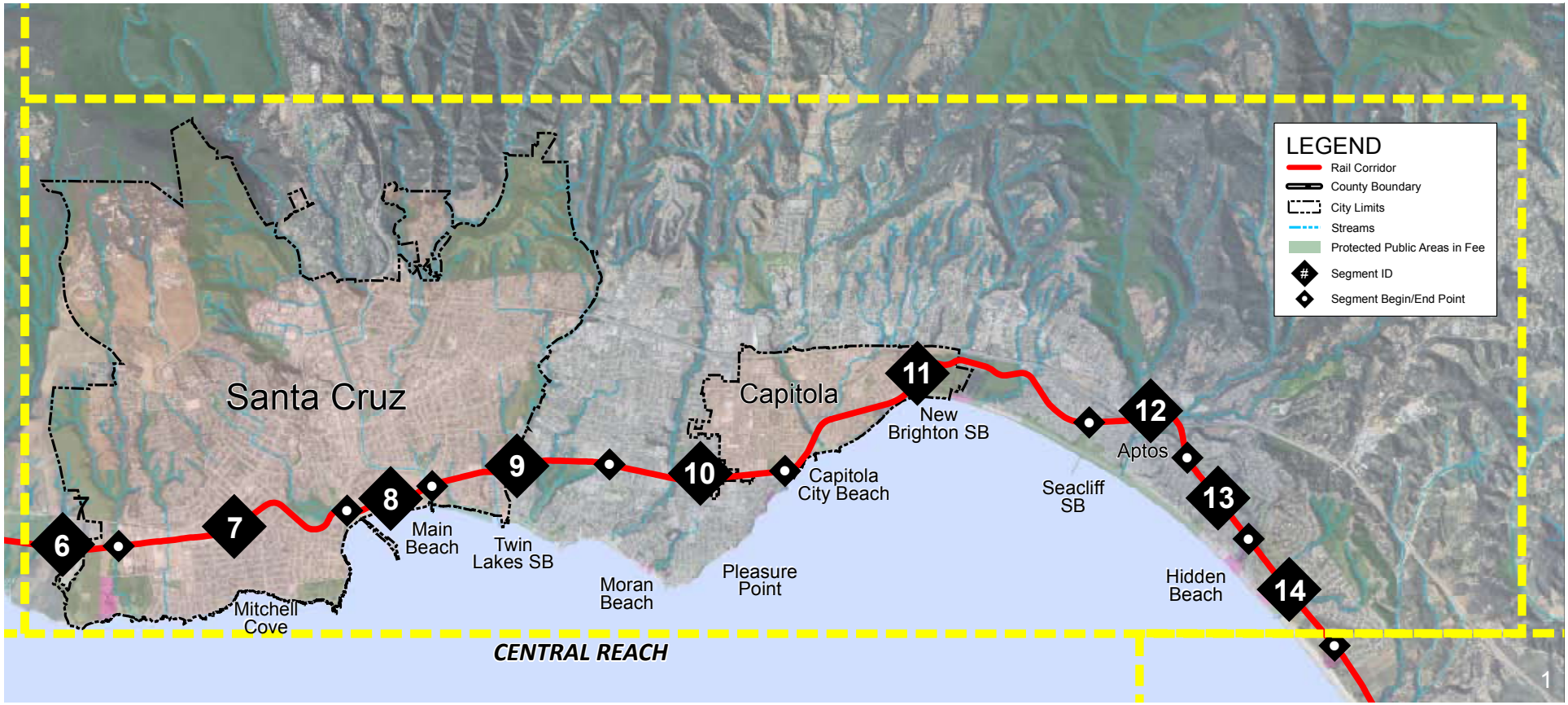


Figure 3-3 Central Reach Location Map

3.5 WATSONVILLE REACH DESCRIPTION

The Watsonville Reach of the Santa Cruz County portion of the Monterey Bay Sanctuary Scenic Trail begins at the railroad mile marker 10 near Seascape Village Park and ends at the Santa Cruz and Monterey County boarder at the Pajaro River. This reach only parallels the coastal edge for about one mile before it begins following the San Andreas Road alignment inland as it heads south and east. The landscape is primarily open space with some residential areas near Manresa and tapering off to rural farm and agricultural lands further to the south. The rail alignment eventually drifts away from San Andreas Road just south of railroad mile maker 7 and follows the inland side of a steep sloping mesa.

The Watsonville Reach stretch of the corridor travels through native woodlands, flanked on the west by agricultural land on top of the mesa and to the east, rural land sloping away to the Galighan Slough below. The Harkins Slough is a formidable wetland crossing with wide open fields intermittently flooded throughout the year. The rail crossing at the Harkins Slough is on a stretch of raised earthen dike. The rail line then crosses Watsonville Slough over a wooden trestle and passes through the center of the agricultural fields, just west of the City of Watsonville, eventually connecting to city park land and the downtown street network at Walker Street. The rail line crosses the Pajaro River to the south and ends at Porter Street in the town of Pajaro. Refer to Appendix A for more information on the Watsonville Reach opportunities and constraints. The Watsonville Reach is comprised of Segments 15-20.

View of Manresa State Beach parking lot from railroad tracks

Railroad tracks in Watsonville

Train trestle spanning the Pajaro River in Watsonville

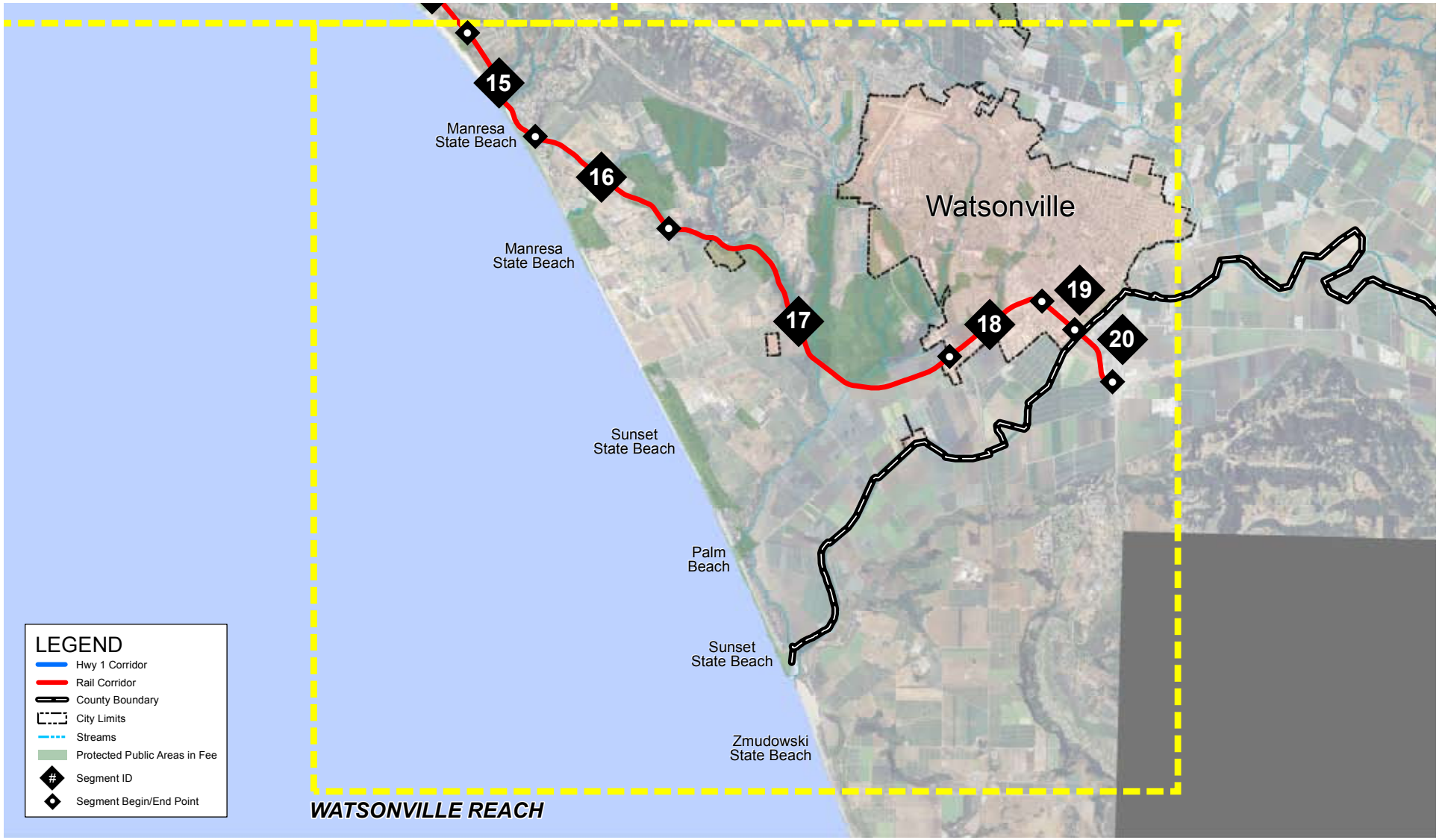


Figure 3-4 Watsonville Reach Location Map

3.6 ACTIVITY CENTERS

Significant public investment will be required to implement and maintain the proposed trail alignments. Therefore, the trail should link as many users as possible to achieve the maximum public benefit. The identification of activity centers is important to ensure that the planned trail routes connect people to the planned trail alignment. An activity center is defined as any place that can attract trail users, including recreational, civic, and educational centers that are located within 1/4 mile (for pedestrians) to one mile (for bicyclists) of the proposed trail alignment. Existing activity centers and their relationships to the trail planning area are listed below and identified on Table 3-1.

BEACHES

- Waddell Beach
- Greyhound Rock Beach
- Scott Creek Beach
- Davenport Landing Beach
- Davenport Beach
- Bonny Doon Beach
- Yellowbank Beach
- Three Mile Beach
- Four Mile Beach
- Natural Bridges State Beach
- Lighthouse Field State Beach
- Main Beach
- Seabright State Beach
- Twin Lakes State Beach
- Pleasure Point
- Capitola State Beach
- New Brighton Beach
- Seacliff State Beach
- La Selva Beach
- Manresa State Beach

PARKS AND RECREATION AREAS (PARTIAL LIST - 88 TOTAL)

- Big Basin Redwoods State Park
- Forest of Nisene Marks State Park
- Wilder Ranch State Park
- Wetlands of Watsonville City Trail Network
- Ellicott Slough
- Seascape Park
- Aptos Village Park
- Seaview Park
- River Park
- Twin Lakes Park
- Lighthouse Field State Beach
- Main Beach Park
- Depot Park
- Neary Lagoon Park
- Coast Dairies
- Sand Hills Bluffs
- Ramsay Park

Natural Bridges State Beach

Rio Del Mar Beach with updated signage

View of Ellicott Slough from railroad tracks

SCHOOLS

- 42 schools are located within 1 mile of the proposed trail alignment

CIVIC FACILITIES

- Simpkins Swim Center
- Santa Cruz Visitor Center

MAJOR EMPLOYMENT CENTERS

- City of Watsonville
- Granite Construction
- Santa Cruz Beach Boardwalk
- Santa Cruz City/County Government Center

MAJOR COMMERCIAL SHOPPING CENTERS

- Capitola Mall
- Downtown Santa Cruz
- Capitola Village
- Aptos Village
- Downtown Watsonville

CAMPING

- Sunset State Beach Campground
- Santa Cruz/Monterey Bay KOA Campground
- New Brighton State Beach Camping

MAJOR TOURIST DESTINATIONS

- Santa Cruz Beach Boardwalk
- The Mystery Spot
- Roaring Camp & Santa Cruz Railroads
- Steamer Lane Surfing
- Capitola Wharf
- Capitola Cement Ship
- Santa Cruz Harbor
- Santa Cruz Wharf
- Lighthouse Point
- Davenport Overlook
- Monterey Bay National Marine Sanctuary Exploration Center
- Watsonville Sloughs Nature Center

Santa Cruz Harbor

Monterey Bay National Marine Sanctuary Exploration Center

Photo Credit: NOAA

Pleasure Point Surfing

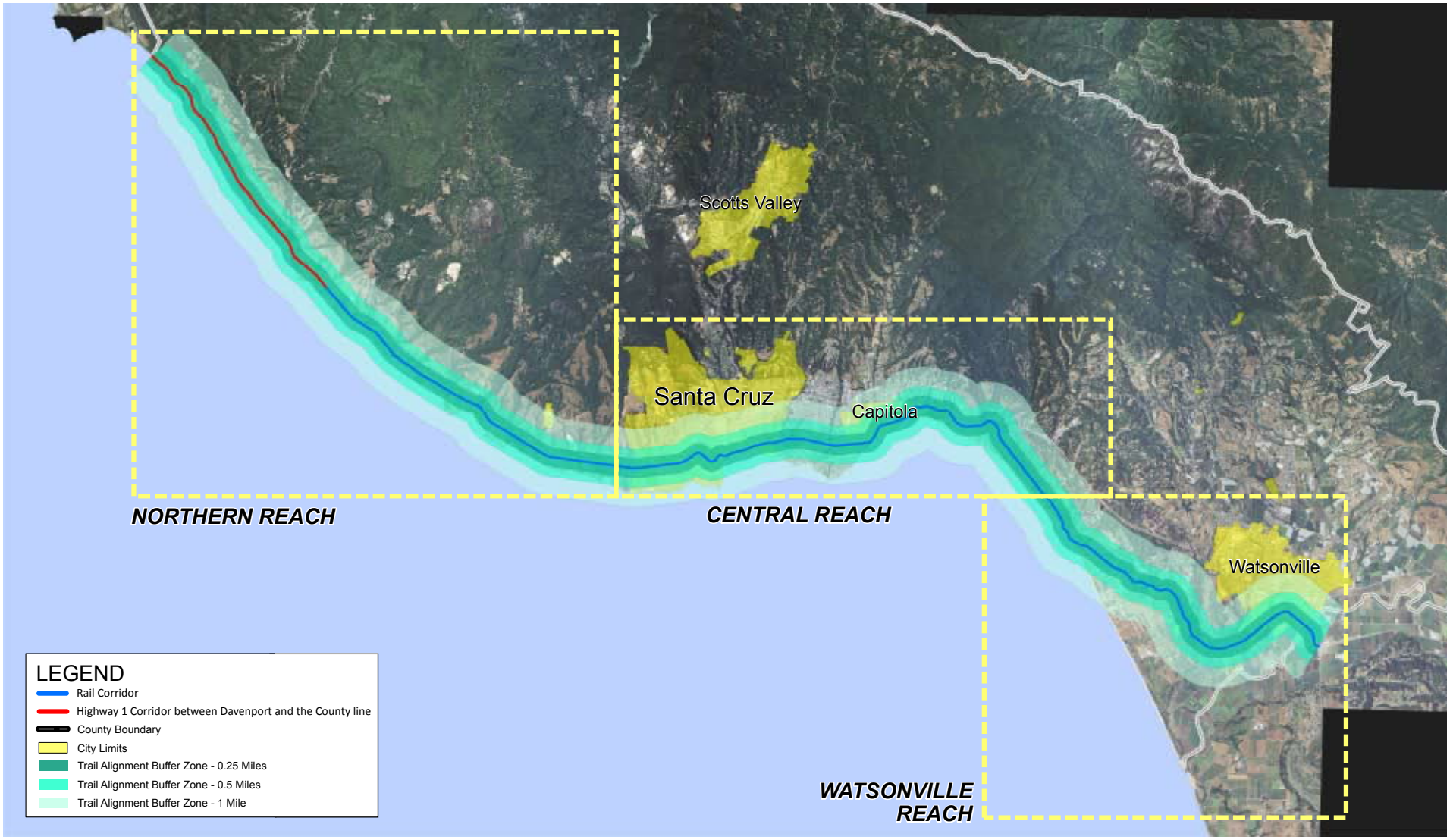


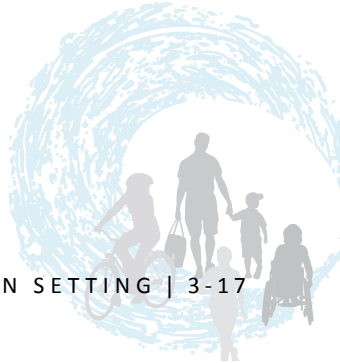
Figure 3-5 Activity Center Map Illustrating 1/4 mile, 1/2 mile , and 1 mile distances from the Coastal Rail Trail

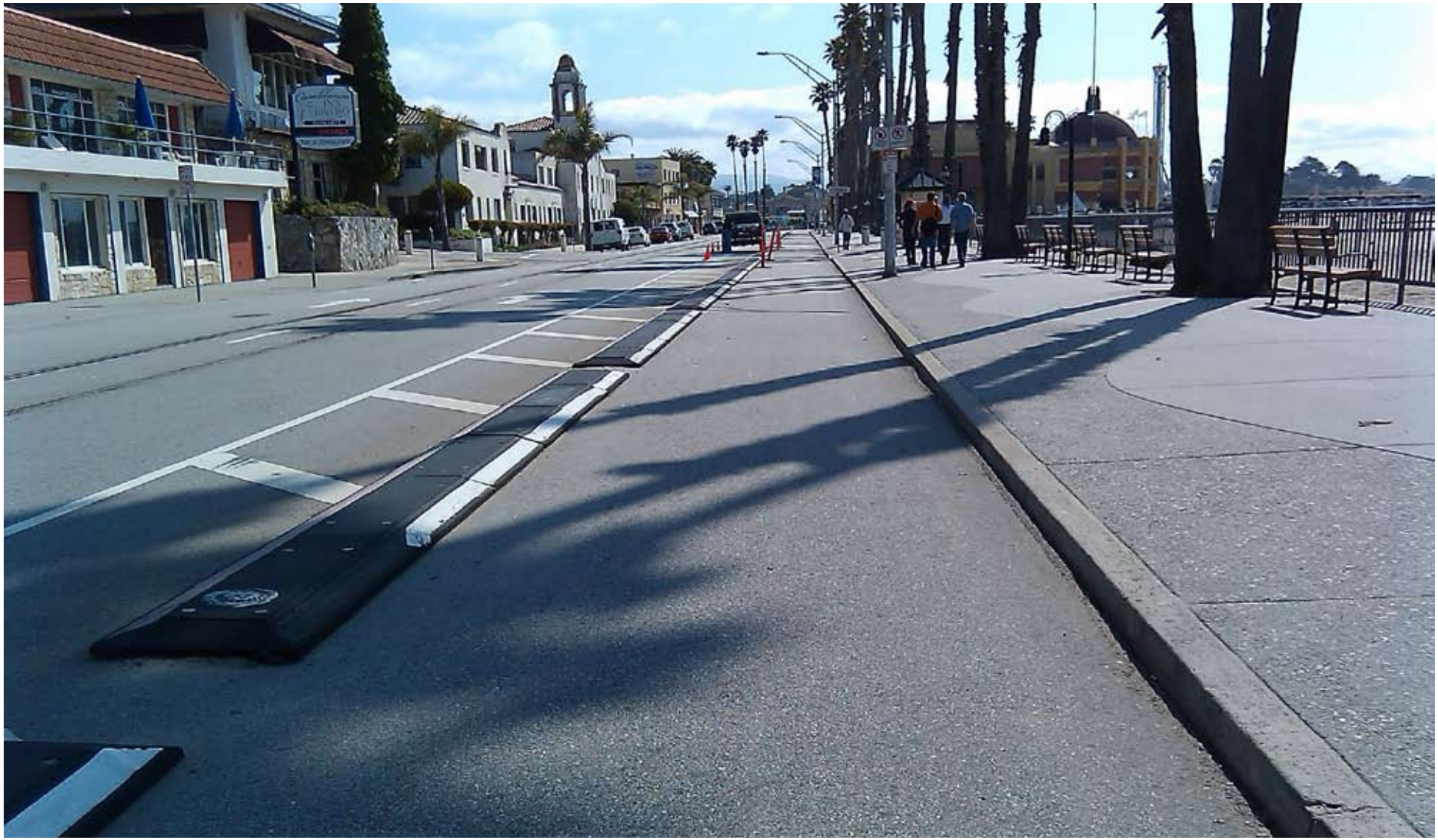
ACTIVITY CENTER TABLE

Table 3.1 identifies the activities found within each trail network segment. Activity centers have been separated into 1/4 mile, 1/2 mile, and 1 mile distances from the proposed trail alignment. The numbers within each column represent the number of instances the activity center occurs. This table corresponds with Figure 3-5.

TABLE 3.1 - Activity Center Type Per Segment

Trail Segment	1			2			3			4			5			6			7			8			9			10			11			12			13			14			15			16			17			18			19			20		
	Northern Reach																					Central Reach														Watsonville Reach																								
ACTIVITY CENTER	1/4	1/2	1	1/4	1/2	1	1/4	1/2	1	1/4	1/2	1	1/4	1/2	1	1/4	1/2	1	1/4	1/2	1	1/4	1/2	1	1/4	1/2	1	1/4	1/2	1	1/4	1/2	1	1/4	1/2	1	1/4	1/2	1	1/4	1/2	1	1/4	1/2	1	1/4	1/2	1	1/4	1/2	1	1/4	1/2	1	1/4	1/2	1
Beach	1			7			1			2			5			3			3			2	3		4	4	4	5				1		1						1			1																
State Beach																1	1	1			1		1	2		2			4				1		1	1		1			1			1						1			2					
Elementary School										1												2	5	1	1	2		1	1	1		1			1	1					1			1	1	2				1			1	1	2			
Junior/Senior High School																							2	2	3								1				1								1	2	2							4	1		
College																			1									1																														
Major Retail/ Shopping Mall													1										1			1																																
Market																						2			1	4		2			1	1		1												1										
Employment Center										1																																			3												
Public Facility																						2	1		3	1			1															1		1						4					
Public Park							1															10	7	3	6	5	2	5	3	1	1			1			1					1						2				2	1	3		
State Park	1	1	1													1	1	1				1	1	1				1		1		1					1					1						1								
Tourist Destination	1	1	1							1									1			1	1		1			4		1	1			1			1	1				1														
Trail Connection	2	2	2													8			5			2			2			2						1			1			3	4		2			3			1			1			1		
TOTAL	**5**	**4**	**4**	**7**	**0**	**0**	**2**	**0**	**0**	**5**	**0**	**0**	**6**	**0**	**0**	**13**	**2**	**2**	**7**	**2**	**0**	**23**	**23**	**7**	**23**	**17**	**6**	**25**	**5**	**4**	**3**	**5**	**1**	**6**	**2**	**1**	**5**	**2**	**0**	**5**	**5**		**7**	**0**	**0**	**9**	**3**	**7**	**4**	**0**	**0**	**6**	**0**	**0**	**6**	**3**	**7**	**5**	**0**	**0**





Two-way cycle track adjacent to the sidewalk near the Santa Cruz Beach Boardwalk

This section focuses on the recommended trail alignment maps. The recommended alignment has been studied to determine the most appropriate, functional, and cost-effective option for each trail segment. Potential "spur" routes have also been identified, such as connections to scenic vistas, retail destinations, employment generators, transit, residential, trails, and other recreational areas.

SECTION FOUR CONTENTS

SECTION FOUR
TRAIL ALIGNMENT

SECTION FOUR CONTENTS CONTINUED

Lighthouse Field State Beach, Steamer Lane, and the Santa Cruz Surfing Museum

Two-way Cycle Track on Beach Street near Santa Cruz Beach Boardwalk

Bicycle with Surfboard Carrier Attachment

Scenic Forest in Capitola

4.0 TRAIL ALIGNMENT OVERVIEW

The alignments described in this section represent the preferred trail alignment along the railroad right-of-way and connections to existing and proposed on-street facilities, in the context of the project goals for the MBSST alignment through Santa Cruz County. The methodology used to identify the preferred alignment included the following criteria and objectives:

- Available width on railroad right-of-way
- Physical obstructions on railroad right-of-way including crossings
- Non-motorized facility
- Adjacent land uses and accessibility
- Number and type of grade crossings
- Traffic volumes and speeds
- Access to major activity centers
- Integration into existing bicycle routes and pedestrian facilities
- Minimize or eliminate railroad grade crossings
- Ability to utilize existing facilities
- Cost factors

The MBSST network alignment along the upper coast of the county along State Highway 1 and the railroad right-of-way down coast from Davenport to Watsonville has been divided into 20 segments with logical beginning and end points. The intent of this approach is to encourage each segment to be independently funded, designed, and constructed as a complete system until the adjacent segment phases are added to the network. In some instances a segment may cross jurisdictional boundaries, in which case the RTC will work with the appropriate jurisdictions to develop a coordination process and plan. In other instances, development of an interim alignment may be a necessary solution before reaching the long-term preferred alignment goal.

Each segment contains a brief statement on the boundary determination rationale which provides details on how the segment start and end point were determined. Segment boundaries were developed as a result of the opportunities and constraints analysis found in Appendix A. This is followed by a detailed description of the existing and proposed facilities within the segment reach including trail alignments, prominent geographical features, safety and hazards, access, amenities, and other physical points of interest.

The segments feature the alignment of the approximately 31-mile Coastal Rail Trail, along with spur trails, incorporating sections of the California Coastal Trail, and the previously identified 11-mile core alignment found in the Monterey Bay Sanctuary Scenic Trail Standards Manual.

All trail segments include one or more of the following trail types:

MULTI-USE PAVED PATH

A multi-use paved path is a derivative from the Caltrans-defined Class I bikeway. A Class I bike path provides bicycle travel on a paved right-of-way, completely separated from any street or highway. A multi-use paved path permits a variety of users, in addition to bicyclists, including walkers, joggers, wheelchairs, and scooters.

DESIGNATED BICYCLE LANE (CLASS II)

Designated bicycle lanes are synonymous with Caltrans defined Class II bike lanes. Often referred to as a "bike lane", an on-street bike lane provides a striped and stenciled lane for one-way travel on a street or highway.

ON-STREET BIKE ROUTE (CLASS III)

On-street bike routes are synonymous with Caltrans-defined Class III bike routes. Generally referred to as a "bike route", an on-street bike route provides for shared use with motor vehicle traffic and is identified only by signing. Optional shared roadway bicycle marking pavement stencils are also available for use on Class III bike routes.

UNPAVED TRAIL SURFACE

Unpaved trail surfaces are located in the remote areas of the corridor including the northern most portion of the northern reach and the southern most portion of the Watsonville Reach. Unpaved trails are five to six feet wide through steep terrain and sensitive areas. To keep the trail as maintenance free as possible, these trails are designed to avoid exceeding grades greater than 12% when possible. Unpaved trails may require some hand tooled segments with drainage crossings, blending with the site character and slope as much as possible.

For more information regarding trail types, see Section 5.

General Location of the San Mateo County/Santa Cruz County Line - the northern terminus of the project study area

Waddell Bluffs Looking North

Waddell Bluffs

Año Nuevo Bay

4.1 SEGMENT 1 - WADDELL BLUFFS

Length: 1.06 miles (5,600 LF) - North county line to Waddell Beach parking

4.1.1 SEGMENT 1 BOUNDARY DETERMINATION

The north and down coast boundaries of Segment 1 were determined by the existing short stretch of narrow beachfront cliffs on the coastal side of Highway 1, the steep Waddell Bluffs inland of Highway 1, and the overall limited road right-of-way. The Waddell Bluffs geological erosion hazards define this short segment, posing safety challenges for all modes of travel from the northern Santa Cruz County line down coast to Waddell Beach. The MBSST corridor is constrained to the coastal side of the Highway 1 right-of-way which is limited to a narrow paved road shoulder.

4.1.2 SEGMENT 1 DESCRIPTION

Segment 1 is the northernmost point of the MBSST corridor in Santa Cruz County. The Highway 1 right-of-way is severely limited in width by the narrow sea cliffs on the coastal side of Highway 1 and the steep eroding cliffs above the roadway on the inland edge known as the Waddell Bluffs. This segment of the proposed alignment will consist of the existing paved road shoulders for bikes as a Class III facility along Highway 1 and limited room for a proposed unpaved shoulder for pedestrians on the coastal side of Highway 1. At present, in accordance with its coastal permit for seasonal sediment disposal, Caltrans dresses the unpaved seaward shoulder for pedestrian travel.

The eroding cliff faces of the Waddell Bluffs are considered a geological hazard that will be a long-term constraint for possible enhancements for the inland side of Highway 1 in this area. The main parking at Waddell Beach, down coast from the Waddell Bluffs, is a safer and more feasible location for the trail beginning and ending point in the north county. Waddell Beach currently provides vehicular parking, a regional bus stop, restroom facilities, drinking water, coastal access, scenic coastal views, and a junction point for the Skyline to the Sea Trail system in Big Basin Redwoods State Park, on the inland side of Highway 1. It is anticipated that the new Big Basin Redwoods State Park General Plan will call for an underpass to safely connect Waddell Beach to inland portions of the park. Caltrans expects to replace the outmoded Waddell Creek Bridge on Highway 1 at an indefinite time in the future, as funds become available. This will present an opportunity to provide an underpass facility as recommended by the State Park General Plan. This segment is in proximity to 13 activity centers, as identified in Table 3.1.

Segment 1 Proposed Improvements:

- 1.06 miles (5,600 LF) - Class III on-street/road shoulder bike route
- Unpaved roadway shoulder on coastal side of Highway 1

TABLE 4.1 Segment 1 - Waddell Bluffs				
Segment Length	**1.06 miles (5,600 LF) - Waddell Bluffs**			
Rail Trail Portion	0.0 miles (0 LF)			
Coastal Trail Portion	1.06 miles (5,600 LF)			
Segment Phase	**II**			
Segment Cost	**$91,930**			

Rail Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$28,000
Bridge Structures	0	Each	Varies	$0
At-Grade Crossings (Rail Tracks or Streets)	0	Each	Varies	$0
			Rail Trail Construction Cost Subtotal	**$28,000**

Coastal Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Unpaved Trail	1,000	Linear Feet	Varies	$7,800
On Street Facilites (Class II, III and Sidewalks)	4,600	Linear Feet	Varies	$27,600
			Coastal Trail Construction Cost Subtotal	**$35,400**

Cost Summary	
Construction Cost Total	$63,400
Design and Engineering (15%)	$9,510
Design Contingency (20%)	$12,680
Environmental Permitting (10%)	$6,340
SEGMENT TOTAL COST	**$91,930**

Segment Features	Description	Quantity
Segment Jurisdictional Area	Caltrans ROW	-
Major Drainage	Waddell Creek	1
Existing Staging Areas/Rest Stops	Waddell Beach Parking Lot	1
Connection To Other Trails	Skyline to the Sea Trail, Big Basin State Park	1
Connection to Public Beach	Waddell Beach	1
Connection to Passive Park	Big Basin State Park	1

Waddell bluffs overlook

Waddell Beach parking, restrooms, and trail head

Waddell Creek looking northeast

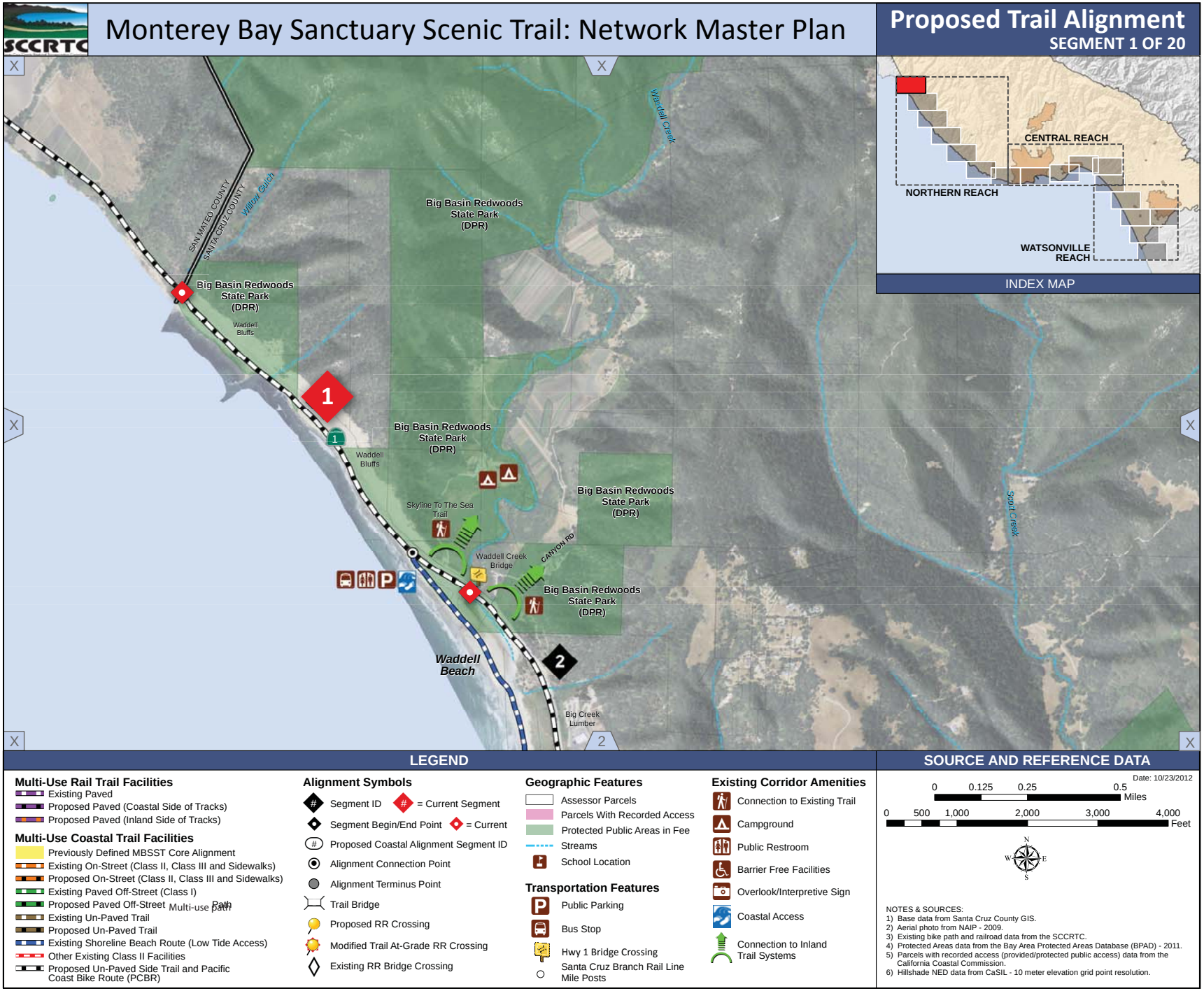

Monterey Bay Sanctuary Scenic Trail: Network Master Plan
Proposed Trail Alignment
SEGMENT 1 OF 20
CENTRAL REACH
NORTHERN REACH
WATSONVILLE REACH
INDEX MAP
SAN MATEO COUNTY
SANTA CRUZ COUNTY
Willow Gulch
Waddell Creek
Big Basin Redwoods State Park (DPR)
Waddell Bluffs
Skyline To The Sea Trail
Waddell Creek Bridge
CANYON RD
Spot Creek
Waddell Beach
Big Creek Lumber
LEGEND
Multi-Use Rail Trail Facilities
Existing Paved
Proposed Paved (Coastal Side of Tracks)
Proposed Paved (Inland Side of Tracks)
Multi-Use Coastal Trail Facilities
Previously Defined MBSST Core Alignment
Existing On-Street (Class II, Class III and Sidewalks)
Proposed On-Street (Class II, Class III and Sidewalks)
Existing Paved Off-Street (Class I)
Proposed Paved Off-Street Multi-use path
Existing Un-Paved Trail
Proposed Un-Paved Trail
Existing Shoreline Beach Route (Low Tide Access)
Other Existing Class II Facilities
Proposed Un-Paved Side Trail and Pacific Coast Bike Route (PCBR)
Alignment Symbols
Segment ID
= Current Segment
Segment Begin/End Point
= Current
Proposed Coastal Alignment Segment ID
Alignment Connection Point
Alignment Terminus Point
Trail Bridge
Proposed RR Crossing
Modified Trail At-Grade RR Crossing
Existing RR Bridge Crossing
Geographic Features
Assessor Parcels
Parcels With Recorded Access
Protected Public Areas in Fee
Streams
School Location
Transportation Features
Public Parking
Bus Stop
Hwy 1 Bridge Crossing
Santa Cruz Branch Rail Line Mile Posts
Existing Corridor Amenities
Connection to Existing Trail
Campground
Public Restroom
Barrier Free Facilities
Overlook/Interpretive Sign
Coastal Access
Connection to Inland Trail Systems
SOURCE AND REFERENCE DATA
Date: 10/23/2012
0 0.125 0.25 0.5 Miles
0 500 1,000 2,000 3,000 4,000 Feet
N
W
E
S
NOTES & SOURCES:
1) Base data from Santa Cruz County GIS.
2) Aerial photo from NAIP - 2009.
3) Existing bike path and railroad data from the SCCRTC.
4) Protected Areas data from the Bay Area Protected Areas Database (BPAD) - 2011.
5) Parcels with recorded access (provided/protected public access) data from the California Coastal Commission.
6) Hillshade NED data from CaSIL - 10 meter elevation grid point resolution.

Figure 4-1

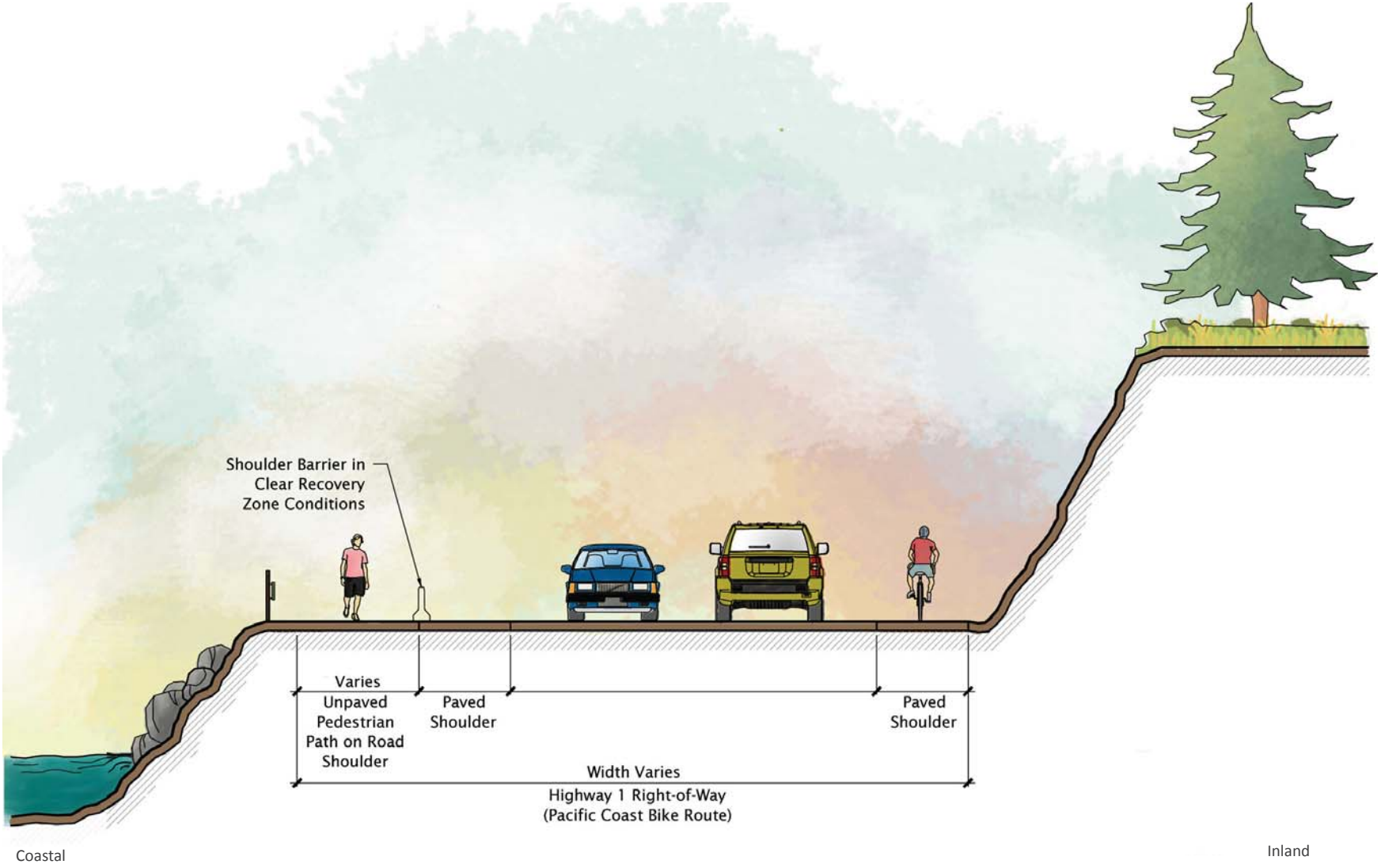


Figure 4-2 Segment 1 Section - North of Waddell Creek

Waddell Creek Bridge - too narrow for bicyclists

Greyhound Rock Beach

Picnic facilities at Greyhound Rock Beach

4.2 SEGMENT 2 - GREYHOUND ROCK - CAL POLY BLUFFS

Length: 4.77 Miles (25,170 LF) - Waddell Beach parking to Scott Creek

4.2.1 SEGMENT 2 BOUNDARY DETERMINATION

The Segment 2 boundary is determined by the existing Waddell Creek/Highway 1 bridge crossing down coast to the existing Scott Creek Beach/Highway 1 bridge crossing. The corridor is consistently narrow and may potentially require similar design improvement measures to link the publicly-held lands from Greyhound Rock Beach down coast to Scott Creek Beach. The trail alignment opportunity could include sharing portions of the coastal-side edge of Highway 1 Caltrans right-of-way and optional bluff-top trails within the Big Basin Redwoods State Park lands.

4.2.2 SEGMENT 2 DESCRIPTION

Segment 2 starts with the Highway 1/Waddell Creek Bridge crossing. The existing concrete bridge across Waddell Creek is narrow with no room to safely include adequate shoulders for bike access or pedestrian sidewalks. The future plans for the Highway 1 bridge replacement should consider at minimum, an 8-ft wide shoulder and 4-ft wide sidewalks for safe bicycle/pedestrian access. The new bridge may be realigned to the inland side of the existing location so the old bridge could be repurposed as a multi-use path crossing for Waddell Creek. The private land on the coastal side of Highway 1, down coast of Waddell Beach, limits the trail alignment to the Highway 1 right-of-way. This scenario continues for roughly one-quarter mile down coast to the Greyhound Rock Beach park boundary. Greyhound Rock Beach currently provides accessible parking, public restrooms, drinking water, a scenic overlook, and moderately difficult coastal access.

Along the coastal bluffs on the coastal side of Highway 1, there are areas between the coastal bluffs and the roadway edge for future trail facilities within Greyhound Rock Beach land. However, the land ownership changes from public to private roughly one-half mile down coast of the Greyhound Rock Beach public parking lot. There are three to four locations where the road shoulder edge is adjacent to the coastal cliffs with no room for off-street trail facilities. These sporadic, narrow, cliff-edge locations range from 100 to several hundred LF. The existing paved road shoulders continue down coast to Scott Creek Beach County Park, however the existing narrow Highway 1 bridge crossing at Scott Creek does not include adequate paved shoulders for safe bike/pedestrian access. The road right-of-way at the bridge abutment has steep shoulders at the bridge approach and Scott Creek meanders several hundred feet north along the coastal side of the highway, as it approaches the sea, leaving little to no room for an off-road trail connection in this stretch. Scott Creek Beach County Park currently provides visitor parking, coastal access, and a transit stop. The MBSST up coast from Scott Creek is forced into the State Highway 1 right-of-way due to both private land on the coastal side of Highway 1 and or coastal cliff adjacency to the roadway shoulder. The feasibility of a sidepath on the coastal side of Highway 1 will be dependant primarily on available stable land and Caltrans design standards. Sidepaths within Highway 1 right-of-way and clear recovery zone distances will vary due to limited space between the coastal cliffs and the available room adjacent to the road shoulder. In many areas along Segment 2 between Scott Creek and Greyhound Rock Beach there are areas where even a road shoulder is hardly achievable do to the narrow and eroding coastal bluffs. There are short stretches of sidepaths along the coastal side of Highway 1 where a shoulder may be possible. Most of this reach of the coast has existing road shoulders adjacent to steep sloping cliffs. Caltrans may require wider recovery zones where sidepaths are possible. Caltrans also requires a barrier for sidepaths in areas where the recovery zone is at a minimum distance or less. Caltrans indicates the use of traditional concrete or steel barriers with a preference for cable barriers between the recovery zone and path. This segment has close proximity to seven (7) activity centers, as identified in Table 3.1.

Segment 2 Proposed Improvements:

- 4.77 miles, primarily existing road shoulder improvements due to limited available space and adjacent public land on coastal side of State Highway 1
- Routine road edge clearing, signs, and shoulder pavement striping

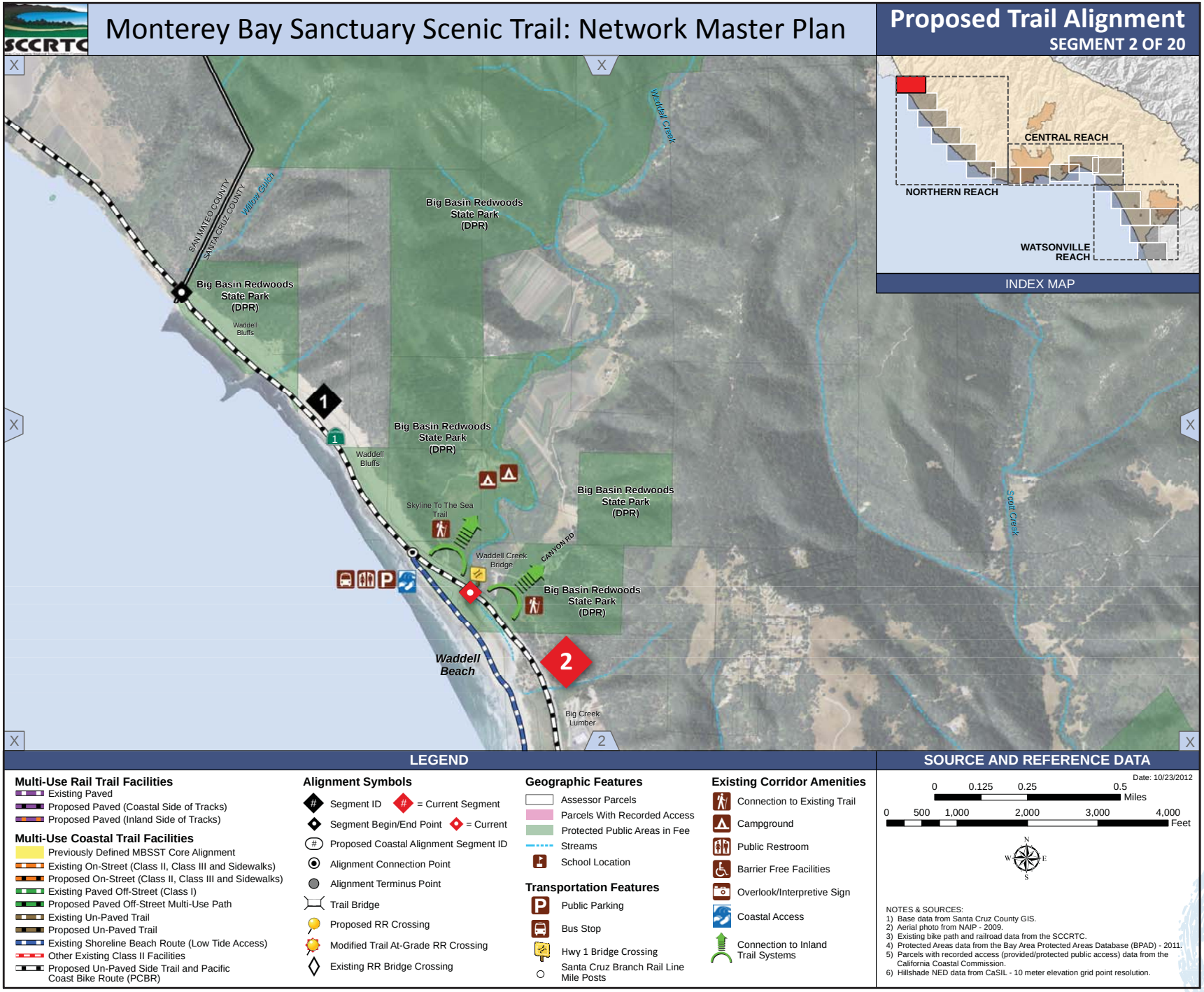
TABLE 4.2 Segment 2 - Greyhound Rock-Cal Poly Bluffs				
Segment Length	**4.77 miles (25,170 feet) - Greyhound Rock-Cal Poly Bluffs**			
Rail Trail Portion	0.0 miles (0 LF)			
Coastal Trail Portion	4.77 miles (25,170 LF)			
Segment Phase	**II**			
Segment Cost	**$253,779**			
Rail Trail Components	**Quantitiy**	**Unit**	**Unit Price**	**Cost**
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$24,000
Bridge Structures	0	Each	Varies	$0
At-Grade Crossings (Rail Tracks or Streets)	0	Each	Varies	$0
			Rail Trail Construction Cost Subtotal	**$24,000**
Coastal Trail Components	**Quantitiy**	**Unit**	**Unit Price**	**Cost**
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Unpaved Trail	0	Linear Feet	Varies	$0
On Street Facilites (Class II, III and Sidewalks)	25,170	Linear Feet	$6	$151,020
			Coastal Trail Construction Cost Subtotal	**$151,020**
Cost Summary				
Construction Cost Total				$175,020
Design and Engineering (15%)				$26,253
Design Contingency (20%)				$35,004
Environmental Permitting (10%)				$17,502
			SEGMENT TOTAL COST	**$253,779**

Segment Features	Description	Quantity
Segment Jurisdictional Area	Caltrans ROW, State Park Lands	-
Major Drainage	Waddell Creek, Scott Creek	2
Existing Staging Areas/Rest Stops	Greyhound Rock Beach Parking/Scott Creek Beach	2
Connection To Other Trails	Bluff-top trails at Greyhound Rock Beach Park	2
Connection to Public Beach	Greyhound Rock State Beach/Scott Creek Beach	2

View from Greyhound Rock Beach overlook

Public access to Greyhound Rock Beach

Caltrans approved cable barrier


Monterey Bay Sanctuary Scenic Trail: Network Master Plan
Proposed Trail Alignment
SEGMENT 2 OF 20
CENTRAL REACH
NORTHERN REACH
WATSONVILLE REACH
INDEX MAP
SAN MATEO COUNTY
SANTA CRUZ COUNTY
Willow Gulch
W. Waddell Creek
Big Basin Redwoods State Park (DPR)
Waddell Bluffs
Skyline To The Sea Trail
Waddell Creek Bridge
CANYON RD
Scott Creek
Waddell Beach
Big Creek Lumber
LEGEND
Multi-Use Rail Trail Facilities
Existing Paved
Proposed Paved (Coastal Side of Tracks)
Proposed Paved (Inland Side of Tracks)
Multi-Use Coastal Trail Facilities
Previously Defined MBSST Core Alignment
Existing On-Street (Class II, Class III and Sidewalks)
Proposed On-Street (Class II, Class III and Sidewalks)
Existing Paved Off-Street (Class I)
Proposed Paved Off-Street Multi-Use Path
Existing Un-Paved Trail
Proposed Un-Paved Trail
Existing Shoreline Beach Route (Low Tide Access)
Other Existing Class II Facilities
Proposed Un-Paved Side Trail and Pacific Coast Bike Route (PCBR)
Alignment Symbols
Segment ID
= Current Segment
Segment Begin/End Point
= Current
Proposed Coastal Alignment Segment ID
Alignment Connection Point
Alignment Terminus Point
Trail Bridge
Proposed RR Crossing
Modified Trail At-Grade RR Crossing
Existing RR Bridge Crossing
Geographic Features
Assessor Parcels
Parcels With Recorded Access
Protected Public Areas in Fee
Streams
School Location
Transportation Features
Public Parking
Bus Stop
Hwy 1 Bridge Crossing
Santa Cruz Branch Rail Line Mile Posts
Existing Corridor Amenities
Connection to Existing Trail
Campground
Public Restroom
Barrier Free Facilities
Overlook/Interpretive Sign
Coastal Access
Connection to Inland Trail Systems
SOURCE AND REFERENCE DATA
Date: 10/23/2012
0 0.125 0.25 0.5 Miles
0 500 1,000 2,000 3,000 4,000 Feet
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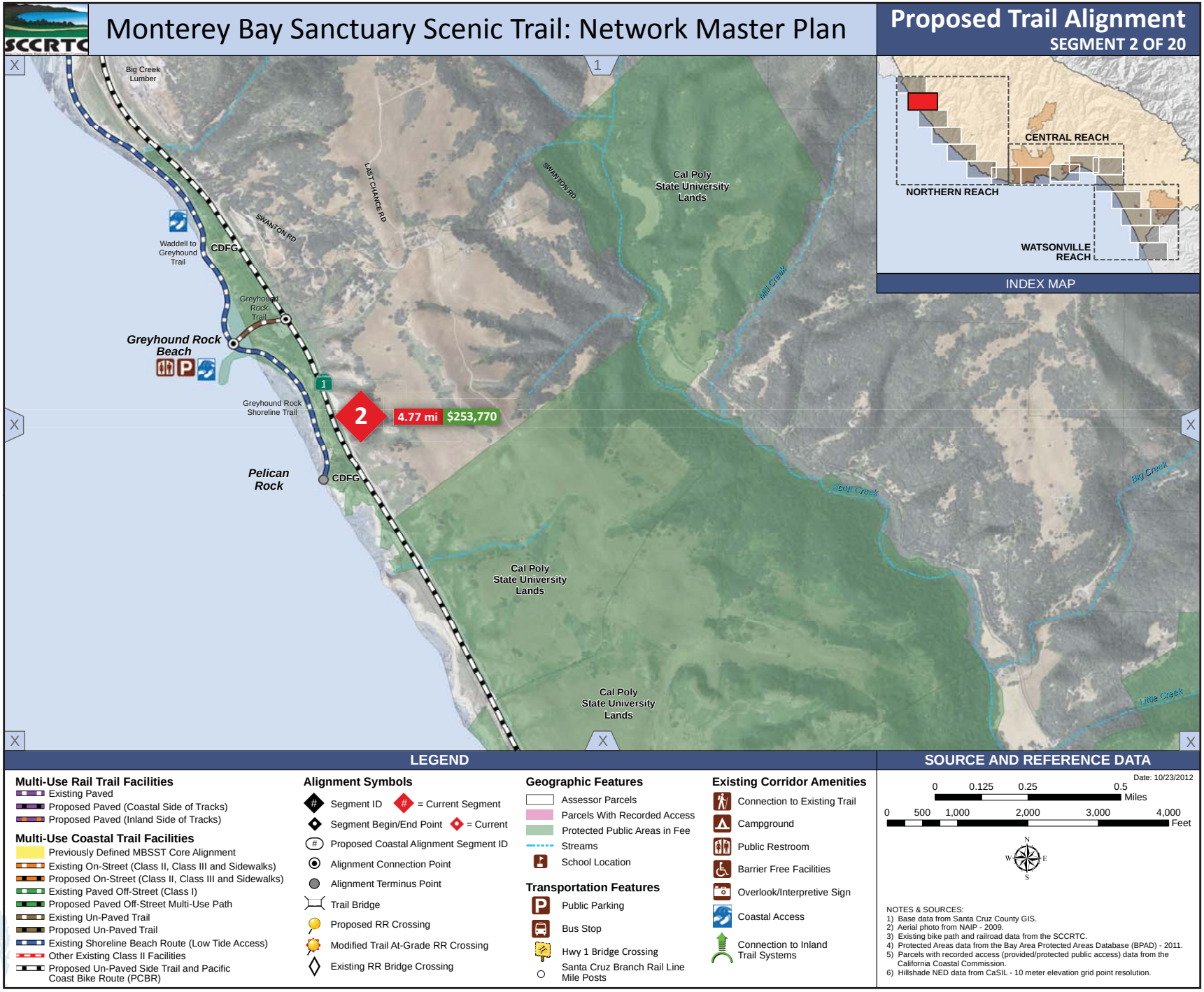
NOTES & SOURCES:
1) Base data from Santa Cruz County GIS.
2) Aerial photo from NAIP - 2009.
3) Existing bike path and railroad data from the SCCRTC.
4) Protected Areas data from the Bay Area Protected Areas Database (BPAD) - 2011.
5) Parcels with recorded access (provided/protected public access) data from the California Coastal Commission.
6) Hillshade NED data from CaSIL - 10 meter elevation grid point resolution.

Figure 4-3


Monterey Bay Sanctuary Scenic Trail: Network Master Plan
SCCRTC
Proposed Trail Alignment
SEGMENT 2 OF 20
CENTRAL REACH
NORTHERN REACH
WATSONVILLE REACH
INDEX MAP
Big Creek Lumber
LAST CHANCE RD
SWANTON RD
Cal Poly State University Lands
Waddell to Greyhound Trail
CDFG
Greyhound Rock Trail
Greyhound Rock Beach
Greyhound Rock Shoreline Trail
2
4.77 mi
$253,770
Pelican Rock
Mill Creek
Scott Creek
Big Creek
Little Creek
LEGEND
Multi-Use Rail Trail Facilities
Existing Paved
Proposed Paved (Coastal Side of Tracks)
Proposed Paved (Inland Side of Tracks)
Multi-Use Coastal Trail Facilities
Previously Defined MBSST Core Alignment
Existing On-Street (Class II, Class III and Sidewalks)
Proposed On-Street (Class II, Class III and Sidewalks)
Existing Paved Off-Street (Class I)
Proposed Paved Off-Street Multi-Use Path
Existing Un-Paved Trail
Proposed Un-Paved Trail
Existing Shoreline Beach Route (Low Tide Access)
Other Existing Class II Facilities
Proposed Un-Paved Side Trail and Pacific Coast Bike Route (PCBR)
Alignment Symbols
Segment ID
= Current Segment
Segment Begin/End Point
= Current
Proposed Coastal Alignment Segment ID
Alignment Connection Point
Alignment Terminus Point
Trail Bridge
Proposed RR Crossing
Modified Trail At-Grade RR Crossing
Existing RR Bridge Crossing
Geographic Features
Assessor Parcels
Parcels With Recorded Access
Protected Public Areas in Fee
Streams
School Location
Transportation Features
Public Parking
Bus Stop
Hwy 1 Bridge Crossing
Santa Cruz Branch Rail Line Mile Posts
Existing Corridor Amenities
Connection to Existing Trail
Campground
Public Restroom
Barrier Free Facilities
Overlook/Interpretive Sign
Coastal Access
Connection to Inland Trail Systems
SOURCE AND REFERENCE DATA
Date: 10/23/2012
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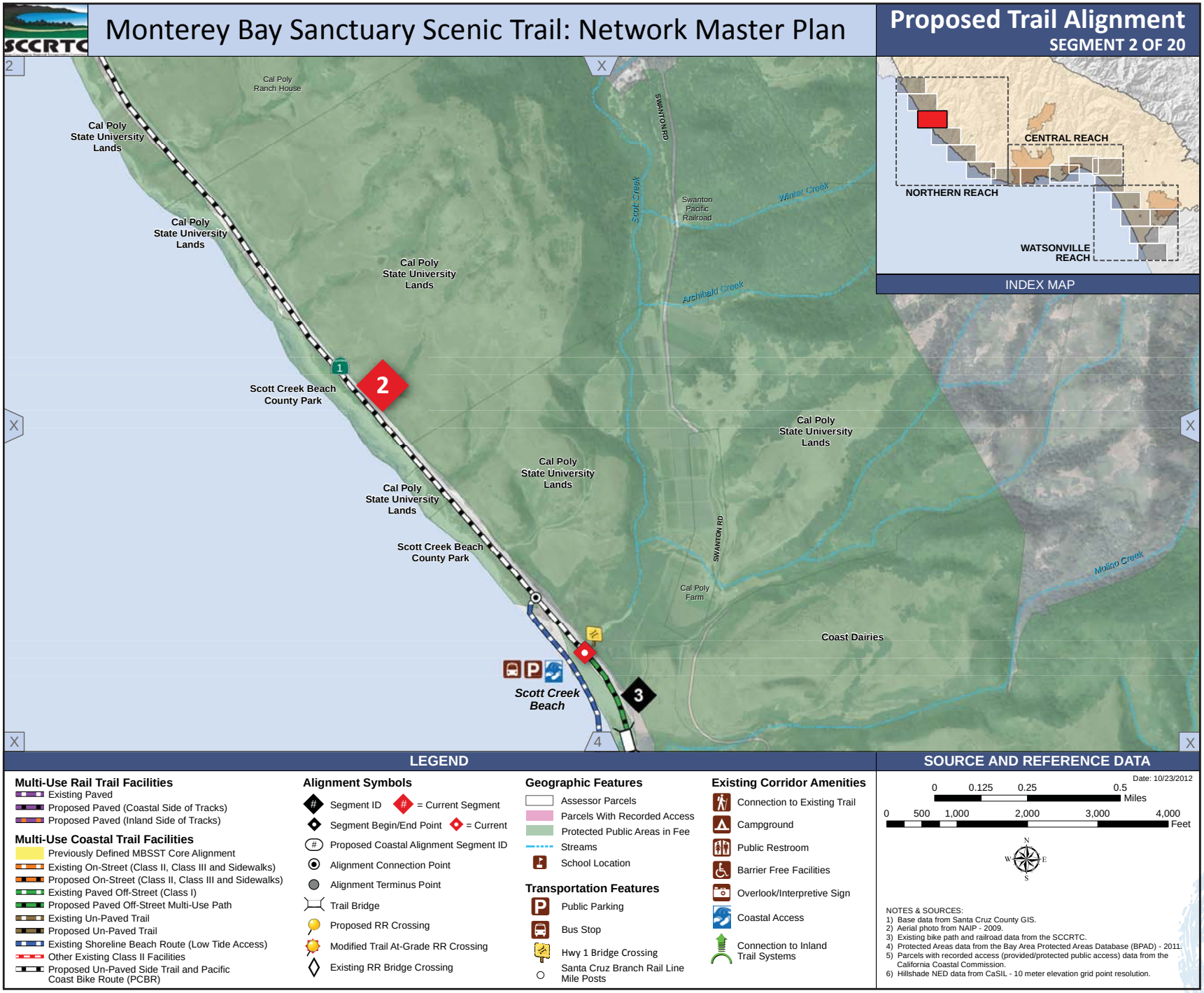
6) Hillshade NED data from CaSIL - 10 meter elevation grid point resolution.

Figure 4-4


Monterey Bay Sanctuary Scenic Trail: Network Master Plan
Proposed Trail Alignment
SEGMENT 2 OF 20
INDEX MAP
CENTRAL REACH
NORTHERN REACH
WATSONVILLE REACH
Cal Poly Ranch House
Cal Poly State University Lands
Swanton Pacific Railroad
Scott Creek
Winter Creek
Archibald Creek
Scott Creek Beach County Park
Cal Poly Farm
Coast Dairies
Molino Creek
Scott Creek Beach
LEGEND
Multi-Use Rail Trail Facilities
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Proposed Paved (Coastal Side of Tracks)
Proposed Paved (Inland Side of Tracks)
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Proposed Un-Paved Trail
Existing Shoreline Beach Route (Low Tide Access)
Other Existing Class II Facilities
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Modified Trail At-Grade RR Crossing
Existing RR Bridge Crossing
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Assessor Parcels
Parcels With Recorded Access
Protected Public Areas in Fee
Streams
School Location
Transportation Features
Public Parking
Bus Stop
Hwy 1 Bridge Crossing
Santa Cruz Branch Rail Line Mile Posts
Existing Corridor Amenities
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Public Restroom
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Overlook/Interpretive Sign
Coastal Access
Connection to Inland Trail Systems
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0 0.125 0.25 0.5 Miles
0 500 1,000 2,000 3,000 4,000 Feet
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Figure 4-5

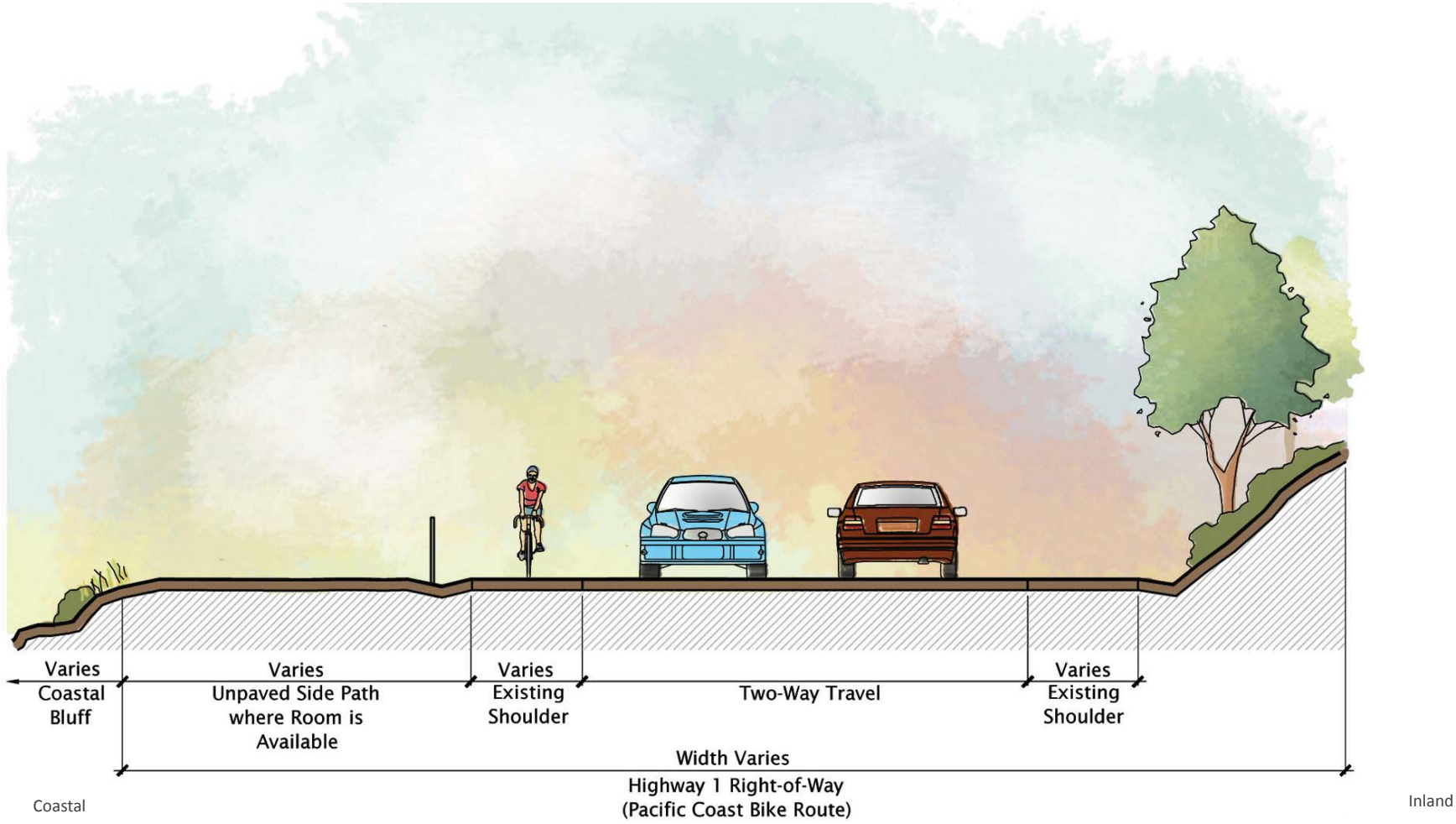


Figure 4-6 Segment 2 Section

Public restrooms and beach access at Davenport Landing Road

Public parking at Davenport Landing Road

Trail access to Davenport Landing Beach

4.3 SEGMENT 3 - UPPER COAST DAIRIES AT SCOTT CREEK

Length: 1.11 Miles (5,870 LF) -Scott Creek Beach Park to Davenport Landing Beach

4.3.1 SEGMENT 3 BOUNDARY DETERMINATION

The boundary for Segment 3 is determined by the small northern stretch of Coast Dairies property from Scott Creek Beach boundary to Davenport Landing Road. This segment is the first stretch where the publicly held coastal land is wider and offers more room for trail alignment options. The down coast boundary terminates at the southern intersection of Davenport Landing Road and Highway 1. This intersection is the beginning point for connection to the railroad corridor alignment down coast of the Davenport Landing Road intersection.

4.3.2 SEGMENT 3 DESCRIPTION

The Highway 1 corridor travels inland away from the coastal bluffs as it continues down coast from Scott Creek Beach to the upper Coast Dairies property. The existing Highway 1 bridge over Scott Creek is narrow, lacking any safe shoulder or sidewalk for non-motorized access across Scott Creek. It is recommended that plans for new highway bridge replacement should include bridge designs which include road shoulders and sidewalks for safe bicycle and pedestrian access across Scott Creek. Down coast from Scott Creek Beach parking area, the corridor provides room for future off-street, multi-use facilities on the coastal side of Highway 1 down coast to the intersection of Davenport Landing Road and Highway 1. This proposed multi-use facility follows an old rail bed. The abandoned rail bed falls away to the beach in one location where a new pre-engineered bridge would need to be installed to continue the path down coast to Davenport Landing Road. Davenport Landing Road is narrow with steep slopes on the coastal side of the road and private homes on the inland side of the road as it curves downhill to the coastal access at Davenport Landing Beach. Davenport Landing Beach currently provides restrooms, coastal access, and public parking. This segment is in proximity of two (2) activity centers, as identified on Table 3.1

Segment 3 Proposed Improvements:

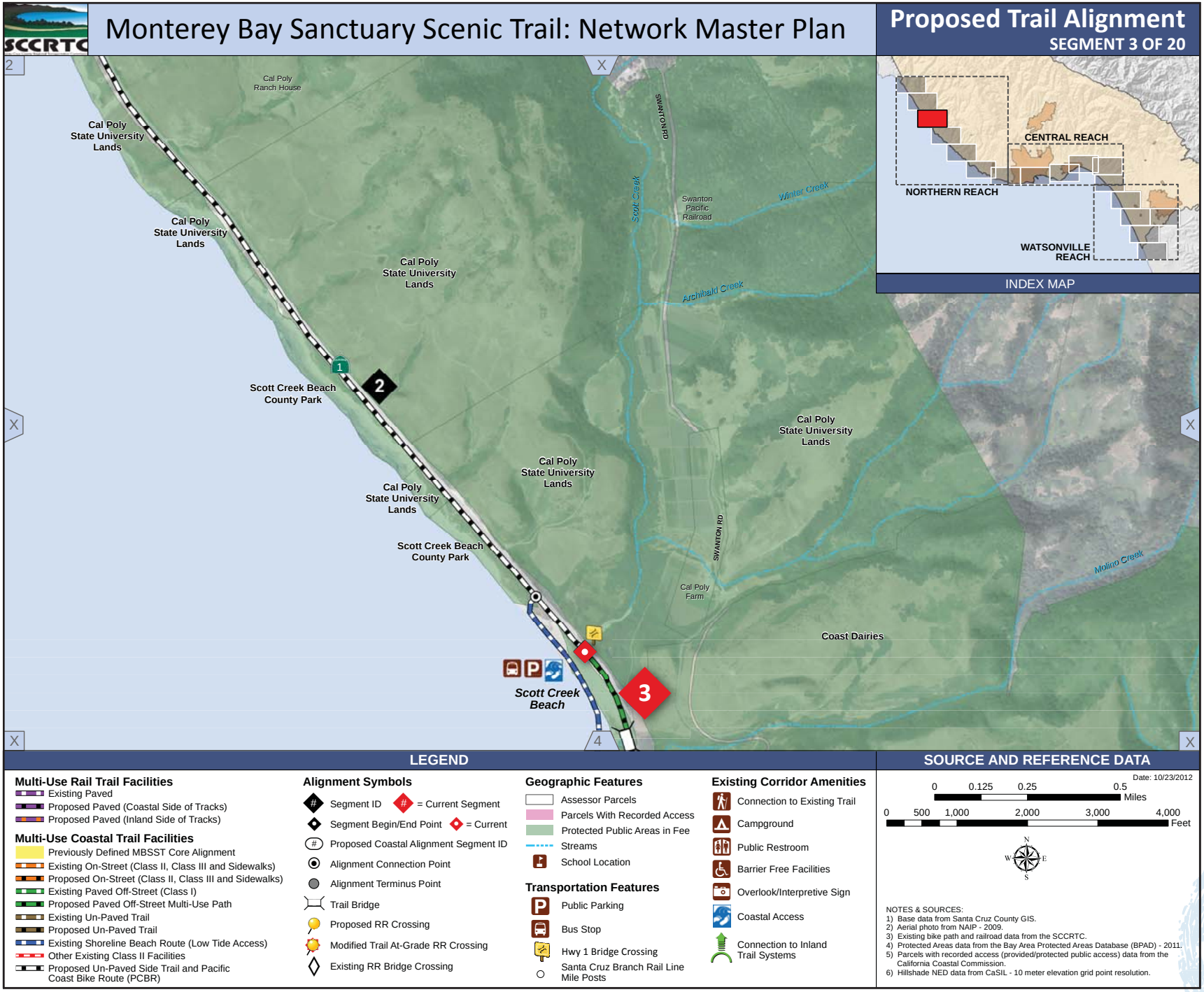
- 1.11 miles (5,870 LF) multi-use paved path
- One (1) Highway 1 at-grade crossing at Davenport Landing Road
- 1.43 miles (7,600 LF) of proposed coastal bluff trails
- One (1) pre-engineered bike/pedestrian bridge, 50-ft span

TABLE 4.3 Segment 3 - Upper Coast Dairies at Scott Creek				
Segment Length	**1.11 miles (5,870 LF) - Upper Coast Dairies at Scott Creek**			
Rail Trail Portion	1.11 miles (5,870 LF)			
Coastal Trail Portion	0.0 miles (0 LF)			
Segment Phase	**III**			
Segment Cost	**$2,169,084**			
Rail Trail Components	**Quantitiy**	**Unit**	**Unit Price**	**Cost**
Paved Multi-Use Path	5,870	Linear Feet	Varies	$1,056,600
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$239,320
Bridge Structures	0	Each	Varies	$200,000
At-Grade Crossings (Rail Tracks or Streets)	0	Each	Varies	$0
			Rail Trail Construction Cost Subtotal	**$1,495,920**
Coastal Trail Components	**Quantitiy**	**Unit**	**Unit Price**	**Cost**
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Unpaved Trail	0	Linear Feet	Varies	$0
On Street Facilites (Class II, III and Sidewalks)	0	Linear Feet	Varies	$0
			Coastal Trail Construction Cost Subtotal	**$0**
Cost Summary				
Construction Cost Total				$1,495,920
Design and Engineering (15%)				$224,388
Design Contingency (20%)				$299,184
Environmental Permitting (10%)				$149,592
			SEGMENT TOTAL COST	**$2,169,084**
Segment Features	**Description**			**Quantity**
Segment Jurisdictional Area	Caltrans/State Parks			2
Existing Staging Areas/Rest Stops	Scott Creek Beach/Davenport Landing Beach			2
Connection To Other Trails	Bluff-top trails			2
Connection to Public Beaches	Scott Creek Beach/Davenport Landing Beach			2

Coast Dairies trail access

Davenport Roadhouse Restaurant and Inn

Davenport Beach


Monterey Bay Sanctuary Scenic Trail: Network Master Plan
SCCRTC
Proposed Trail Alignment
SEGMENT 3 OF 20
CENTRAL REACH
NORTHERN REACH
WATSONVILLE REACH
INDEX MAP
Cal Poly Ranch House
Cal Poly State University Lands
Swanton Pacific Railroad
Scott Creek
Winter Creek
Archibald Creek
Scott Creek Beach County Park
SWANTON RD
Cal Poly Farm
Coast Dairies
Molino Creek
Scott Creek Beach
LEGEND
Multi-Use Rail Trail Facilities
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Protected Public Areas in Fee
Streams
School Location
Transportation Features
Public Parking
Bus Stop
Hwy 1 Bridge Crossing
Santa Cruz Branch Rail Line Mile Posts
Existing Corridor Amenities
Connection to Existing Trail
Campground
Public Restroom
Barrier Free Facilities
Overlook/Interpretive Sign
Coastal Access
Connection to Inland Trail Systems
SOURCE AND REFERENCE DATA
Date: 10/23/2012
0 0.125 0.25 0.5 Miles
0 500 1,000 2,000 3,000 4,000 Feet
N W E S
NOTES & SOURCES:
1) Base data from Santa Cruz County GIS.
2) Aerial photo from NAIP - 2009.
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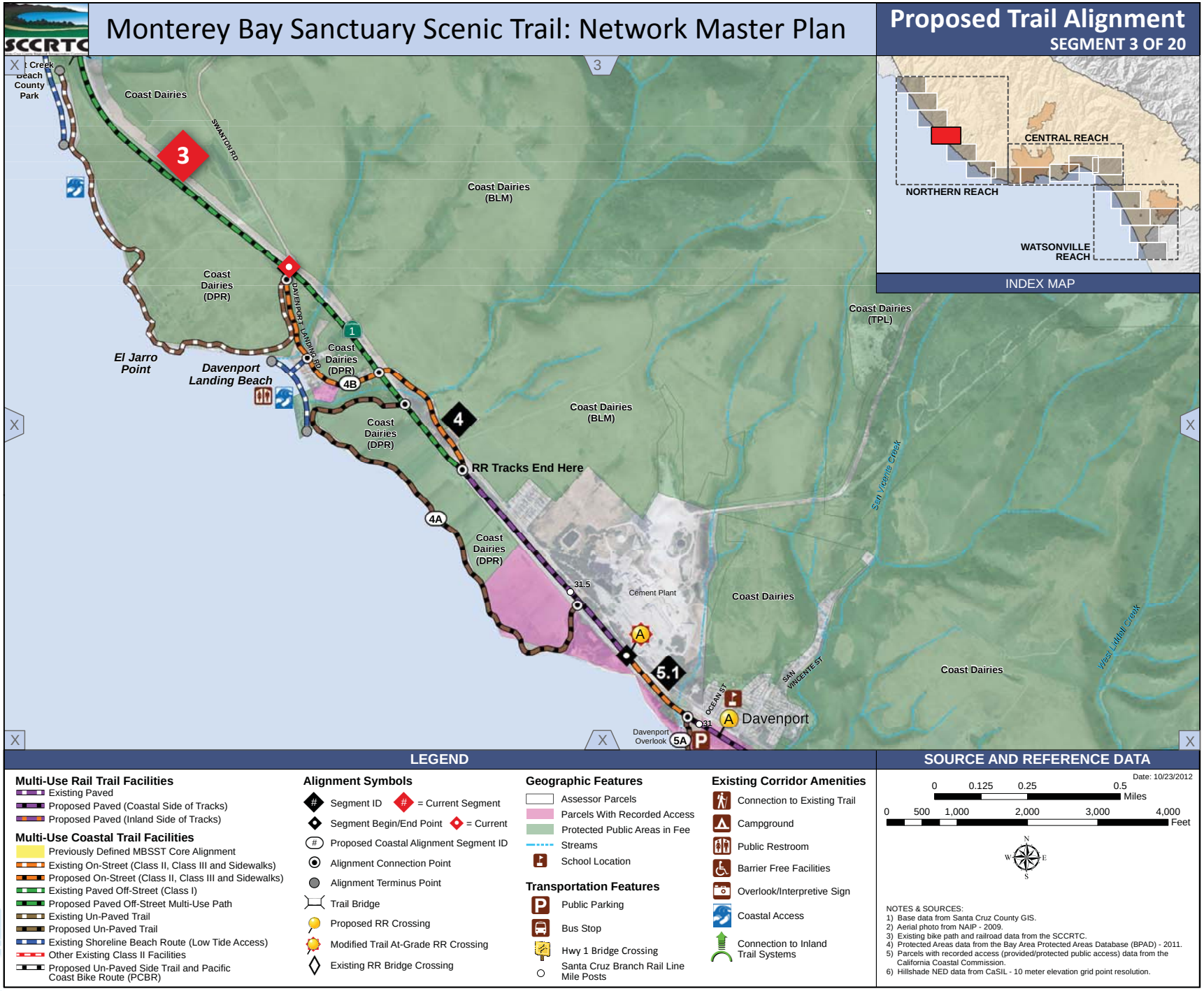
6) Hillshade NED data from CaSIL - 10 meter elevation grid point resolution.

Figure 4-7


Monterey Bay Sanctuary Scenic Trail: Network Master Plan
Proposed Trail Alignment
SEGMENT 3 OF 20
INDEX MAP
NORTHERN REACH
CENTRAL REACH
WATSONVILLE REACH
Coast Dairies
Coast Dairies (BLM)
Coast Dairies (DPR)
Coast Dairies (TPL)
El Jarro Point
Davenport Landing Beach
RR Tracks End Here
Cement Plant
Davenport
Davenport Overlook
SWANTON RD
DAVENPORT LANDING RD
OCEAN ST
SAN VINCENTE ST
San Vicente Creek
West Liddell Creek
LEGEND
Multi-Use Rail Trail Facilities
Existing Paved
Proposed Paved (Coastal Side of Tracks)
Proposed Paved (Inland Side of Tracks)
Multi-Use Coastal Trail Facilities
Previously Defined MBSST Core Alignment
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Other Existing Class II Facilities
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Existing RR Bridge Crossing
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Parcels With Recorded Access
Protected Public Areas in Fee
Streams
School Location
Transportation Features
Public Parking
Bus Stop
Hwy 1 Bridge Crossing
Santa Cruz Branch Rail Line Mile Posts
Existing Corridor Amenities
Connection to Existing Trail
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Public Restroom
Barrier Free Facilities
Overlook/Interpretive Sign
Coastal Access
Connection to Inland Trail Systems
SOURCE AND REFERENCE DATA
Date: 10/23/2012
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Figure 4-8

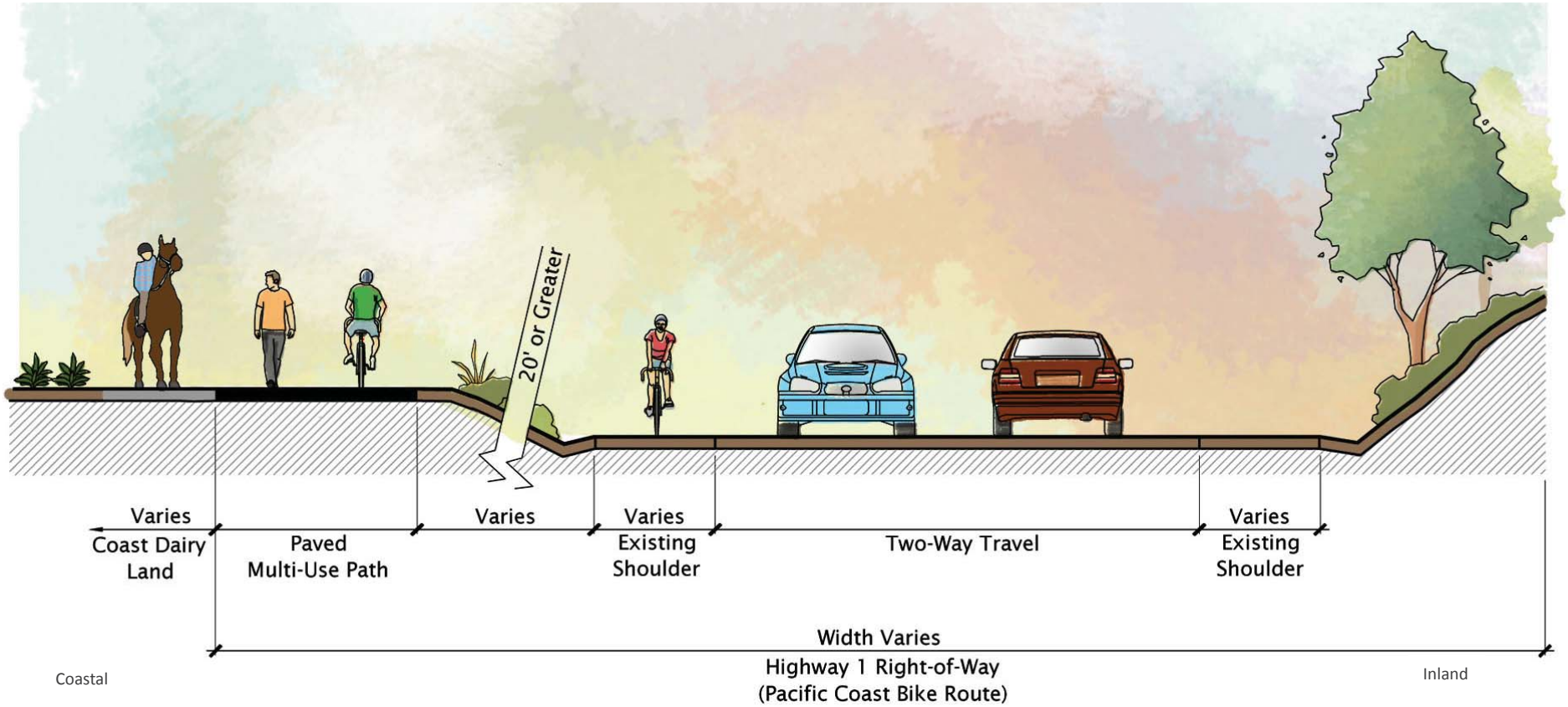


Figure 4-9 Segment 3 Section

The community of Davenport with rail corridor and coastal trail

Rail maintenance road looking north

4.4 SEGMENT 4 - DAVENPORT LANDING/END OF RAILROAD TRACKS

Length: 3.64 Miles (19,280 LF) - Coast Dairies south to end of railroad tracks

4.4.1 SEGMENT 4 BOUNDARY DETERMINATION

The up and down coast boundaries for Segment 4 are determined by logical transition points from the Davenport Landing Road intersections with Highway 1 and Swanton Road. This offers a possible Highway 1 crossing point for the trail alignment and eventual connection to the railroad right-of-way on the inland side of Highway 1, just down coast of Davenport Landing Road, Highway 1, and the Cement Plant Road intersections. The trail becomes a rail trail at this location and would follow the rail corridor down the coast to the Segment 4 terminus at the Highway 1 crossing of the railroad tracks.

4.4.2 SEGMENT 4 DESCRIPTION

Rail maintenance road looking south

The Coast Dairies land from Davenport Landing Road down coast to the cement plant provides an opportunity for coastal bluff trails and a possible off-street, multi-use facility on the coastal side of the Highway 1 right-of-way. This area of Coast Dairies has existing agricultural operations with intermittent agricultural vehicle access roads and fences throughout. The Highway 1 rail crossing up coast of Davenport is at an acute angle as it crosses the highway. The intersection has train warning signal lights and crossing arms for both northbound and southbound vehicles. The coastal edge in this location primarily consists of steep cliffs with difficult and limited access to small coves and beaches down coast of the town of Davenport. Coastal access is available through two (2) existing spur trail connections on Davenport Landing Road and along a proposed bluff trail, within the Coast Dairies property, down coast of Davenport Landing Beach. This segment has proximity to five (5) activity centers as identified in Table 3.1.

Segment 4 Proposed Improvements:

- 3.64 miles 19,280 (LF) multi-use paved path
- 7,450 (LF) bluff trail
- Four (4) road crossings

Trail access to Davenport Landing Beach

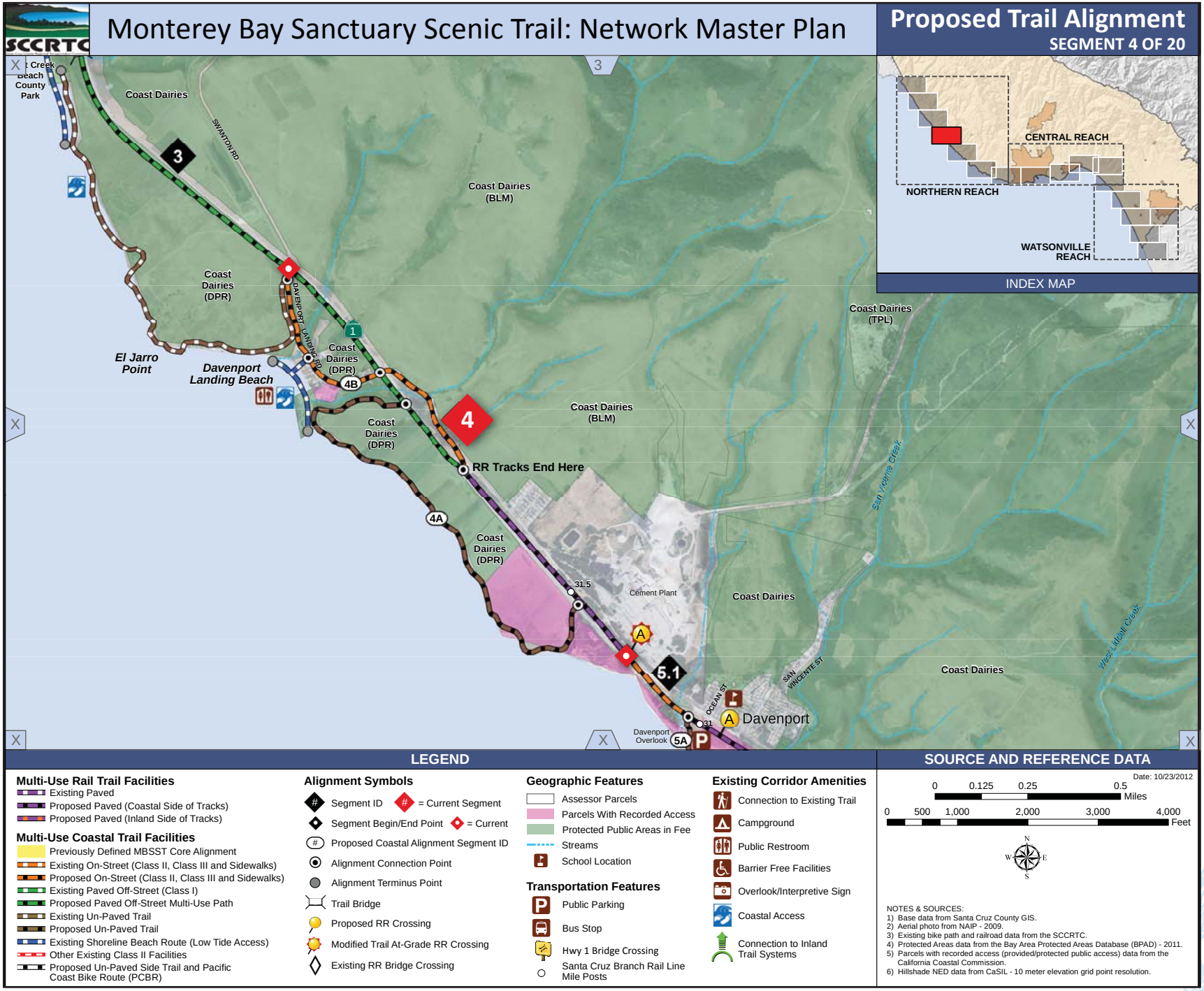
TABLE 4.4 Segment 4 - Davenport Landing/End of Railroad Tracks				
Segment Length	**3.64 miles (19,280 LF) - Davenport Landing/End of Railroad Tracks**			
Rail Trail Portion	1.38 miles (7,300 LF)			
Coastal Trail Portion	2.26 miles (11,980 LF)			
Segment Phase	**III**			
Segment Cost	**$2,690,751**			
Rail Trail Components	**Quantitiy**	**Unit**	**Unit Price**	**Cost**
Paved Multi-Use Path	7,300	Linear Feet	Varies	$1,182,600
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$110,600
Bridge Structures	0	Each	Varies	$0
At-Grade Crossings (Rail Tracks or Streets)	4	Each	Varies	$420,000
			Rail Trail Construction Cost Subtotal	**$1,713,200**
Coastal Trail Components	**Quantitiy**	**Unit**	**Unit Price**	**Cost**
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Unpaved Trail	7,470	Linear Feet	$7	$52,290
On Street Facilites (Class II, III and Sidewalks)	4,510	Linear Feet	$20	$90,200
			Coastal Trail Construction Cost Subtotal	**$142,490**
Cost Summary				
Construction Cost Total				$1,855,690
Design and Engineering (15%)				$278,354
Design Contingency (20%)				$371,138
Environmental Permitting (10%)				$185,569
			SEGMENT TOTAL COST	**$2,690,751**

Segment Features	Description	Quantity
Segment Jurisdictional Area	Caltrans ROW, State Park Lands	-
State Highway Crossings	Davenport Landing Road and Cement Plant Road	2
Minor Roadway Crossings	Cement Plant Road Crossing	1
Trail At-Grade Railroad Crossings	Davenport	1
Existing Staging Areas/Rest Stops	Davenport Landing Beach	1
Connection To Other Trails	Bluff-top Trails at Coast Dairies	2
Connection to Public Beach	Davenport Landing Beach	1
Connection to Residential Area	Davenport Landing Community	1
Connection to Passive Park	Coast Dairies	1

Bluff trail to scenic overlook

Coastal views from bluff trail

Davenport Landing Beach


Monterey Bay Sanctuary Scenic Trail: Network Master Plan
SCCRTC
Proposed Trail Alignment
SEGMENT 4 OF 20
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Cement Plant
Davenport
Davenport Overlook
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Campground
Public Restroom
Barrier Free Facilities
Overlook/Interpretive Sign
Coastal Access
Connection to Inland Trail Systems
SOURCE AND REFERENCE DATA
Date: 10/23/2012
0 0.125 0.25 0.5 Miles
0 500 1,000 2,000 3,000 4,000 Feet
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6) Hillshade NED data from CaSIL - 10 meter elevation grid point resolution.

Figure 4-10

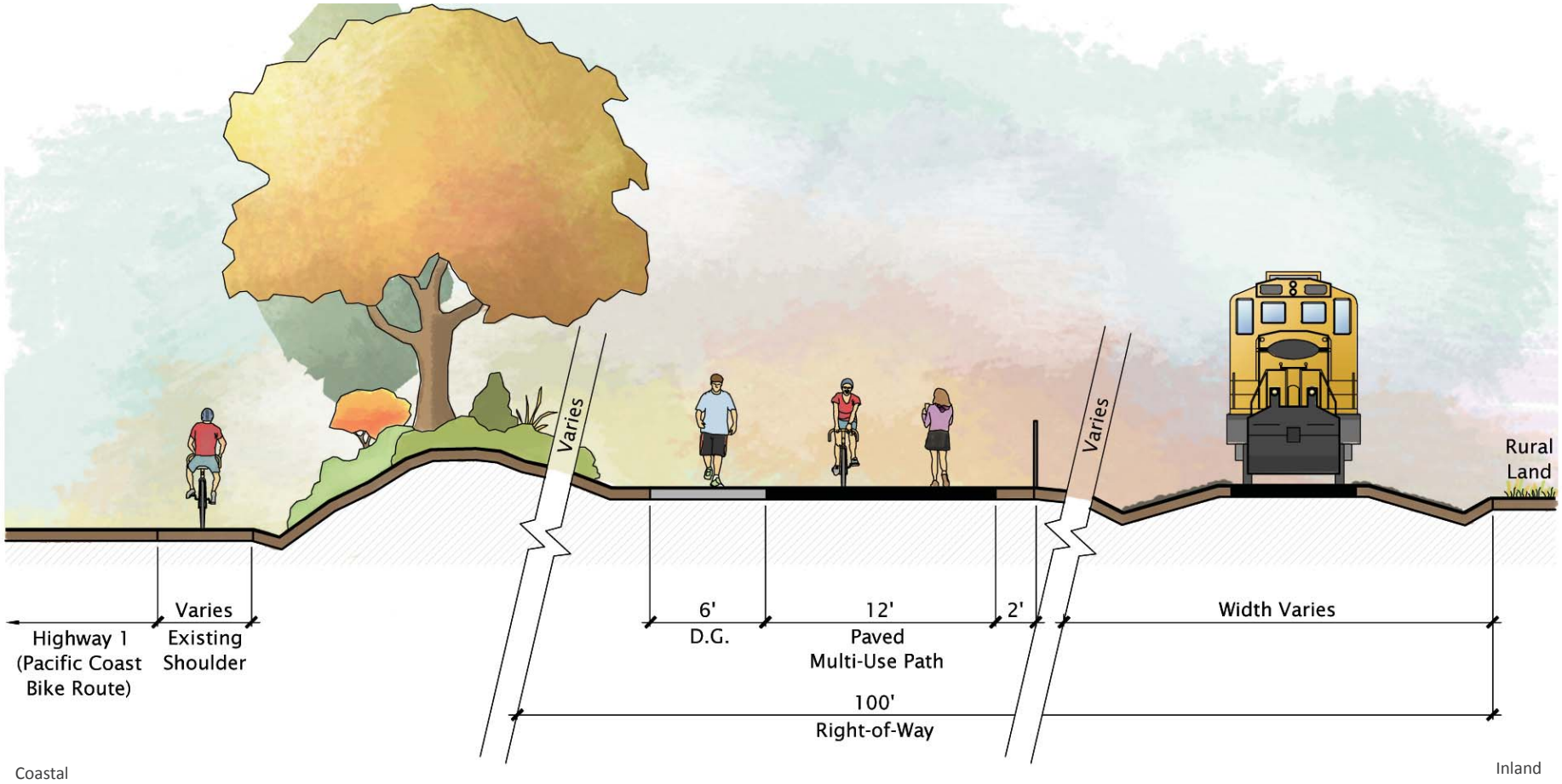


Figure 4-11 Segment 4 Section

Coast Dairies trail access

4.5 SEGMENT 5 - DAVENPORT AND WILDER RANCH

Total Length: 10.65 Miles (56,260 LF)

4.5.1 SEGMENT 5 BOUNDARY DETERMINATION

The boundary for Segment 5 stretches for 7.5 miles from Davenport to the existing Wilder Ranch staging area and trailhead parking lot. This segment is broken up into three sub-segments; Segments 5.1, 5.2 and 5.3, due to both the overall distance of the segment and the similar site characteristics throughout the total segment length. Since the length of this segment spans a great distance, it may be financially more feasible to break it down to the following three sub-segments in the planning efforts to manage the near, mid, and long term implementation efforts. The entire length of trail Segment 5, which includes all three sub-segments, would essentially connect Davenport to the existing trail facilities in the City of Santa Cruz with a 10.5-mile trail.

4.5.2 SEGMENT 5 DESCRIPTIONS (SUB-SEGMENT 5.1,5.2, 5.3)

Wilder Ranch multi-use path

SUB-SEGMENT 5.1 (1.49 MILES)

This sub-segment starts at the Highway 1 rail crossing just up coast of downtown Davenport and ends at the existing Highway 1 informal pull-off parking area at Bonny Doon Beach.

The entire town of Davenport is located on the inland side of Highway 1. On the coastal side of Highway 1, directly across the street from the downtown area, are two large empty dirt lots used as visitor parking. These pull-off areas are also used as parking to access the coastal cliffs and Davenport Overlook on the coastal side of the railroad tracks. There are no formal pathways or legal rail crossings to the coastal cliffs at this location. Beach users and tourists also use these informal access points to get down to Davenport Beach. Pedestrian access across Highway 1 to downtown Davenport from the dirt parking lot lacks any signal-controlled pedestrian crossings or striped crosswalks. The northbound Highway 1 approach to Davenport is on an incline with some site-view constraints for people crossing to and from the dirt parking lots on the coastal side of Highway 1 to downtown Davenport on the inland side of Highway 1. The rail tracks are on the coastal side of State Highway 1 and the proposed trail alignment would occur on the coastal side of the rail tracks. The rail tracks cross Highway 1 up-coast of Davenport near the cement plant entrance. The existing rail crossing is currently equipped with signal warning lights and stop arms for the north and south bound traffic. The railroad bed runs parallel about 100 feet from the coastal side of Highway 1 fairly consistently as it heads down coast along Coast Dairies property. This segment continues one mile south of Davenport to Bonny Doon Beach with an informal paved public parking area including bike racks, and coastal access to Bonny Doon Beach. Bonny Doon Beach is a small sandy cove closed-in by steep sea cliffs along the beach. The coastal side of the railroad bed has a fairly steep slope along this stretch with open views to the beach below. There are proposed unpaved coastal bluff trail options (sub-segments 5.A and 5.B on Figure 4.13) which provide additional access, overlooks, and pathway connections along the coastal edge.

Wilder Ranch State Park signage

SUB-SEGMENT 5.1 PROPOSED FACILITIES INCLUDE:

- 0.49 miles (6,660 LF) multi-use paved path along the coastal-side rail right-of-way
- 1.26 miles (6,680 LF) native soil coastal bluff trails and coastal access between Davenport Beach and Yellow Bank Beach
- Parking lot improvements to existing dirt lot, coastal side of Highway 1 in Davenport near the Davenport Overlook
- One (1) new signalized at-grade road crossing of Highway 1 in Davenport

Trail maintenance may include removing sand from trail and rail right-of-way

SUB-SEGMENT 5.2 (2.58 MILES)

This sub-segment starts at Bonny Doon Beach parking lot and continues down coast to Scaroni Road. The rail line parallels Highway 1, past Yellow Bank Beach. The proposed alignment would follow the coastal side of the rail corridor heading down coast. Yellow Bank Beach is another small sandy beach cove with informal parking off Highway 1 and non-formalized access across the rail tracks to the beach and coastal bluffs. As Highway 1 and the rail line continue down coast, the two corridors start to pull away from the coastal bluffs through Coast Dairies. The proposed Coastal Rail Trail would continue along the coastal side of the tracks. As the rail and Highway 1 corridor pulls further from the coastal edge, it offers more opportunities for secondary coastal bluff trails along the Coast Dairies property. These proposed unpaved native soil trails (sub-segments 5.D and 5.E on Figure 4-13) offer alternate coastal access, scenic views, and other recreational opportunities linked by the proposed main rail trail spine. As the Coastal Rail Trail heads down coast out of Coast Dairies property, it diverts away from its parallel track of Highway 1 as it crosses Scaroni Road and Majors Creek; this begins sub-segment 5.3 where the proposed trail approaches the larger coastal mesas and agricultural land within Wilder Ranch State Park.

Agricultural roads sometimes encroach into the rail right-of-way

SUB-SEGMENT 5.2 PROPOSED FACILITIES INCLUDE:

- 2.48 miles (13,630 LF) multi-use paved path along the coastal-side rail right-of-way
- 6,685 (LF) native soil coastal bluff trails

The Coastal Rail Trail should connect to existing trails whenever possible

Coast Dairies coastal trail

SUB-SEGMENT 5.3 –(3.51 MILES)

This sub-segment begins at upper Scaroni Road and ends at the existing Wilder Ranch staging area. There are up to 15 at-grade vehicle crossings along the rail tracks from Scaroni Road to the Wilder Ranch State Park trailhead. The proposed trail alignment would continue down coast along the coastal side rail right-of-way. From the beginning point of Segment 5.3 at upper Scaroni Road there's a section of the rail right-of-way that is only 20 ft wide. The 20 ft rail right-of-way continues for a short stretch from upper Scaroni Road down coast to mile marker 27 near lower Scaroni Road where it widens back to 120 ft. A more accurate and detailed survey of this narrow segment may help determine if the adjacent land is privately owned or part of the Wilder Ranch land holdings. If the adjacent land is privately owned, one option to address this narrow right-of-way section would be to have the trail cross over to the inland side of the rail tracks at lower Scaroni Road and coordinate with Caltrans to share some of Highway 1 right-of-way to accommodate the trail. Once past the narrow section, cross back to the coastal side of the rail tracks at upper Scaroni Road and continue along the wider rail right-of-way. Further down coast from Scaroni Road, existing rail crossings from Wilder Ranch would function as they have historically with improvements consisting of warning signs along the proposed trail alignment at key trail access points and agricultural crossings. Fencing along the trail would be negotiated and coordinated with State Parks, agricultural operators and the RTC. Trail sub-segment 5.3 connects to multiple existing unpaved bluff top trails along the edge of the agricultural fields and the coastal edge. There are several optional unpaved sub-segment connector trails (sub-segment 5.F on Figure 4-14) that would join existing gaps in the bluff trail network. Equestrian use is already occurring in Wilder Ranch and the new rail trail would need to accommodate equestrian use as it connects through Wilder Ranch. The equestrian facilities may include soft-surface trail connectors adjacent to the paved path and signs addressing multi-use path etiquette and wayfinding. Current rules and regulations for equestrian use in Wilder Ranch would be applicable with the new multi-use paved path.

SUB-SEGMENT 5.3 PROPOSED FACILITIES INCLUDE:

- 3.5 miles (18,520 LF) Multi-use path along the coastal-side rail right-of-way

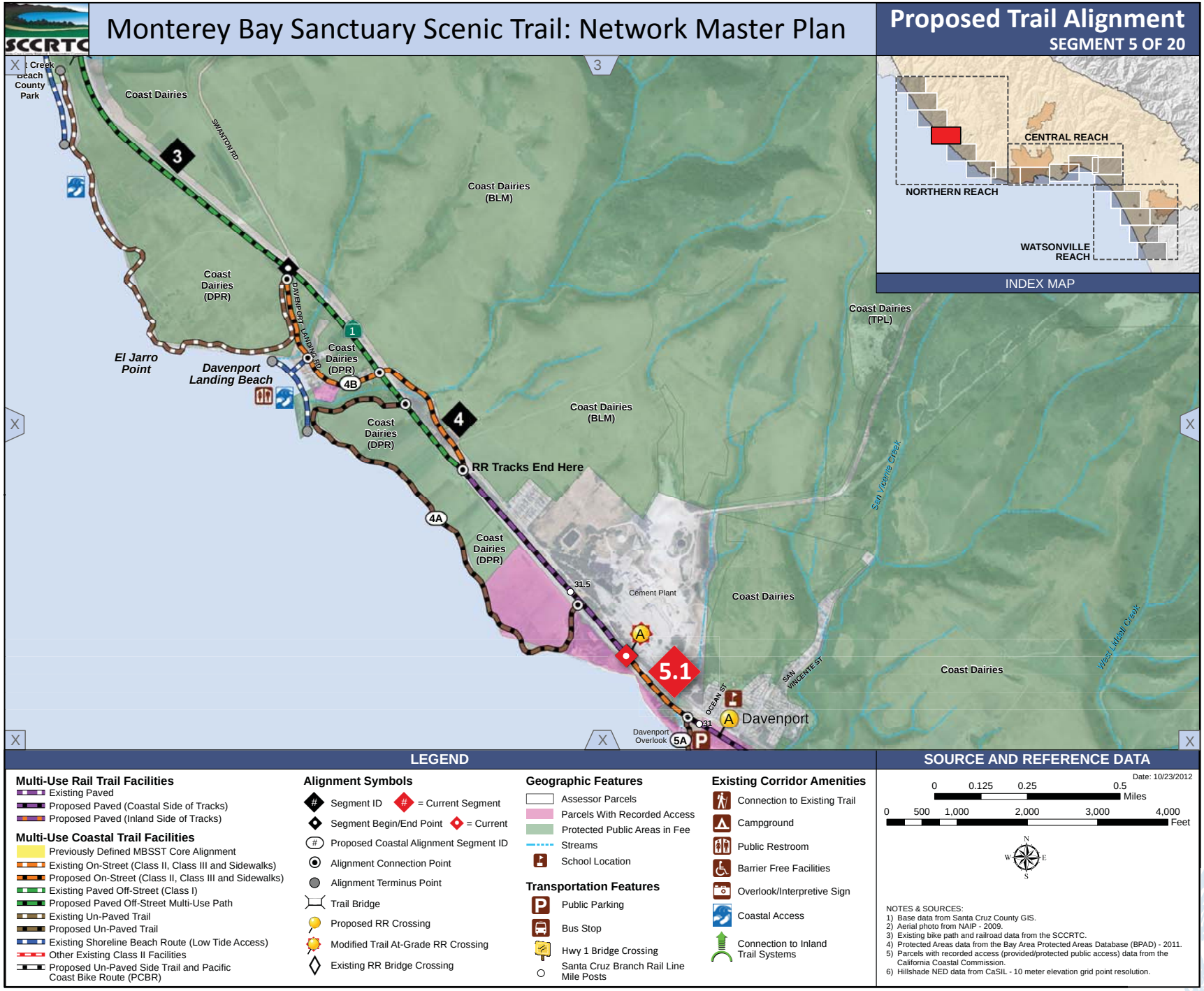
TABLE 4.5 Segment 5 - Davenport and Wilder Ranch				
Segment Length	**10.65 miles (56,260 LF) - Davenport and Wilder Ranch**			
Rail Trail Portion	7.58 miles (40,040 LF)			
Coastal Trail Portion	3.07 miles (16,220)			
Segment Phase	**I**			
Segment Cost	**$12,147,288**			
Rail Trail Components	**Quantitiy**	**Unit**	**Unit Price**	**Cost**
Paved Multi-Use Path	40,040	Linear Feet	$162	$6,486,480
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$1,367,420
Bridge Structures	0	Each	Varies	$0
At-Grade Crossings (Rail Tracks or Streets)	17	Each	Varies	$410,000
			Rail Trail Construction Cost Subtotal	**$8,263,900**
Coastal Trail Components	**Quantitiy**	**Unit**	**Unit Price**	**Cost**
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Unpaved Trail	16,220	Linear Feet	$7	$113,540
On Street Facilites (Class II, III and Sidewalks)	0	Linear Feet	Varies	$0
			Coastal Trail Construction Cost Subtotal	**$113,540**
Cost Summary				
Construction Cost Total				$8,377,440
Design and Engineering (15%)				$1,256,616
Design Contingency (20%)				$1,675,488
Environmental Permitting (10%)				$837,744
			SEGMENT TOTAL COST	**$12,147,288**

Segment Features	Description	Quantity
Segment Jurisdictional Area	State Parks, Railroad Right-of-Way	2
Minor Roadway Crossings	Scaroni Road, North and South	2
Private Road Crossings	Various non-paved Agricultural Roads	20
Trail At-Grade Railroad Crossings	Davenport, two (2) between mile markers 29.4 and 30.4	3
Rail Bridge Crossing (Wood Trestle)	Old Dairy Gulch	2
Minor Drainage	Multiple	14
Existing Staging Areas/Rest Stops	Bonny Doon Beach, Yellowbank Beach, Wilder Ranch	5
Connection To Other Trails	Wilder Ranch Trail System, Inland and Coastal Bluffs	2
Connection to Public Beaches	Davenport, Bonny Doon, Yellowbank, Laguna Creek Beach, Red-White-and-Blue, 4-Mile, 3-Mile, Sand Plant and Wilder Beaches	9
Connection to Passive Park		1

Potential trail alignment adjacent to railroad tracks

Wilder Ranch trailhead with restrooms, drinking water, vehicle parking, and bike racks

Scenic overlook from coastal bluff trail


Monterey Bay Sanctuary Scenic Trail: Network Master Plan
Proposed Trail Alignment
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INDEX MAP
CENTRAL REACH
NORTHERN REACH
WATSONVILLE REACH
Coast Dairies
Coast Dairies (BLM)
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Coast Dairies (TPL)
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Proposed Un-Paved Side Trail and Pacific Coast Bike Route (PCBR)
Alignment Symbols
Segment ID
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Segment Begin/End Point
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Alignment Connection Point
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Trail Bridge
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School Location
Transportation Features
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Public Restroom
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Overlook/Interpretive Sign
Coastal Access
Connection to Inland Trail Systems
SOURCE AND REFERENCE DATA
Date: 10/23/2012
0 0.125 0.25 0.5 Miles
0 500 1,000 2,000 3,000 4,000 Feet
NOTES & SOURCES:
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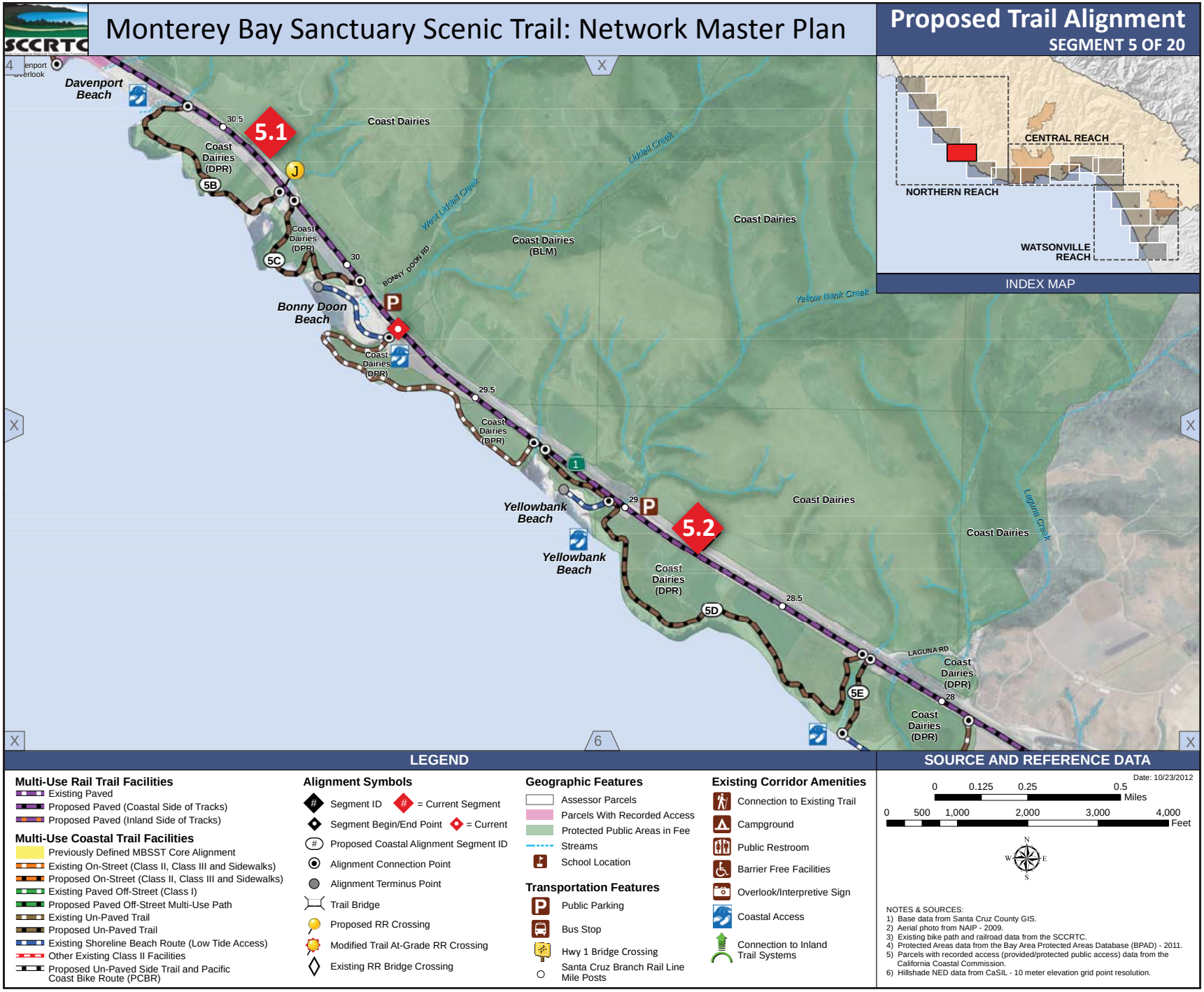
Figure 4-12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Coast Dairies
Coast Dairies (DPR)
Coast Dairies (BLM)
Bonny Doon Beach
Yellowbank Beach
Yellowbank Beach
5.1
5.2
5B
5C
5D
5E
J
P
1
30.5
30
29.5
29
28.5
28
BONNY DOON RD
LAGUNA RD
Liddell Creek
West Liddell Creek
Yellow Bank Creek
Laguna Creek
LEGEND
Multi-Use Rail Trail Facilities
Existing Paved
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Segment Begin/End Point
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Proposed RR Crossing
Modified Trail At-Grade RR Crossing
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Geographic Features
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Transportation Features
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Coastal Access
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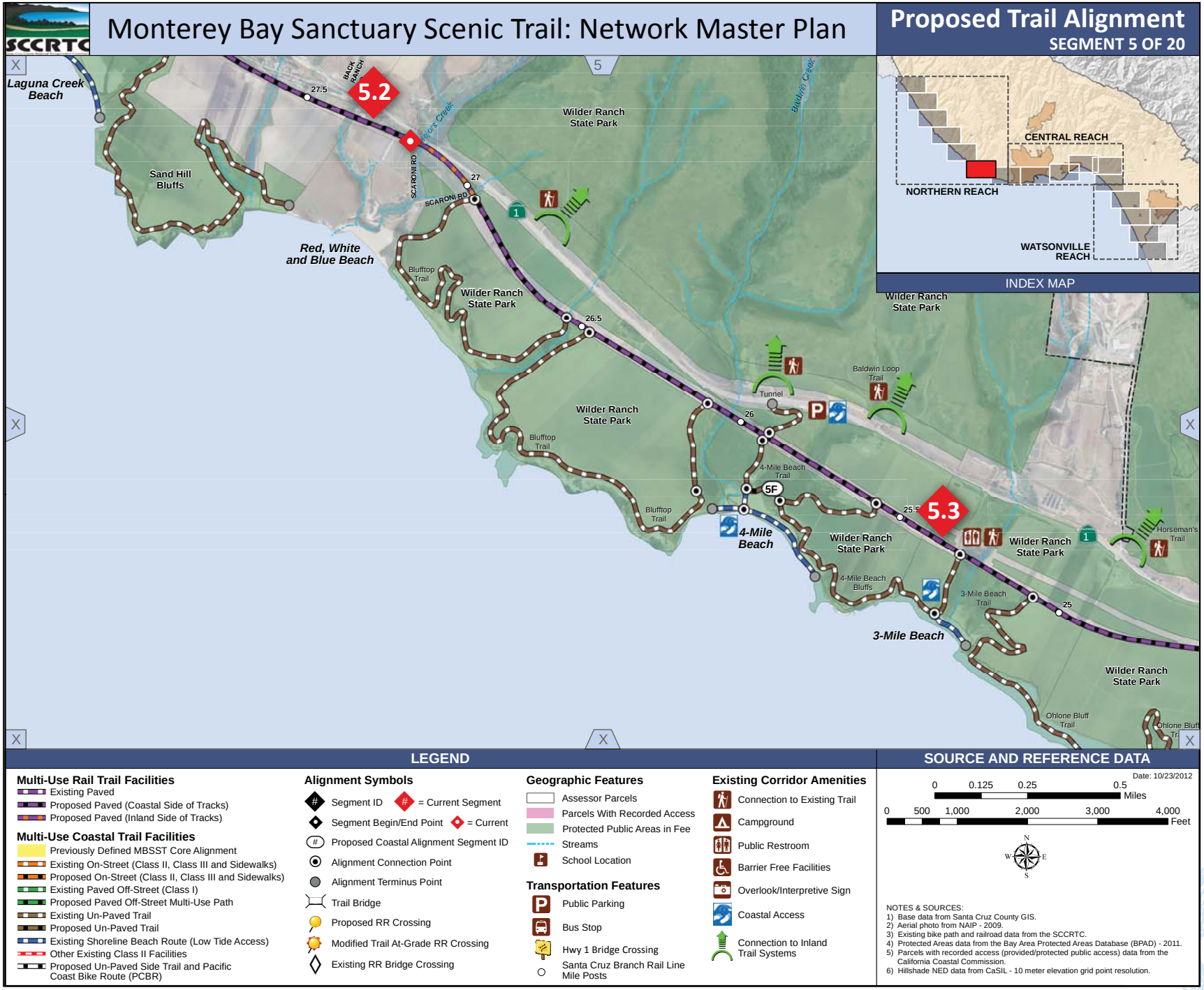
Figure 4-13


Monterey Bay Sanctuary Scenic Trail: Network Master Plan
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Proposed Trail Alignment
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5.2
5.3
Laguna Creek Beach
Sand Hill Bluffs
Red, White and Blue Beach
Wilder Ranch State Park
Blufftop Trail
Tunnel
Baldwin Loop Trail
4-Mile Beach
4-Mile Beach Bluffs
3-Mile Beach
3-Mile Beach Trail
Horseman's Trail
Ohlone Bluff Trail
SCARONI RD
BACK RANCH
Waddell Creek
Baldwin Creek
27.5
27
26.5
26
25.5
25
5F
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NORTHERN REACH
WATSONVILLE REACH
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Multi-Use Rail Trail Facilities
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Figure 4-14

Monterey Bay Sanctuary Scenic Trail: Network Master Plan

Proposed Trail Alignment
SEGMENT 5 OF 20

LEGEND

Multi-Use Rail Trail Facilities
- Existing Paved
- Proposed Paved (Coastal Side of Tracks)
- Proposed Paved (Inland Side of Tracks)

Multi-Use Coastal Trail Facilities
- Previously Defined MBSST Core Alignment
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- Streams
- School Location

Transportation Features
- Public Parking
- Bus Stop
- Hwy 1 Bridge Crossing
- Santa Cruz Branch Rail Line Mile Posts

Existing Corridor Amenities
- Connection to Existing Trail
- Campground
- Public Restroom
- Barrier Free Facilities
- Overlook/Interpretive Sign
- Coastal Access
- Connection to Inland Trail Systems

SOURCE AND REFERENCE DATA

Date: 10/23/2012

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Figure 4-15

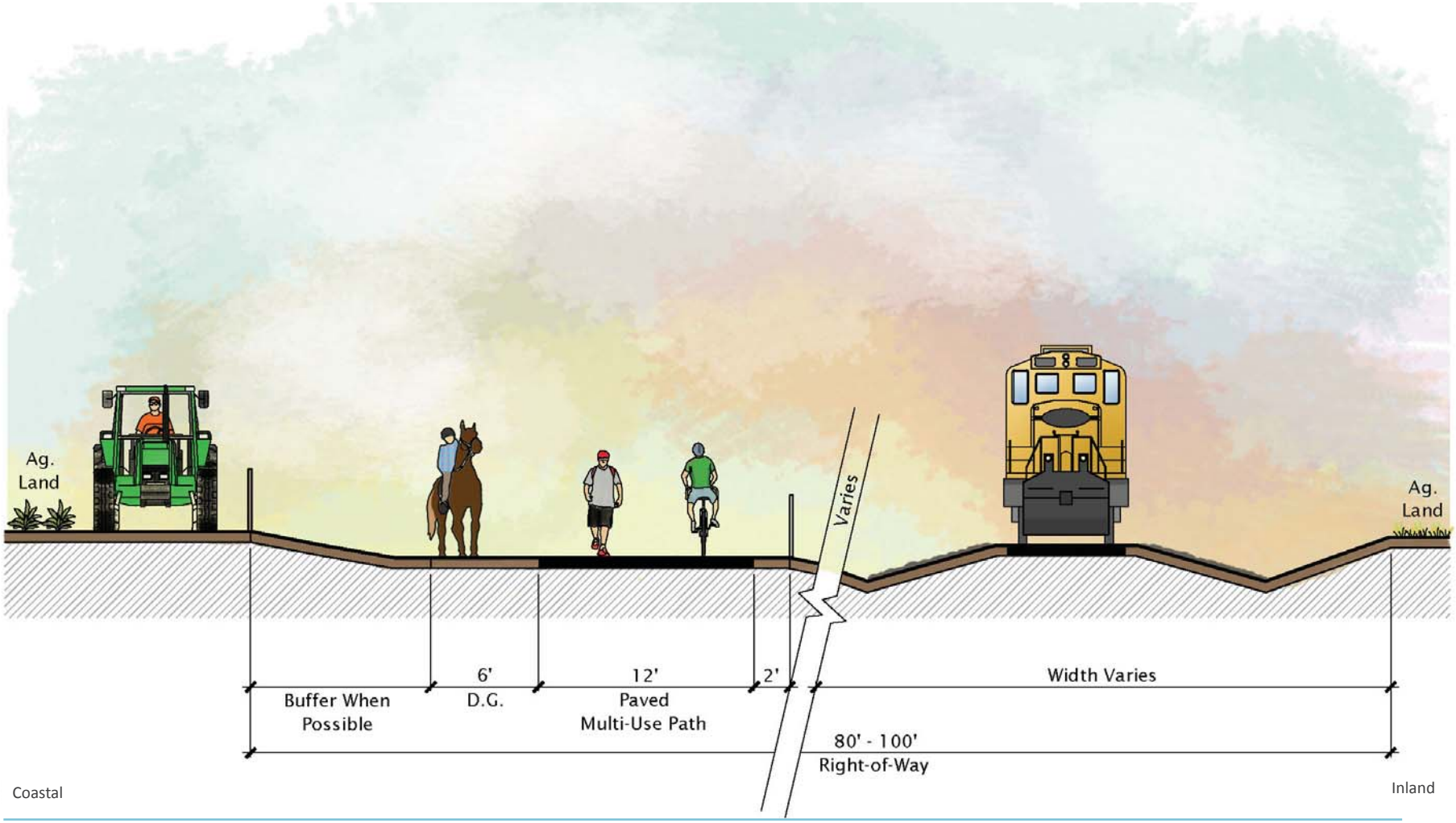


Figure 4-16 Segment 5 Section

Wilder Ranch trail head, coastal trail, and railroad tracks

Bridge crossing over Antonelli Pond - needs upgrading to accommodate bikes and pedestrians

Antonelli Pond from the Moore Creek rail trestle bridge

Highway 1 proximity to railroad tracks - looking south

4.6 SEGMENT 6 - WILDER RANCH TRAILHEAD/SHAFFER ROAD

Length: 1.49 miles (7,830 LF) - Wilder Ranch Trailhead to Antonelli Pond

4.6.1 SEGMENT 6 BOUNDARY DETERMINATION

The Segment 6 boundary is delineated by both the existing trailhead facilities at Wilder Ranch and the existing parallel multi-use trail system from Wilder Ranch trailhead down coast to Schaffer Road. This segment of the proposed Coastal Rail Trail has some level of duplication with the existing Wilder Ranch Class I facilities running along the coastal side of Highway 1. The northern connection point for Segment 6 occurs at the existing Old Cove Landing rail crossing from the Wilder Ranch trailhead. This is a good starting point for bikes and pedestrians to connect to the proposed Coastal Rail Trail. The Wilder Ranch trailhead also provides a regional rest stop with water, restrooms, and other trail support facilities. The terminus point for Segment 6 occurs down coast of the Shaffer Road/Moore Creek rail bridge trestle crossing near Antonelli Pond.

4.6.2 SEGMENT 6 DESCRIPTION

Wilder Ranch State Park offers multiple existing trail alignments from its regional trailhead out to the coastal bluff tops and beaches. The trails connect to beaches within Wilder Ranch State Park up and down the coastal edge. Panther Beach at the mouth of Majors Creek, 4-Mile Beach at the mouth of Baldwin Creek, 3-Mile Beach, Sand Plant Beach, Fern Grotto, and Wilder Beach at the south end of the State Park. A pre-engineered trail bridge will be needed where the train trestle crosses upper Antonelli Pond. An alternate trail bridge crossing option is proposed across Antonelli Pond closer to Delaware Avenue, providing a shorter bridge span. The proposed trail alignment continues down coast through the center of Wilder Ranch State Park as it crosses Shaffer Road to the trestle bridge crossing of Moore Creek. The Wilder Ranch State Park trailhead provides parking, restrooms, and serves both travelers arriving by car or along existing multi-use trail from the down coast. An existing below-grade tunnel crossing of Highway 1 provides connectivity to existing trails leading to inland portions of the Wilder Ranch State Park trail network and the UC Santa Cruz campus lands. This segment is in proximity to seventeen (17) activity centers, as identified in Table 3.1.

Segment 6 Proposed Facilities Include:

- 1.49 miles (7,830 LF) paved multi-use paved path along the coastal side of the rail right-of-way
- One (1) pre-engineered bike/pedestrian bridge, 200-ft span

TABLE 4.6 Segment 6 - Wilder Ranch Trailhead/Shaffer Road				
Segment Length	**1.49 miles (7,830 LF) - Wilder Ranch Trailhead/Shaffer Road**			
Rail Trail Portion	1.36 miles (7,160 LF)			
Coastal Trail Portion	0.13 miles (670 LF)			
Segment Phase	**II**			
Segment Cost	**$4,014,601**			
Rail Trail Components	**Quantitiy**	**Unit**	**Unit Price**	**Cost**
Paved Multi-Use Path	7,160	Linear Feet	$162	$1,159,920
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$291,400
Bridge Structures	1	Each	Varies	$1,000,000
At-Grade Crossings (Rail Tracks or Streets)	6	Each	Varies	$310,000
			Rail Trail Construction Cost Subtotal	**$2,761,320**
Coastal Trail Components	**Quantitiy**	**Unit**	**Unit Price**	**Cost**
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Unpaved Trail	670	Linear Feet	$11	$7,370
On Street Facilites (Class II, III and Sidewalks)	0	Linear Feet	Varies	$0
			Coastal Trail Construction Cost Subtotal	**$7,370**
Cost Summary				
Construction Cost Total				$2,768,690
Design and Engineering (15%)				$415,304
Design Contingency (20%)				$553,738
Environmental Permitting (10%)				$276,869
			SEGMENT TOTAL COST	**$4,014,601**

Segment Features	Description	Quantity
Segment Jurisdictional Area	State Parks, County	2
Private Road Crossings	Un-paved access roads	3
Rail Bridge Crossing (Wood Trestle)	Antonelli Pond/Creek	1
Major Drainage	Antonelli Pond/Creek	1
Minor Drainage	Various	3
Existing Staging Areas/Rest Stops	Wilder Ranch	1
Connection To Other Trails	Wilder Ranch Trail System	3
Connection to Public Beaches	Wilder Beach, Younger Lagoon	2
Connection to Passive Park	Wilder Ranch State Park/Antonelli Pond	2

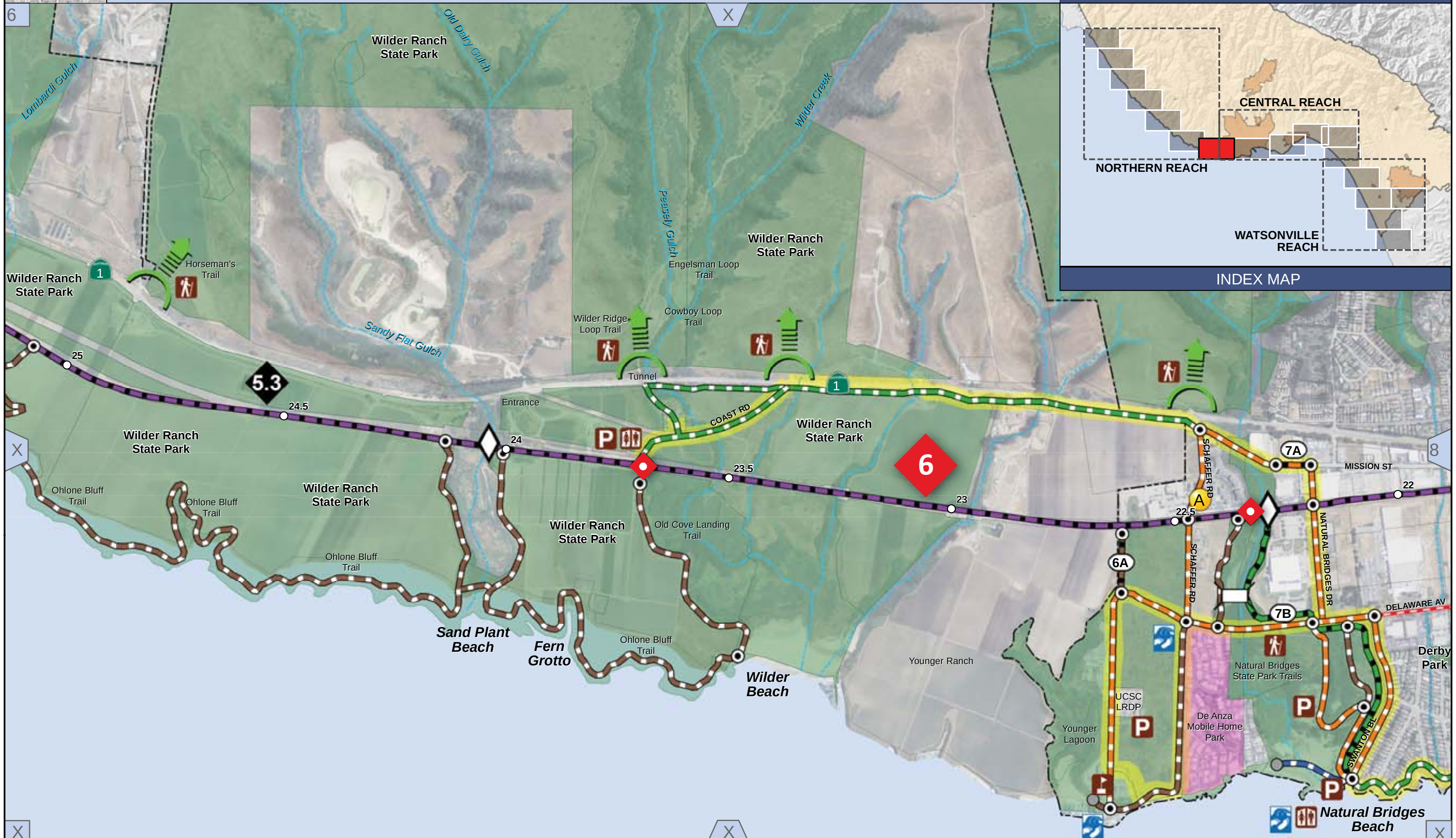
Depot at Depot Park in Santa Cruz - looking east

New Leaf Market adjacent to railroad tracks at Fair Avenue

Multi-use path near Depot Park

Monterey Bay Sanctuary Scenic Trail: Network Master Plan

Proposed Trail Alignment
SEGMENT 6 OF 20



INDEX MAP

LEGEND

Multi-Use Rail Trail Facilities
- Existing Paved
- Proposed Paved (Coastal Side of Tracks)
- Proposed Paved (Inland Side of Tracks)

Multi-Use Coastal Trail Facilities
- Previously Defined MBSST Core Alignment
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- Proposed On-Street (Class II, Class III and Sidewalks)
- Existing Paved Off-Street (Class I)
- Proposed Paved Off-Street Multi-Use Path
- Existing Un-Paved Trail
- Proposed Un-Paved Trail
- Existing Shoreline Beach Route (Low Tide Access)
- Other Existing Class II Facilities
- Proposed Un-Paved Side Trail and Pacific Coast Bike Route (PCBR)

Alignment Symbols
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- Segment Begin/End Point = Current
- Proposed Coastal Alignment Segment ID
- Alignment Connection Point
- Alignment Terminus Point
- Trail Bridge
- Proposed RR Crossing
- Modified Trail At-Grade RR Crossing
- Existing RR Bridge Crossing

Geographic Features
- Assessor Parcels
- Parcels With Recorded Access
- Protected Public Areas in Fee
- Streams
- School Location

Transportation Features
- Public Parking
- Bus Stop
- Hwy 1 Bridge Crossing
- Santa Cruz Branch Rail Line Mile Posts

Existing Corridor Amenities
- Connection to Existing Trail
- Campground
- Public Restroom
- Barrier Free Facilities
- Overlook/Interpretive Sign
- Coastal Access
- Connection to Inland Trail Systems

SOURCE AND REFERENCE DATA

Date: 10/23/2012

0 0.125 0.25 0.5 Miles

0 500 1,000 2,000 3,000 4,000 Feet

N E S W

NOTES & SOURCES:
1) Base data from Santa Cruz County GIS.
2) Aerial photo from NAIP - 2009.
3) Existing bike path and railroad data from the SCCRTC.
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6) Hillshade NED data from CaSIL - 10 meter elevation grid point resolution.

Figure 4-17

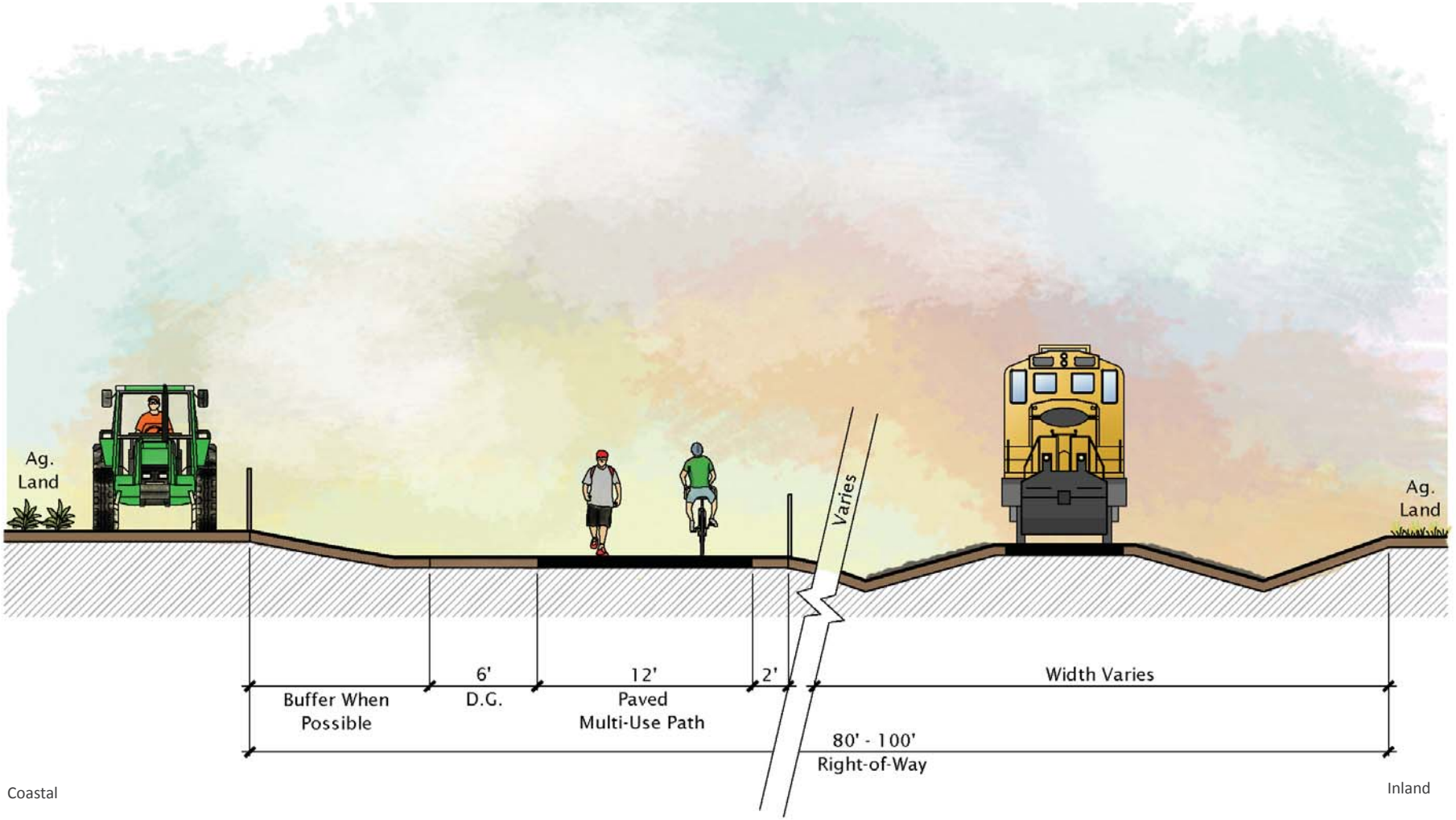
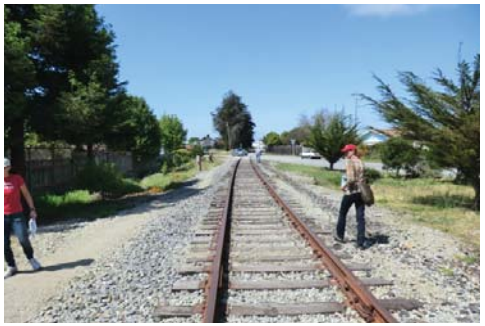


Figure 4-18 Segment 6 Section

Areas with excess right-of-way or under utilized land have potential to become trail staging areas

Vacant parcel south of the intersection of Rankin Street at Almar Avenue



Rail right-of-way at Seaside Street

4.7 SEGMENT 7 - COASTAL SANTA CRUZ

Length: 3.10 Miles (16,340 LF) - Antonelli Pond to Pacific Avenue and Beach Street Intersection

4.7.1 SEGMENT 7 BOUNDARY DETERMINATION

The boundary for Segment 7 was determined due to its proximity to the Moore Creek rail trestle bridge which serves as a logical segment start/end point as it presents a significant funding constraint. The segment terminus occurs down coast near Depot Park in the City of Santa Cruz at the intersection of Beach Street and Coastal Cliff Drive. This area includes a trailhead with vehicle parking, bicycle racks, playground, train depot, and trail connection to the Monterey Bay National Marine Discovery Center. The existing trailhead amenities provide an ideal start/end point that connects residential neighborhoods, schools, commercial, tourist destinations, coastal access, and industrial employment centers.

4.7.2 SEGMENT 7 DESCRIPTION

The rail alignment setting changes significantly in this segment of the Central Reach. This segment of the proposed Coastal Rail Trail is at the epicenter of several existing trail system networks as well as recreational facilities such as Wilder Ranch State Park, Younger Lagoon Reserve, Antonelli Pond Park, Natural Bridges State Beach, and connectors to Cliff Drive coastal walk. Beginning at the Moore Creek rail trestle bridge and heading down coast, the rail line crosses an existing at-grade street crossing at Natural Bridges Drive and then travels down coast through industrial, commercial, and residential areas for the next several miles. This segment of the rail line is flat and open with numerous at-grade street crossings. The proposed trail facility would follow within the rail right-of-way on the coastal side of the rail tracks with at-grade crossings at Swift Street, Fair Avenue, Almar Avenue, and Rankin Street. The Rankin Street at-grade crossing will provide an opportunity for the trail to cross from the coastal side of the tracks to the inland side and parallel the inland side rail right-of-way toward Neary Lagoon Park. The Rankin Street to Neary Lagoon stretch will involve up to six additional at-grade residential street crossings. These residential streets are characterized by fairly slow vehicle speeds and low volume traffic. The trail facility will follow the inland rail right-of-way to Neary Lagoon Park, where it will eventually cross two diverter rail tracks to connect with the existing rail trail at Depot Park. The two diverter track crossings at Neary Lagoon Park will be incorporated with two existing unsignaled maintenance vehicle rail at-grade crossings in the same general location. The existing rail trail from Depot Park parallels the rail track on the inland side, connects to the new Monterey Bay National Marine Sanctuary Exploraton Center, and terminates at the Pacific Avenue and Beach Street intersection. Segment 7 is in proximity to nine (9) different activity centers, as identified in Table 3.1.

Segment 7 Proposed Facilities Include:

- 3.10 Miles (16,340 LF) multi-use paved path
- 410 (LF) Class III bike route
- 15 street and rail crossings

TABLE 4.7 Segment 7 - Coastal Santa Cruz				
Segment Length	**3.10 miles (16,340 LF) - Coastal Santa Cruz**			
Rail Trail Portion	2.17 miles (11,450)			
Coastal Trail Portion	0.93 miles (4,890 LF)			
Segment Phase	**II**			
Segment Cost	**$5,659,147**			

Rail Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	11,450	Linear Feet	$162	$1,854,900
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$124,000
Bridge Structures	0	Each	Varies	$0
Staging Area Access	1	Each	$80,000	$80,000
At-Grade Crossings (Rail Tracks or Streets)	18	Each	Varies	$1,110,000
			Rail Trail Construction Cost Subtotal	**$3,168,900**

Coastal Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	4,480	Linear Feet	$162	$725,760
Unpaved Trail	0	Linear Feet	Varies	$0
On Street Facilites (Class II, III and Sidewalks)	410		$20	$8,200
			Coastal Trail Construction Cost Subtotal	**$733,960**

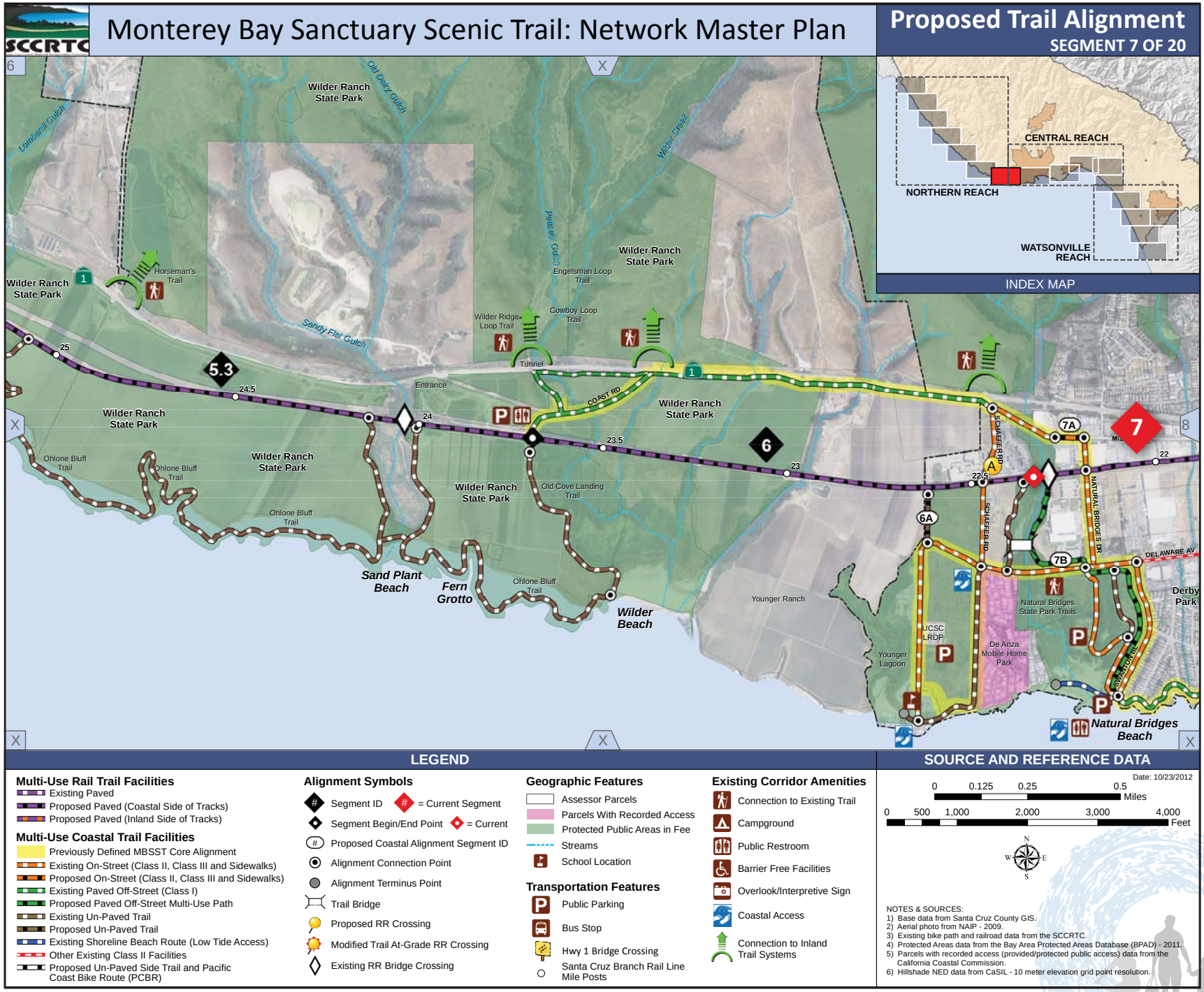
Cost Summary	
Construction Cost Total	$3,902,860
Design and Engineering (15%)	$585,429
Design Contingency (20%)	$780,572
Environmental Permitting (10%)	$390,286
SEGMENT TOTAL COST	**$5,659,147**

Segment Features	Description	Quantity
Segment Jurisdictional Area	State Parks, County, RTC - Rail ROW Owner, City of Santa Cruz	3
Major Roadway Crossings	Natural Bridges Drive, Rankin Street	3
Minor Roadway Crossings	Various residential streets	11
Trail At-Grade Railroad Crossings	Rankin Street/Two crossings at Depot Park	3
Major Drainage	Antonelli Pond/Creek	1
Minor Drainage	Various	3
Existing Staging Areas/Rest Stops	Wilder Ranch	1
Connection To Other Trails	Wilder Ranch Trail System	3
Within 1/4 mile of Public School	Pacific Collegiate School, Gateway School, United Methodist Church School	5
Connection to Public Beach	Wilder Beach, Younger Lagoon	2
Connection to Commercial Area	Multiple	5
Connection to Residential Area	Multiple	4
Connection to Passive Park	Wilder Ranch/Neary Lagoon Park/Depot Site Park	3

Intersection of Beach Street with Front Street, Marine Sanctuary Exploration Center in the background

Safety challenges are present at the intersection of Beach Street and Front Street

Two-way cycle-track separated from vehicles and pedestrians


Monterey Bay Sanctuary Scenic Trail: Network Master Plan
SCCRTC
Proposed Trail Alignment
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CENTRAL REACH
NORTHERN REACH
WATSONVILLE REACH
Wilder Ranch State Park
Old Dairy Gulch
Lombardi Gulch
Wilder Creek
Peasley Gulch
Sandy Flat Gulch
Horseman's Trail
Engelsman Loop Trail
Wilder Ridge Loop Trail
Cowboy Loop Trail
Tunnel
Entrance
COAST RD
Ohlone Bluff Trail
Old Cove Landing Trail
Sand Plant Beach
Fern Grotto
Wilder Beach
Younger Ranch
Younger Lagoon
UCSC LRDP
De Anza Mobile Home Park
Natural Bridges State Park Trails
Natural Bridges Beach
Derby Park
SCHAFFER RD
NATURAL BRIDGES DR
DELAWARE AV
MISSION ST
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6
6A
7
7A
7B
A
25
24.5
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23.5
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LEGEND
Multi-Use Rail Trail Facilities
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Proposed Paved (Coastal Side of Tracks)
Proposed Paved (Inland Side of Tracks)
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Modified Trail At-Grade RR Crossing
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Public Restroom
Barrier Free Facilities
Overlook/Interpretive Sign
Coastal Access
Connection to Inland Trail Systems
SOURCE AND REFERENCE DATA
Date: 10/23/2012
0 0.125 0.25 0.5 Miles
0 500 1,000 2,000 3,000 4,000 Feet
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W
E
S
NOTES & SOURCES:
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6) Hillshade NED data from CaSIL - 10 meter elevation grid point resolution.

Figure 4-19

Monterey Bay Sanctuary Scenic Trail: Network Master Plan

Proposed Trail Alignment
SEGMENT 7 OF 20

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- Parcels With Recorded Access
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Existing Corridor Amenities
- Connection to Existing Trail
- Campground
- Public Restroom
- Barrier Free Facilities
- Overlook/Interpretive Sign
- Coastal Access
- Connection to Inland Trail Systems

SOURCE AND REFERENCE DATA

Date: 10/23/2012

0 0.125 0.25 0.5 Miles

0 500 1,000 2,000 3,000 4,000 Feet

N W E S

NOTES & SOURCES:
1) Base data from Santa Cruz County GIS.
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3) Existing bike path and railroad data from the SCCRTC.
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6) Hillshade NED data from CaSIL - 10 meter elevation grid point resolution.

Figure 4-20

Figure 4-21 Segment 7 Section

Cowell's Beach with railroad tracks emerging from trees

Santa Cruz Beach Boardwalk

Bike racks at the Santa Cruz Beach Boardwalk

Two-way cycle track adjacent to Santa Cruz Beach Boardwalk

4.8 SEGMENT 8 - SANTA CRUZ BEACH BOARDWALK

Length: 0.77 Miles (4,070 LF) - Beach Street Intersection to San Lorenzo Rail Bridge Crossing

4.8.1 SEGMENT 8 BOUNDARY DETERMINATION

The boundaries for Segment 8 are determined by current well-defined existing facilities that run along Beach Street and Santa Cruz Beach Boardwalk. It extends from Beach Street and the Pacific Street intersection to San Lorenzo River Railroad Bridge.

4.8.2 SEGMENT 8 DESCRIPTION

This existing segment of the trail alignment consists of a two-way cycle-track which follows the coastal side of Beach Street to the San Lorenzo River Rail Bridge. The two-way cycle-track continues between the pedestrian beach boardwalk and the one-way travel lanes along Beach Street. The rail tracks traverse down the middle of Beach Street's three-lane, one-way street. The bike path crosses the rail tracks mid-block as the rail line merges to the rail bridge crossing of the San Lorenzo River. The existing bike path currently crosses the train tracks at an extreme angle posing a problem for bike tires crossing the rail track openings and creating poor visibility of cyclist and train operators where the tracks and trail converge. The existing cycle-track terminates at Beach Street and 3rd Street with a short gap through a public parking lot to connect to the San Lorenzo River Trail system. Bicyclist and pedestrians continuing down coast and across the San Lorenzo River using the existing narrow rail bridge pedestrian crossing. A new pre-engineered bike and pedestrian bridge will be proposed to cross the San Lorenzo River. There are up to 53 activity centers in proximity to Segment 8, details can be found in Table 3.1

Segment 8 Proposed Facilities Include:

- One (1) new pre-engineered bike and pedestrian bridge, 300-ft span
- Improvements to existing cycle-track with future roadway roundabout at Pacific Avenue and Beach Street

TABLE 4.8 Segment 8 - Santa Cruz Beach Boardwalk				
Segment Length	**0.77 miles (4,070 LF) - Santa Cruz Beach Boardwalk**			
Rail Trail Portion	0.0 miles (0 LF)			
Coastal Trail Portion	0.77 miles (4,070 LF)			
Segment Phase	**I**			
Segment Cost	**$1,731,300**			
Rail Trail Components	**Quantitiy**	**Unit**	**Unit Price**	**Cost**
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$4,000
Bridge Structures	1	Each		$900,000
At-Grade Crossings (Rail Tracks or Streets)	1	Each	$250,000	$250,000
			Rail Trail Construction Cost Subtotal	**$1,154,000**
Coastal Trail Components	**Quantitiy**	**Unit**	**Unit Price**	**Cost**
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Unpaved Trail	0	Linear Feet	Varies	$0
On Street Facilites (Class II, III and Sidewalks)	2,000	Linear Feet	$20	$40,000
			Coastal Trail Construction Cost Subtotal	**$40,000**
Cost Summary				
Construction Cost Total				$1,194,000
Design and Engineering (15%)				$179,100
Design Contingency (20%)				$238,800
Environmental Permitting (10%)				$119,400
			SEGMENT TOTAL COST	**$1,731,300**

Segment Features	Description	Quantity
Segment Jurisdictional Area	RTC - Rail ROW Owner, City of Santa Cruz	2
Major Roadway Crossings	Beach and West Cliff	1
Trail At-Grade Railroad Crossings	Existing Crossing on Beach Street	1
Rail Bridge Crossing (Wood Trestle)	Existing Crossing on San Lorenzo Bridge	1
Railroad right-of-way, 35’ wide or less	At existing San Lorenzo Bridge Location	1
Major Drainage	San Lorenzo River (existing bridge crossing)	1
Existing Staging Areas/Rest Stops	New Visitor Center/Santa Cruz Beach Wharf/Boardwalk	3
Connection To Other Trails	San Lorenzo River Trail System	1
Connection to Public Beach	Cowell's Beach, Main Beach	2
Connection to Commercial Area	Downtown Santa Cruz	1
Connection to Residential Area	Multiple	2
Connection to Passive Park	Main Beach/Cowell's Beach	2

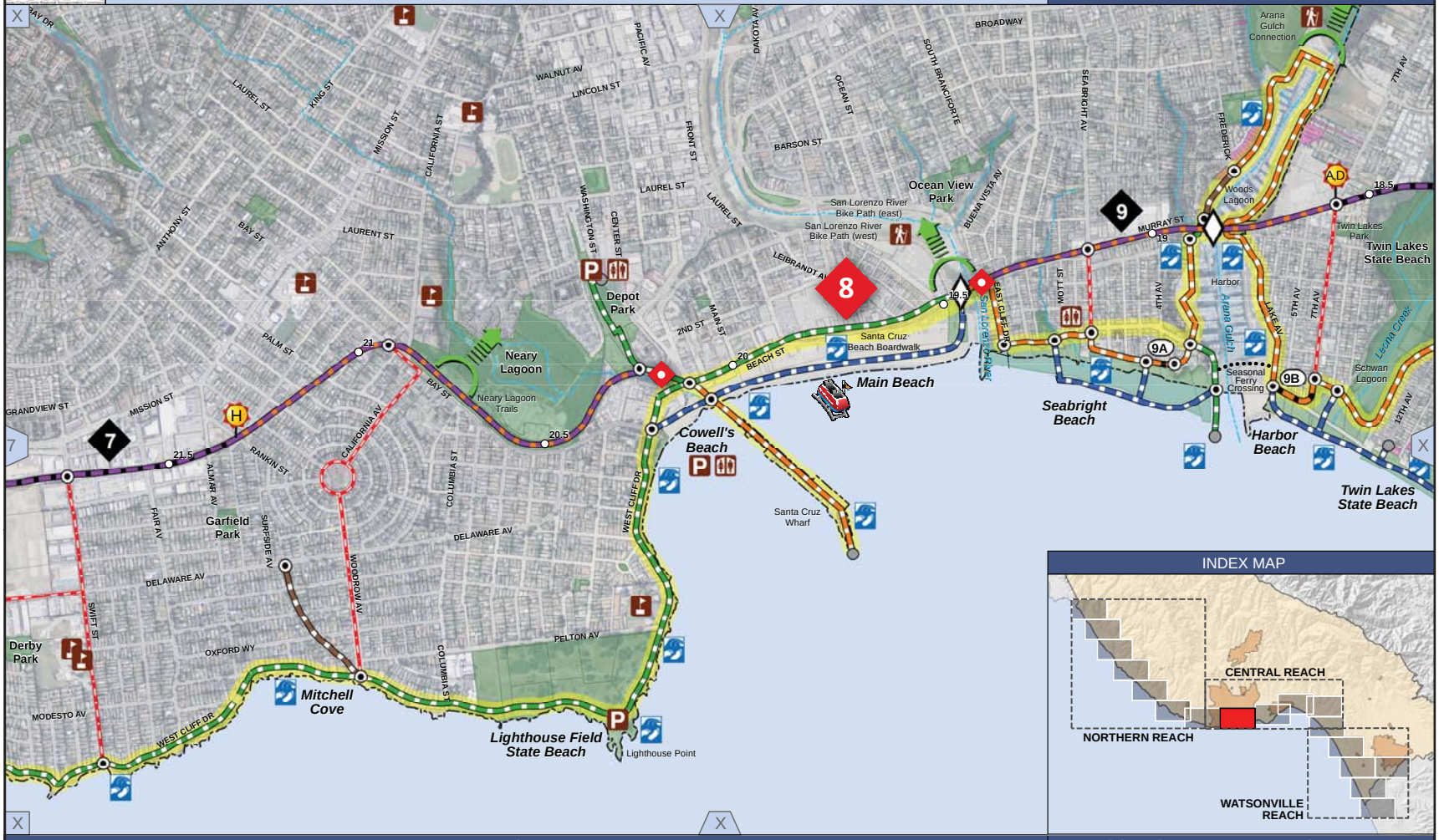
Cycle track adjacent to Boardwalk

Entrance sign to the Santa Cruz Wharf

Rail track interface

Monterey Bay Sanctuary Scenic Trail: Network Master Plan

Proposed Trail Alignment
SEGMENT 8 OF 20



INDEX MAP

LEGEND

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- Barrier Free Facilities
- Overlook/Interpretive Sign
- Coastal Access
- Connection to Inland Trail Systems

SOURCE AND REFERENCE DATA

Date: 10/23/2012

0 0.125 0.25 0.5 Miles

0 500 1,000 2,000 3,000 4,000 Feet

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Figure 4-22

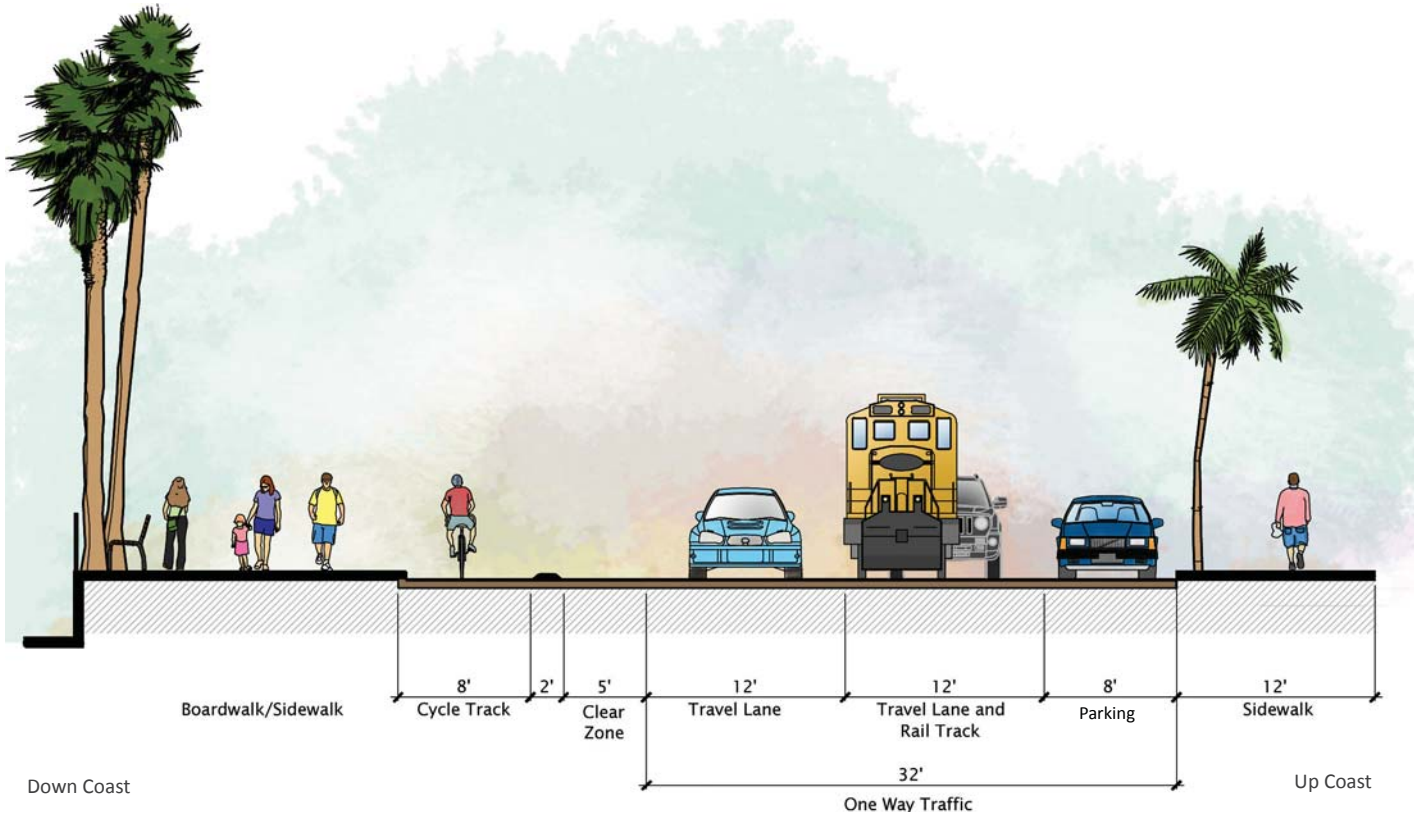
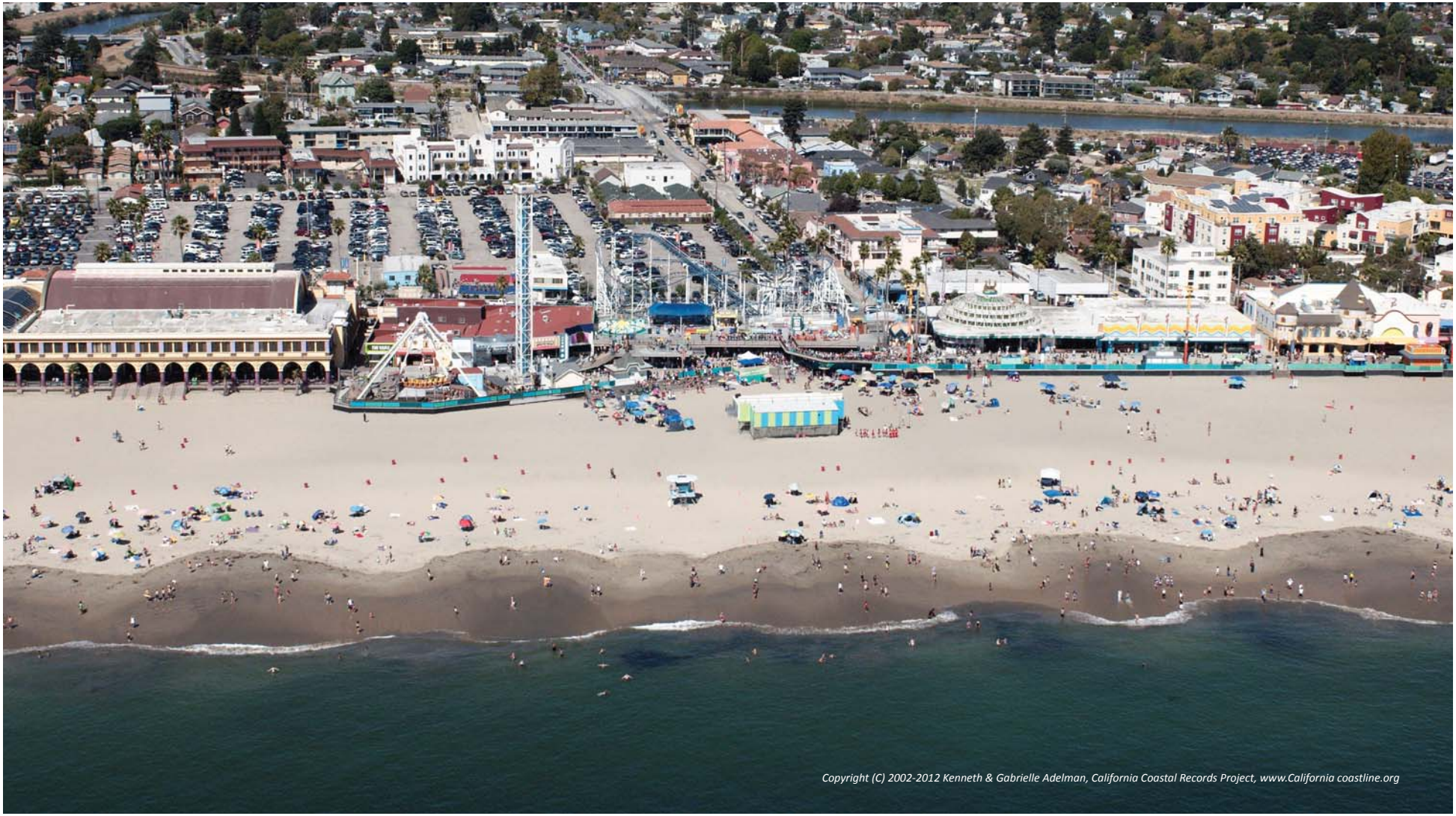


Figure 4-23 Segment 8 Section



Santa Cruz Beach Boardwalk

Santa Cruz Beach Boardwalk with railroad bridge

Santa Cruz Harbor view from railroad tracks

Train tracks over Santa Cruz Harbor

Class II bike route adjacent to railroad tracks on Murray Street

4.9 SEGMENT 9 - TWIN LAKES

Length: 1.73 Miles - (9,140 LF) - Down coast side of San Lorenzo Rail Bridge to 17th Avenue at-grade railroad crossing

4.9.1 SEGMENT 9 BOUNDARY DETERMINATION

The boundaries for Segment 9 are based on connections to existing facilities at the San Lorenzo Bridge crossing down coast to the 17th Street entrance to the Simpkins Swim Center. This segment of the proposed alignment would make a significant safe multi-use path connection from the Main Beach waterfront and the San Lorenzo Trail System to The Harbor, Twin Lakes State Beach, and neighborhoods surrounding the Simpkins Swim Center

4.9.2 SEGMENT 9 DESCRIPTION

The existing San Lorenzo River Rail Bridge offers pedestrian access on the bridge superstructure. The attached pedestrian walkway on the inland side of the rail bridge is narrow and difficult to accommodate passing pedestrians and cyclists walking their bikes across the bridge. The current pedestrian and bike access along Murray Street down coast to Seabright Avenue is primarily an on-street Class II bike lane and a 4-ft wide sidewalk on the coastal side of Murray Street. The sidewalk ends at Mott Avenue, one block before Seabright Avenue and merges onto the small frontage street of Murray and connects to Seabright Avenue. The rail trail continues down coast to 7th Avenue. The 7th Avenue at-grade railroad crossing provides a safe rail track crossing for the proposed rail trail to switch from the inland side of the tracks to the coastal side of the rail tracks to eventually cross Twin Lakes State Beach to Simpkins Swim Center.

There are two existing bridges crossing Woods Lagoon (the Santa Cruz small craft harbor) along Murray Street, one is the existing rail bridge and other is the existing Murray Street roadway bridge paralleling the coastal side of the rail bridge. The 4-ft wide bike lanes continue across the existing narrow vehicle bridge along with the 4-ft wide sidewalk located on the coastal side of the bridge. At the bridge abutment there are pedestrian stairs leading from the Murray Street corridor down to the existing Arana Gulch trail system within Woods Lagoon and the Harbor. There are plans to replace the existing vehicle bridge crossing at this location which would include upgrades to pedestrian and bike facility crossings of Woods Lagoon/Arana Gulch. As the rail bridge and Murray Street bridge head down coast across Woods Lagoon, the street and rail alignments begin to pull away from one another. Murray Street merges into Eaton Street and eventually ends just past 7th Street. The existing bike lanes and sidewalks continue down Eaton Street to 7th Street. The railroad alignment continues down coast after the Harbor crossing and the right-of-way opens up down the corridor toward Schwan Lagoon, Simpkins Family Swim Center and 17th Street at-grade rail crossing. The proposed rail trail would continue along the coastal side of the tracks from Woods Lagoon crossing all the way to 17th Street. A new pedestrian at-grade crossing is proposed adjacent to the Simpkins Family Swim Center parking lot to access El Dorado Avenue on the inland side of the tracks. Segment 9 connects to 46 activity centers and multiple residential neighborhoods, as identified in Table 3.1.

Segment 9 Proposed Facilities Include:

- 1.73 Miles (9,140 LF) Multi-use paved path,
- One (1) new pre-engineered bike/pedestrian bridge crossing 200’ span

TABLE 4.9 Segment 9 - Twin Lakes				
Segment Length	**1.73 miles (9,140 LF) - Twin Lakes**			
Rail Trail Portion	1.53 miles (8,100 LF)			
Coastal Trail Portion	0.20 miles (1,040 LF)			
Segment Phase	**I**			
Segment Cost	**$4,932,886**			

Rail Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	8,100	Linear Feet	Varies	$1,640,250
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$85,500
Bridge Structures	1	Each		$1,000,000
At-Grade Crossings (Rail Tracks or Streets)	5	Each	Varies	$670,000
			Rail Trail Construction Cost Subtotal	**$3,395,750**

Coastal Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Unpaved Trail	0	Linear Feet	Varies	$0
On Street Facilites (Class II, III and Sidewalks)	1,040	Linear Feet	$6	$6,240
			Coastal Trail Construction Cost Subtotal	**$6,240**

Cost Summary	
Construction Cost Total	$3,401,990
Design and Engineering (15%)	$510,299
Design Contingency (20%)	$680,398
Environmental Permitting (10%)	$340,199
SEGMENT TOTAL COST	**$4,932,886**

Segment Features	Description	Quantity
Segment Jurisdictional Area	City of Santa Cruz/RTC - Rail Row Owner/Port District	-
Minor Roadway Crossings	Seabright Street, 7t Street, 17tgh Street	3
Trail At-Grade Railroad Crossings	Seabright Street	1
Rail Bridge Crossing (Wood Trestle)	Woods Lagoon	1
Rail Bridge Crossing (Concrete)	Twin Lakes	1
Major Drainage	Woods Lagoon	1
Minor Drainage	Leona Creek	1
Existing Staging Areas/Rest Stops	Simkin's Swim Center	1
Connection To Other Trails	Woods Lagoon/Arana Gulch	2
Within 1/4 Mile of Public School	Multiple	3
Connection to Commercial Area	Multiple	3
Connection to Passive Park	Twin Lakes/Twin Lakes State Beach	4
Connection to Sports Park	Simkin's Swim Center	1

Rail right-of-way with residential units backing onto the corridor

Twin Lakes State Beach and Schwan Lagoon trail access

Woods Lagoon with Twin Lakes multi-use path

Monterey Bay Sanctuary Scenic Trail: Network Master Plan

Proposed Trail Alignment
SEGMENT 9 OF 20

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LEGEND

Multi-Use Rail Trail Facilities
- Existing Paved
- Proposed Paved (Coastal Side of Tracks)
- Proposed Paved (Inland Side of Tracks)

Multi-Use Coastal Trail Facilities
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- Existing Paved Off-Street (Class I)
- Proposed Paved Off-Street Multi-Use Path
- Existing Un-Paved Trail
- Proposed Un-Paved Trail
- Existing Shoreline Beach Route (Low Tide Access)
- Other Existing Class II Facilities
- Proposed Un-Paved Side Trail and Pacific Coast Bike Route (PCBR)

Alignment Symbols
- Segment ID / = Current Segment
- Segment Begin/End Point / = Current
- Proposed Coastal Alignment Segment ID
- Alignment Connection Point
- Alignment Terminus Point
- Trail Bridge
- Proposed RR Crossing
- Modified Trail At-Grade RR Crossing
- Existing RR Bridge Crossing

Geographic Features
- Assessor Parcels
- Parcels With Recorded Access
- Protected Public Areas in Fee
- Streams
- School Location

Transportation Features
- Public Parking
- Bus Stop
- Hwy 1 Bridge Crossing
- Santa Cruz Branch Rail Line Mile Posts

Existing Corridor Amenities
- Connection to Existing Trail
- Campground
- Public Restroom
- Barrier Free Facilities
- Overlook/Interpretive Sign
- Coastal Access
- Connection to Inland Trail Systems

SOURCE AND REFERENCE DATA

Date: 10/23/2012

0 0.125 0.25 0.5 Miles

0 500 1,000 2,000 3,000 4,000 Feet

NOTES & SOURCES:
1) Base data from Santa Cruz County GIS.
2) Aerial photo from NAIP - 2009.
3) Existing bike path and railroad data from the SCCRTC.
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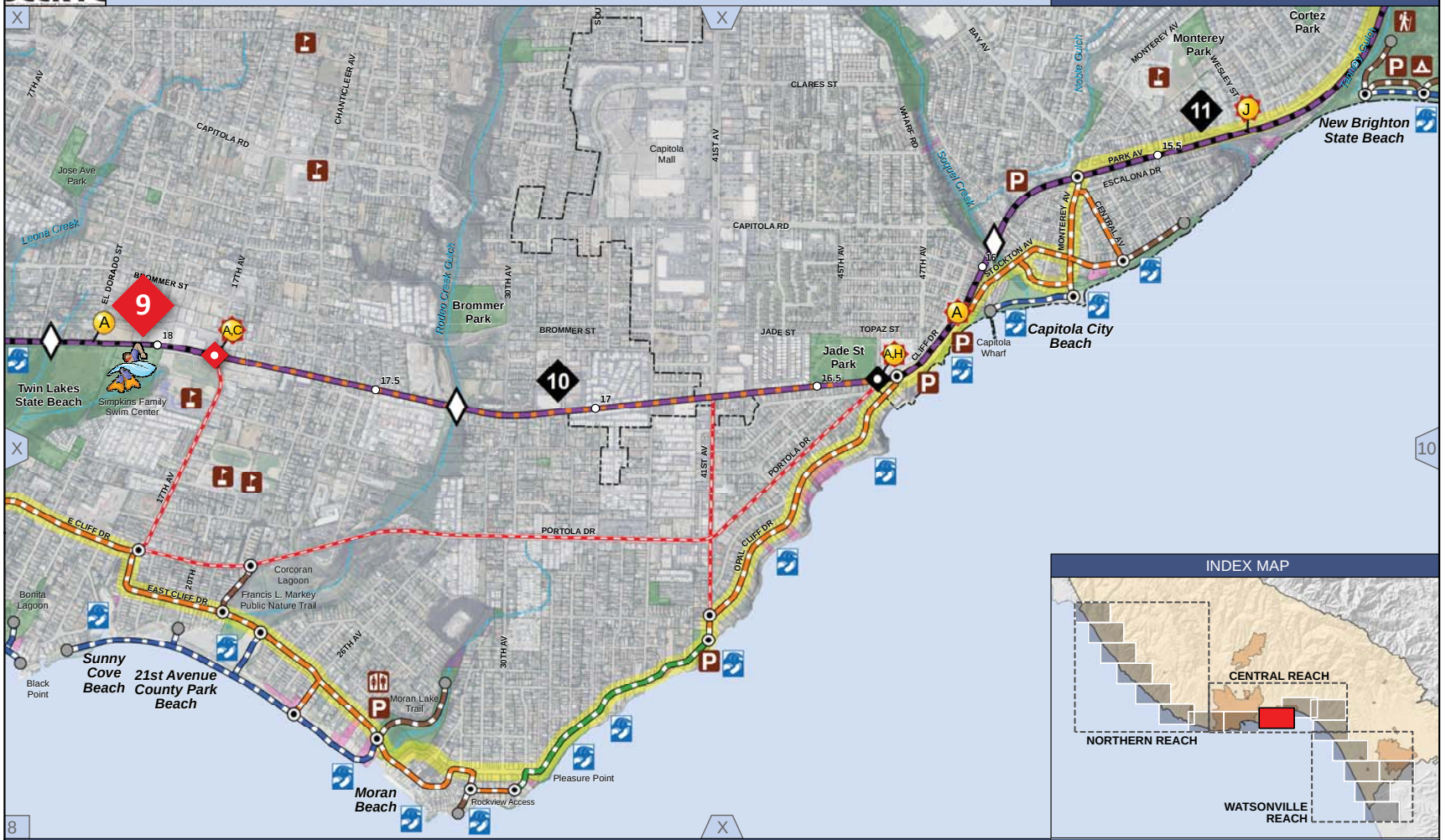
6) Hillshade NED data from CaSIL - 10 meter elevation grid point resolution.

Figure 4-24

Monterey Bay Sanctuary Scenic Trail: Network Master Plan

Proposed Trail Alignment
SEGMENT 9 OF 20



INDEX MAP

LEGEND

Multi-Use Rail Trail Facilities
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- Proposed Paved (Coastal Side of Tracks)
- Proposed Paved (Inland Side of Tracks)

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Figure 4-25

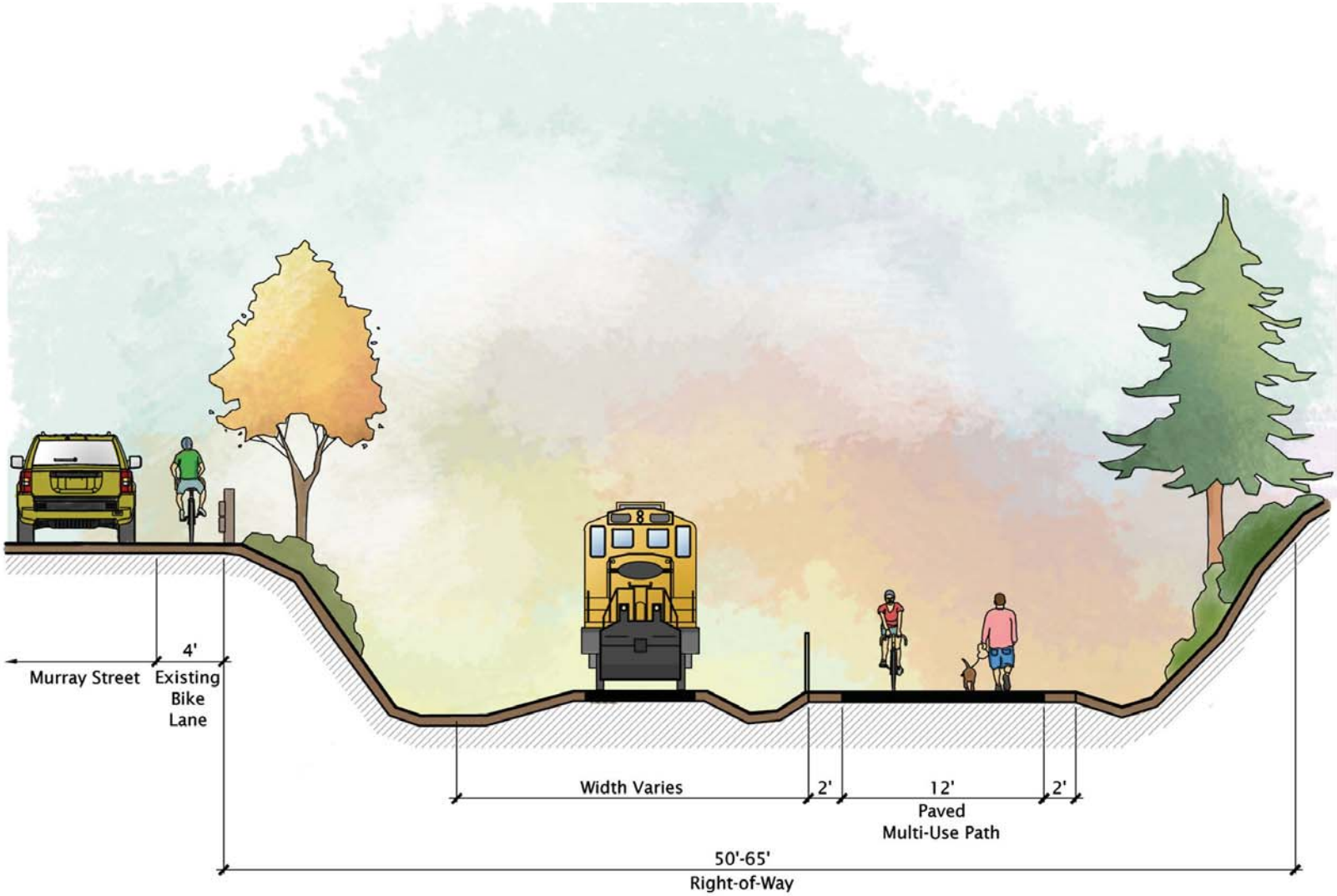
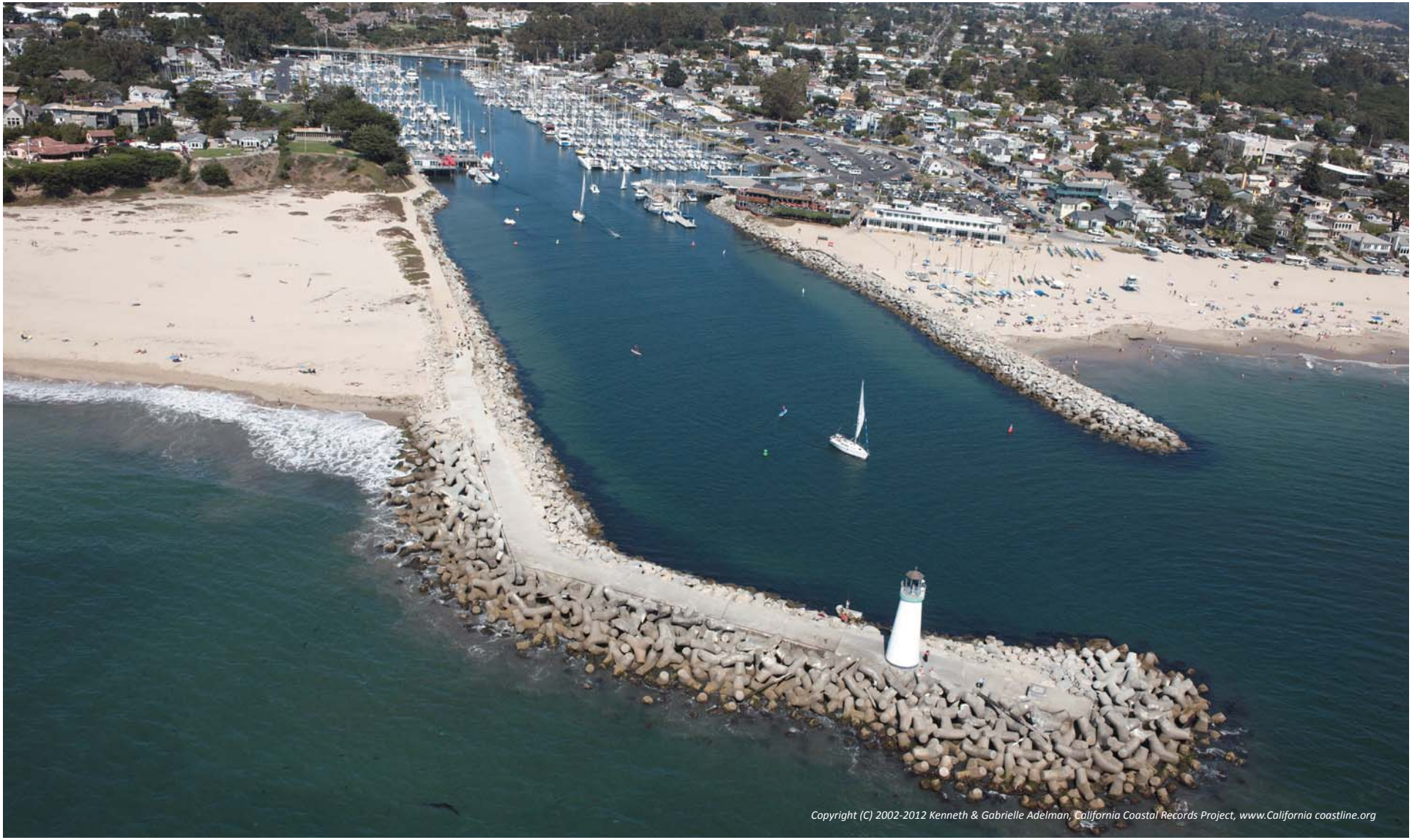


Figure 4-26 Segment 9 Section



Santa Cruz Harbor

Railroad tracks adjacent to Jade Street Park

Unauthorized paths and bike jumps illustrate the need for trail improvements

Residential unit adjacent to railroad tracks at the 47th Avenue and Portola Drive intersection

4.10 SEGMENT 10 - LIVE OAK - JADE STREET PARK

Length: 1.50 Miles (7,940 LF) - 17th Avenue At-grade Railroad Crossing to Jade Street Park at 47th Avenue

4.10.1 SEGMENT 10 BOUNDARY DETERMINATION

The boundary for Segment 10 begins at the inland side of the 17th Avenue intersection and ends down coast at Jade Street Park where the railroad crosses 47th Avenue in Capitola. This segment of the railroad right-of-way is only 30-ft wide and will require rail track realignment to accommodate the trail within the right-of-way.

4.10.2 SEGMENT 10 DESCRIPTION

The segment of the railroad right-of-way from the 17th Avenue at-grade crossing, heading down coast, is only 30-ft to 34-ft wide. This narrow right-of-way does not allow enough room for the rail tracks and two-way trail alignment to commingle without realigning the railroad track bed. This issue is exacerbated due to several adjacent property owners who have encroached into the railroad right-of-way. The proposed alignment would also include a pre-engineered bike / pedestrian bridge over Rodeo Creek Gulch on the inland side of the rail trestle bridge. This narrow right-of-way scenario continues down coast 1 ¼ miles to Jade Street Park at 47th Avenue in the city of Capitola. The existing surface street bike lanes and pedestrian sidewalks between 17th Avenue and 47th Avenue will serve as interim access until design solutions for this segment of the rail trail corridor route is completed. This short segment connects to 34 activity centers identified in detail in Table 3.1.

Segment 10 Proposed Facilities Include:

- 1.50 Miles (7,940 LF) Multi-use paved path along the rail right-of-way
- Move approximately 7,940 LF of rail track and signal arm assemblies
- One (1) pre-engineered bike/pedestrian bridge crossing at Rodeo Creek Gulch 200-ft span
- Three (3) non-signalized street crossings

TABLE 4.10 Segment 10 - Live Oak-Jade Street Park

Segment Length	**1.50 miles (7,940 LF) - Live Oak-Jade Street Park**
Rail Trail Portion	1.50 miles (7,940 LF)
Coastal Trail Portion	0.0 miles (0 LF)
Segment Phase	**II**
Segment Cost	**$7,121,530**

Rail Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	7,940	Linear Feet	$405	$3,215,700
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$645,700
Bridge Structures	1	Each	$450,000	$450,000
At-Grade Crossings (Rail Tracks or Streets)	5	Each	Varies	$600,000
			Rail Trail Construction Cost Subtotal	**$4,911,400**

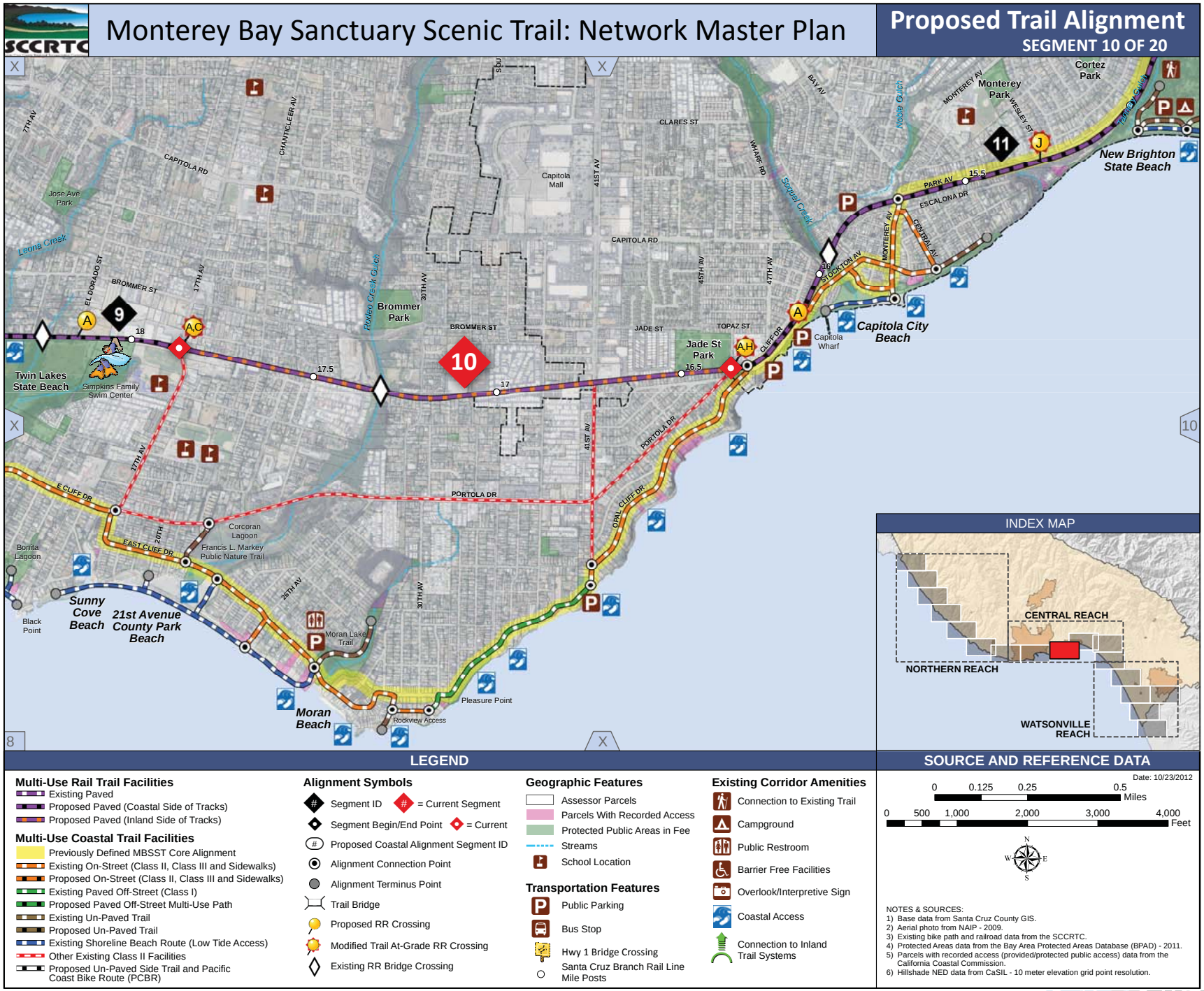
Coastal Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Unpaved Trail	0	Linear Feet	Varies	$0
On Street Facilites (Class II, III and Sidewalks)	0	Linear Feet	Varies	$0
			Coastal Trail Construction Cost Subtotal	**$0**

Cost Summary	
Construction Cost Total	$4,911,400
Design and Engineering (15%)	$736,710
Design Contingency (20%)	$982,280
Environmental Permitting (10%)	$491,140
SEGMENT COST TOTAL	**$7,121,530**

Segment Features	Description	Quantity
Minor Roadway Crossings	30th Ave, 38th Ave, 41st Ave, 47th Ave	4
Trail At-Grade Railroad Crossings	17th Ave, 47th Ave	2
Rail Bridge Crossing (Wood Trestle)	Rodeo Creek Gulch Crossing	1
Railroad right-of-way, 35’ wide or less	Entire Segment Length	1.50 miles
Minor Drainage	Rodeo Creek Gulch	1
Existing Staging Areas/Rest Stops	Jade Park	1
Within 1/4 Mile of Public School	Del Mar Elementary, Cypress High School, Shoreline Middle School, Live Oak Elementary	4
Connection to Commercial Area	Light industrial, retail, commercial	3
Connection to Residential Area	Multiple	6
Connection to Sports Park	Jade Street Park, Simpkin's Swim Center, Brommer Park	3
Other	Santa Cruz County Sheriff Services, Central Fire Protection Services, Santa Cruz County Road Maintenance	3

Jade Street Park

Railroad right-of-way with just enough room to accommodate a multi-use path


Monterey Bay Sanctuary Scenic Trail: Network Master Plan
Proposed Trail Alignment
SEGMENT 10 OF 20
Twin Lakes State Beach
Simpkins Family Swim Center
Sunny Cove Beach
21st Avenue County Park Beach
Moran Beach
Capitola City Beach
New Brighton State Beach
Brommer Park
Jade St Park
Capitola Mall
Capitola Wharf
Cortez Park
Monterey Park
Corcoran Lagoon
Francis L. Markey Public Nature Trail
Moran Lake Trail
Pleasure Point
Rockview Access
Bonita Lagoon
Black Point
Jose Ave Park
CAPITOLA RD
CLARES ST
BROMMER ST
JADE ST
TOPAZ ST
PORTOLA DR
E CLIFF DR
EAST CLIFF DR
CLIFF DR
ESCALONA DR
PARK AV
MONTEREY AV
STOCKTON AV
CENTRAL AV
WHARF RD
41ST AV
45TH AV
47TH AV
30TH AV
26TH AV
20TH
17TH AV
7TH AV
Rodeo Creek Gulch
Soquel Creek
Noble Gulch
Leona Creek
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0 0.125 0.25 0.5 Miles
0 500 1,000 2,000 3,000 4,000 Feet
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Figure 4-27

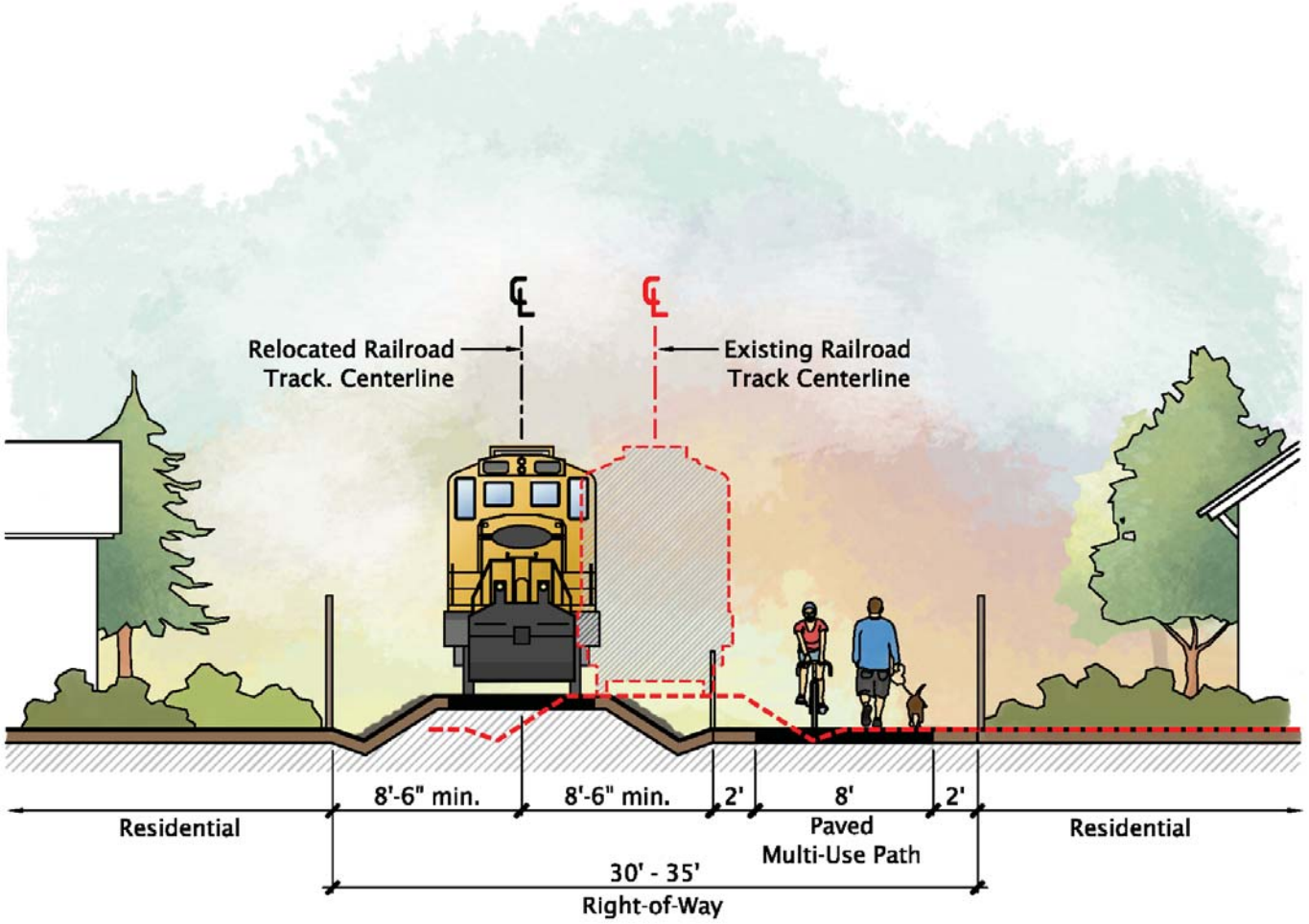

Figure 4-28 Segment 10 Section

4.11 SEGMENT 11 - CAPITOLA - SEACLIFF

Length: 3.20 Miles (16,880 LF) - Jade Street Park at 47th Avenue to State Park Drive

4.11.1 SEGMENT 11 BOUNDARY DETERMINATION

The boundary for Segment 11 is determined by the phasing of Segment 10 which falls within a narrow stretch of rail right-of-way and dependent on access over Soquel Creek. Segment 11 runs from Jade Street Park at 47th Avenue down coast to State Park Drive. This segment is impacted by extreme topography, dense urban development, and infrastructure constraints through Capitola. The existing on-street bike and pedestrian facilities will need to support the connection for the Coastal Rail Trail until segment 10 and 11 can be completed.

4.11.2 SEGMENT 11 DESCRIPTION

The rail right-of-way heading down coast toward Capitola along Cliff Drive has diagonal parking spaces encroaching from Cliff Drive on the coastal side of the tracks and steep sloping grades up to an existing pedestrian overlook adjacent to Prospect Avenue on the inland side of the tracks. This stretch will need retaining walls or be rerouted with grade changes to accommodate the trail on the inland side of the tracks. The greatest challenge in this segment is the rail trestle crossing of Soquel Creek. The current rail trestle passes through a historic district. There are current discussions about improvements to this bridge trestle due to structural conditions. Coastal trail access through this area would need to continue on existing surface streets and sidewalks to cross Soquel Creek and navigate through Capitola Village. Future plans for the rail trestle replacement should include a new bike/pedestrian facility in the bridge design. This crossing could also consider an iconic bike and pedestrian bridge that would span the 500' long Soquel Creek crossing. This iconic bridge would require intricate design solutions to accommodate the footings and superstructure in the severely limited space below the bridge.

After the Soquel Creek crossing, the rail line continues down coast along an embankment on the edge of Capitola Village to the at-grade crossing of Monterey Avenue. The proposed rail trail would continue through the Monterey Avenue crossing on the inland side of the tracks. As the rail line heads down coast past Monterey Avenue, the tracks merge closer to the coastal edge as it approaches New Brighton State Beach. The trail alignment would switch from the inland side of the tracks to the coastal side at the existing Grove Lane at-grade crossing just before entering New Brighton State Beach. This area of the corridor offers access to the existing trail network within the park, access to the beach, and unobstructed views down the coast. A small pre-engineered bridge would be needed to cross over the State Beach parking lot access road as the train tracks curve down coast through the State Beach property. The proposed trail would remain on the coastal side of the tracks all the way through the State Beach to the existing at-grade crossing of Estates Drive. From Estates Drive down coast the rail right-of-way narrows as it parallels Poplar Street. The rail corridor along the length of Poplar Street to Mar Vista Drive is just 34-ft wide. The trail would be forced between a narrow landscape buffer between Poplar Street and the railroad corridor. The trail alignment would continue down the coast side of the tracks after crossing the Mar Vista Drive intersection using the existing crosswalks. The existing crosswalks and possibly the roadway intersection corners would need to be modified to provide a safe crossing for bicyclist and pedestrians. The rail corridor is flanked by residential housing on both sides all the way to the State Park Drive at-grade crossing. This segment connects with 9 activity centers listed in Table 3.1.

Segment 11 Proposed Facilities Include:

- 3.20 Miles (16,880 LF) Multi-use paved path along the rail right-of-way
- Bike and pedestrian facilities to be included in any design plans for rail bridge replacement of the Soquel Creek rail crossing
- One (1) pre-engineered bike/pedestrian bridge at New Brighton State Beach 50-ft span
- Five (5) at-grade street crossings

TABLE 4.11 Segment 11 - Capitola-Sea Cliff

Segment Length	**3.20 miles (16,880 LF) - Capitola-Sea Cliff**
Rail Trail Portion	3.20 miles (16,880)
Coastal Trail Portion	0.0 miles (0 LF)
Segment Phase	**II**
Segment Cost	**$7,699,660**

Rail Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	16,880	Linear Feet	Varies	$3,815,910
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$269,200
Bridge Structures	1	Each	$200,000	$200,000
At-Grade Crossings (Rail Tracks or Streets)	10	Each	Varies	$1,025,000
			Rail Trail Construction Cost Subtotal	**$5,310,110**

Coastal Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Unpaved Trail	0	Linear Feet	Varies	$0
On Street Facilites (Class II, III and Sidewalks)	0	Linear Feet	Varies	$0
			Coastal Trail Construction Cost Subtotal	**$0**

Cost Summary	
Construction Cost Total	$5,310,110
Design and Engineering (15%)	$796,517
Design Contingency (20%)	$1,062,022
Environmental Permitting (10%)	$531,011
SEGMENT TOTAL COST	**$7,699,660**

Segment Features	Description	Quantity
Major Roadway Crossings	Cliff Drive	1
Minor Roadway Crossings	Monterey Ave, New Brighton Road	3
Private Road Crossings	Grove Street	1
Trail At-Grade Railroad Crossings	Cliff Drive, Grove Street, Mar Vista Drive	3
Rail Bridge Crossing (Wood Trestle)	Soquel Creek Crossing	1
Rail Bridge Crossing (Concrete)	Tannery Gulch, Borregas Creek Crossings	2
Railroad right-of-way, 35' wide or less	Near Poplar Street	1,200 linear feet
Major Drainage	Soquel Creek	1
Minor Drainage	Tannery Gulch in New Brighton State Beach, Bodegas Creek (also in New Brighton)	2
Existing Staging Areas/Rest Stops	Cliff Drive, New Brighton State Beach	2
Connection To Other Trails	Nisene Trails, California Coastal Trail	2
Within 1/4 Mile of Public School	New Brighton Middle School, Delta High School, Mar Vista Elementary School, Cabrillo College	4
Connection to Public Beach	Capitola City Beach, New Brighton State Beach	2
Connection to Commercial Area	Capitola Village	1
Connection to Residential Area	Numerous residential areas in Capitola	6
Connection to Passive Park	Soquel Creek Park, Noble Gulch Park, New Brighton State Beach, Seacliff State Beach	4

Railroad tracks overlooking Capitola Wharf and Capitola Village

Railroad trestle - used by pedestrians and bicyclists who will benefit by improved crossing conditions

Forest area near New Brighton State Beach

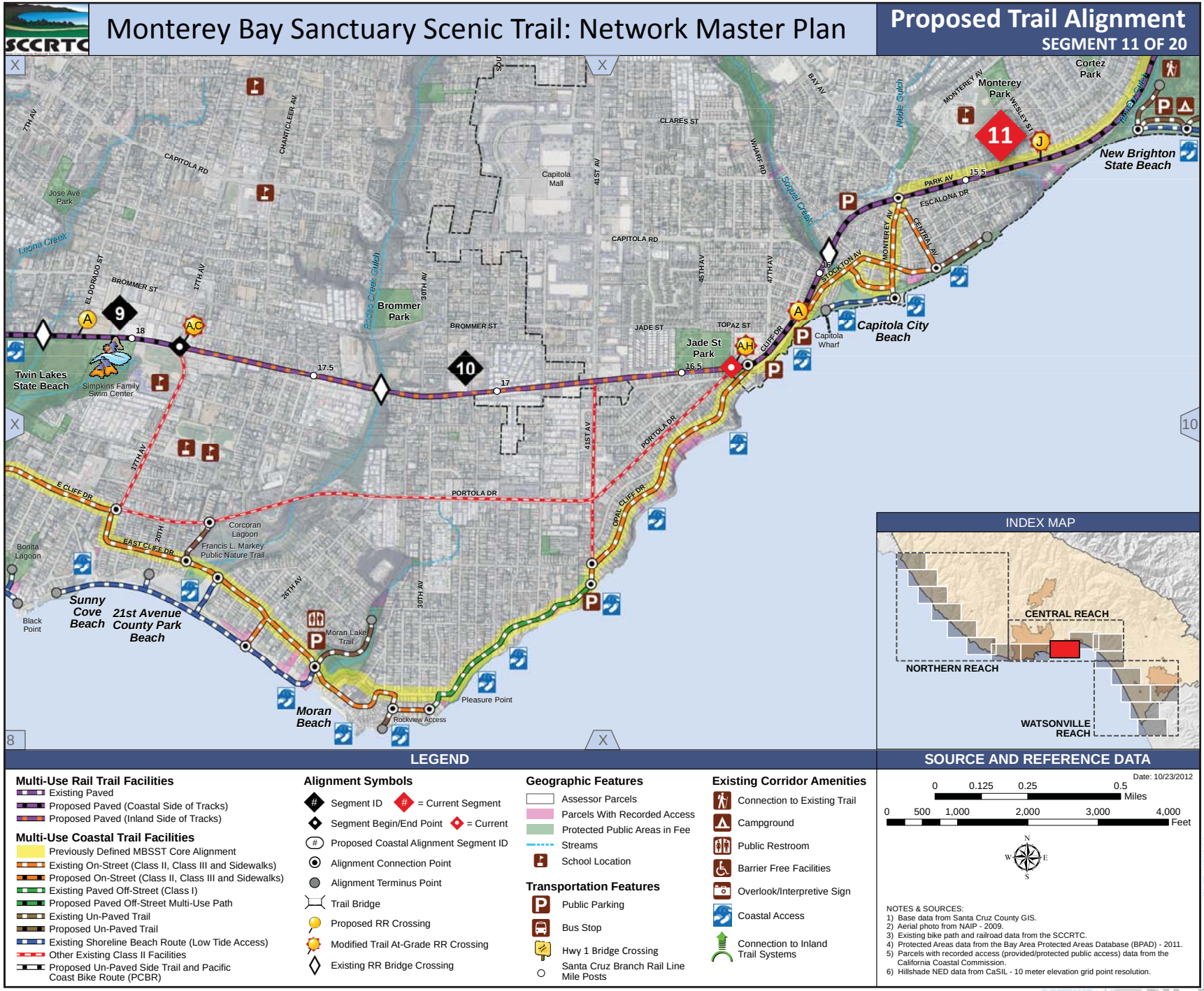
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Figure 4-29

Monterey Bay Sanctuary Scenic Trail: Network Master Plan

Proposed Trail Alignment
SEGMENT 11 OF 20

INDEX MAP

LEGEND

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SOURCE AND REFERENCE DATA

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0 0.125 0.25 0.5 Miles

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N W E S

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Figure 4-30

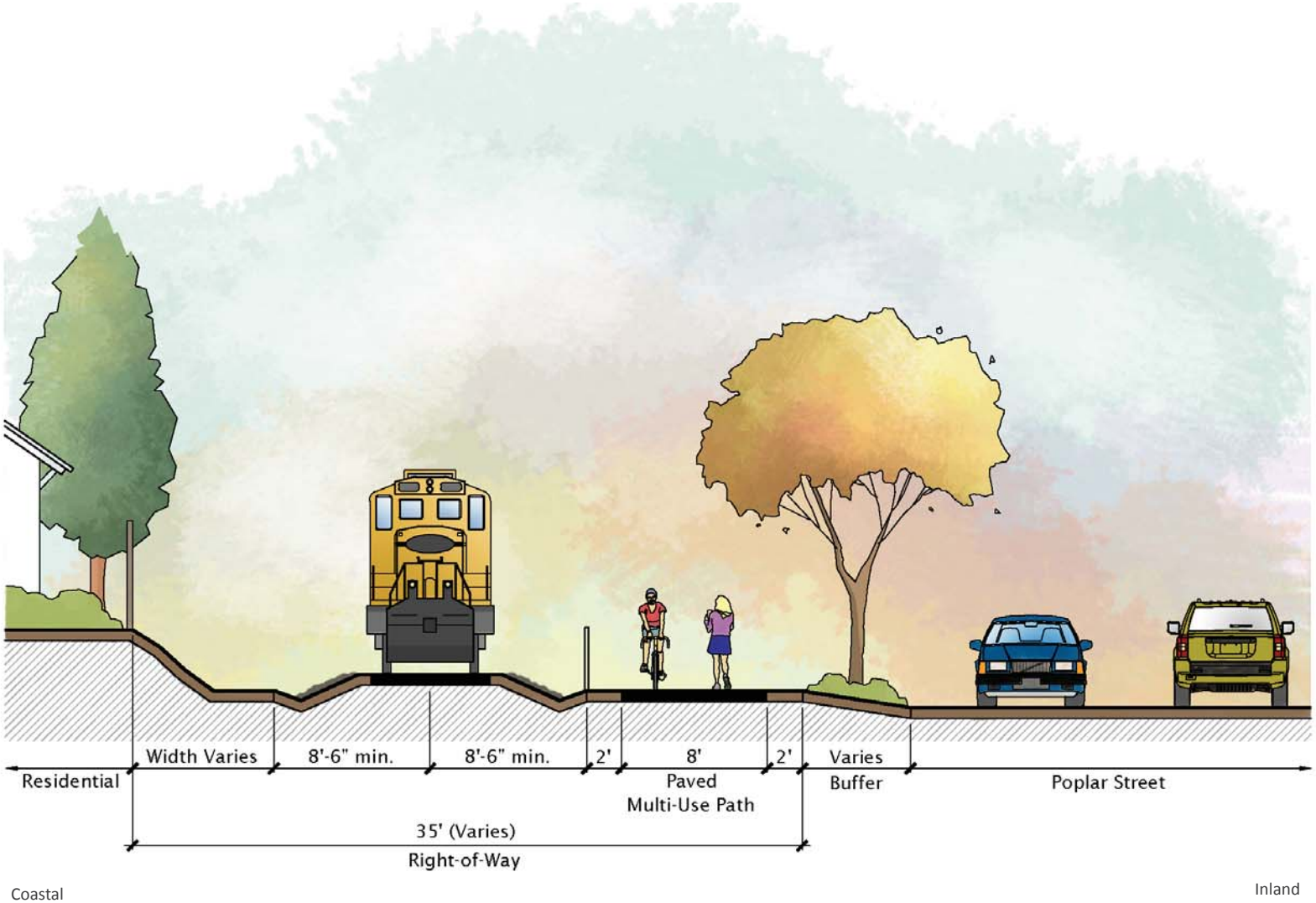
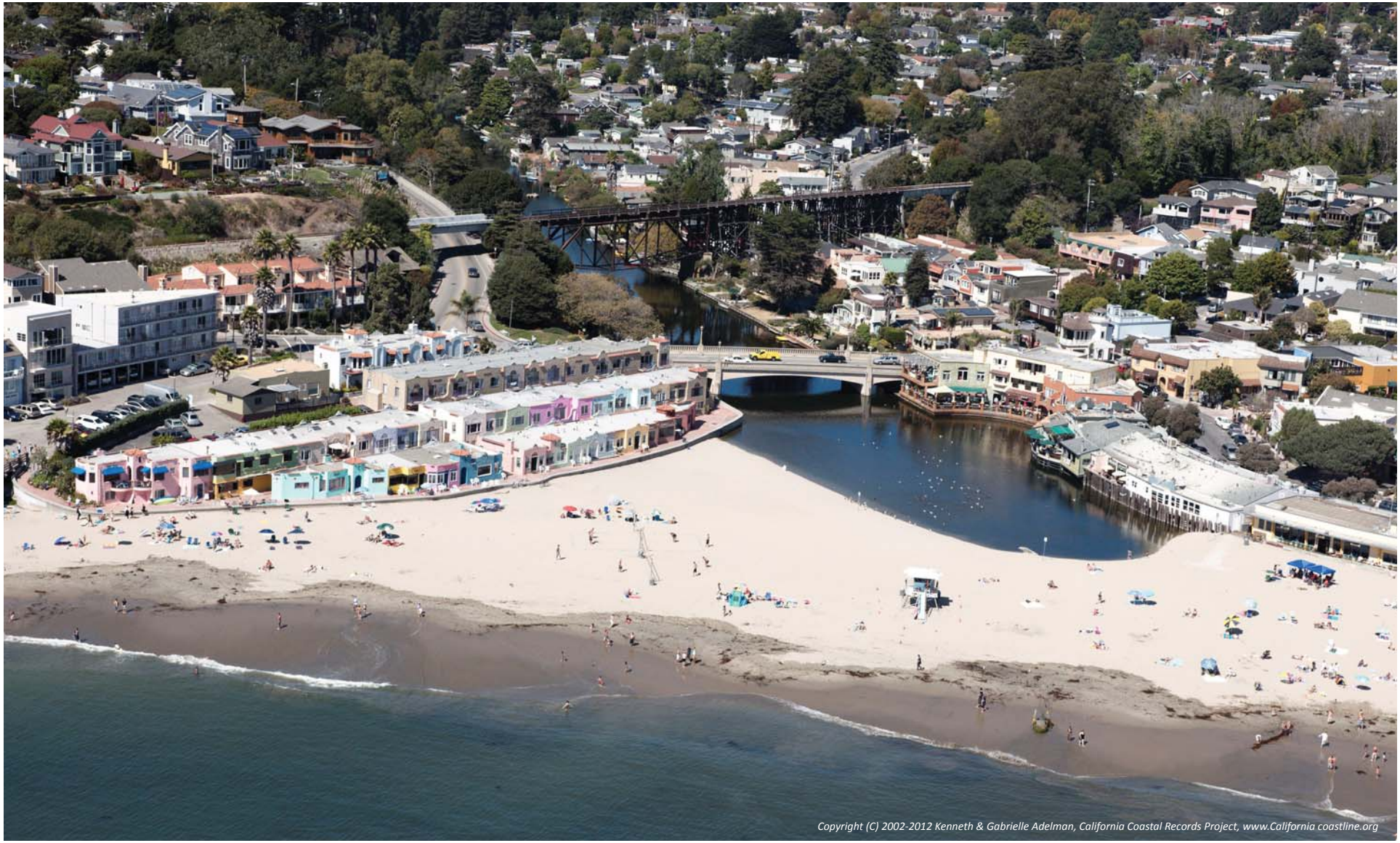


Figure 4-31 Segment 11 Section



Capitola Village with historic railroad trestle

Railroad bridge over Soquel Drive at Aptos Street

4.12 SEGMENT 12 - APTOS VILLAGE

Length: 1.14 Miles (6,030 LF) - State Park Drive to Rio Del Mar Boulevard.

4.12.1 SEGMENT 12 BOUNDARY DETERMINATION

The boundaries for Segment 12 are determined by State Park Drive at the north and Rio Del Mar Boulevard to the south because the rail line tracks divert at these two points to cross over Highway 1 to Aptos Village and then divert back to cross State Highway 1 again, heading south back to the coast. This segment presents unique and difficult challenges and will require multiple agency coordination and supporting infrastructure to implement.

4.12.2 SEGMENT 12 DESCRIPTION

Railroad bridge south of Soquel Drive

This segment of the proposed rail trail has the most challenging bridge crossings in the entire Master Plan area. From the rail crossing of State Park Drive heading down coast, the railroad tracks eventually cross over both north and south lanes of State Highway 1 on concrete and steel bridges. The track line continues several hundred feet on an earth embankment inland of State Highway 1 then over two smaller steel rail bridges, one crossing over Soquel Drive and another bridge over Aptos Creek. The upper Highway 1 steel bridge could be retrofitted to accommodate bike and pedestrian facilities. The crossings over Soquel Drive and Aptos Creek will require new pre-engineered bike and pedestrian bridges to connect to Aptos Village. As the rail line enters Aptos Village, the tracks are constrained on both sides by vehicle parking along Soquel Drive on the coastal side of the tracks and a commercial parking lot on the inland side. The parking area along Soquel Drive would need to be adjusted to accommodate the trail as it parallels the railroad tracks. As the rail corridor leaves Aptos Village heading down coast, the tracks have two additional bridge crossings, one steel truss bridge over Valencia Creek drainage and another narrow concrete bridge crossing back over Highway 1. The rail trail would require new pre-engineered bridges in these three locations. Segment 12 connects with nine (9) activity centers , as identified in Table 3.1.

Aptos Village signage

Segment 12 Proposed Facilities Include:

- 1.14 Miles (6,030 LF) multi-use paved path along the rail right-of-way
- Three (3) pre-engineered bike/ped bridges. Bridge spans vary
- One (1) retrofit Highway 1 concrete bridge for bike and pedestrian facility
- Two (2) at-grade street crossings

TABLE 4.12 Segment 12 - Aptos Village

Segment Length	**1.14 miles (6,030 LF) - Aptos Village**
Rail Trail Portion	1.14 miles (6,030 LF)
Coastal Trail Portion	0.0 miles (0 LF)
Segment Phase	**III**
Segment Cost	**$9,767,577**

Rail Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	6,030	Linear Feet	Varies	$2,264,760
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$156,500
Bridge Structures	4	Each	Varies	$3,600,000
At-Grade Crossings (Rail Tracks or Streets)	8	Each	Varies	$715,000
			Rail Trail Construction Cost Subtotal	**$6,736,260**

Coastal Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Unpaved Trail	0	Linear Feet	Varies	$0
On Street Facilites (Class II, III and Sidewalks)	0	Linear Feet	Varies	$0
			Coastal Trail Construction Cost Subtotal	**$0**

Cost Summary	
Construction Cost Total	$6,736,260
Design and Engineering (15%)	$1,010,439
Design Contingency (20%)	$1,347,252
Environmental Permitting (10%)	$673,626
SEGMENT TOTAL COST	**$9,767,577**

Segment Features	Description	Quantity
State Highway Crossings	Two rail bridge crossings over Highway 1	2
Minor Roadway Crossings	Trout Gulch Road, State Park Drive, Aptos Creek Road	3
Trail At-Grade Railroad Crossings	Trout Gulch Road	1
Rail Bridge Crossing (Wood Trestle)	Soquel Drive, Soquel Drive - Twice at Aptos	2
Rail Bridge Crossing (Concrete)	Two at Highway 1	2
Minor Drainage	Aptos Creek, Valencia Creek	2
Existing Staging Areas/Rest Stops	Aptos Village Park	1
Connection To Other Trails	Nisene Trail	1
Within 1/4 Mile of Public School	Valencia Elementary School	1
Connection to Public Beach	Seacliff State Beach	1
Connection to Commercial Area	Aptos Village	1
Connection to Residential Area	Multiple in Capitola and Aptos	2
Connection to Passive Park	Nisen Marks State Park	1

Railroad bridge over Soquel Drive

Railroad tracks opposite Aptos Station

Monterey Bay Sanctuary Scenic Trail: Network Master Plan

Proposed Trail Alignment
SEGMENT 12 OF 20

LEGEND

Multi-Use Rail Trail Facilities
- Existing Paved
- Proposed Paved (Coastal Side of Tracks)
- Proposed Paved (Inland Side of Tracks)

Multi-Use Coastal Trail Facilities
- Previously Defined MBSST Core Alignment
- Existing On-Street (Class II, Class III and Sidewalks)
- Proposed On-Street (Class II, Class III and Sidewalks)
- Existing Paved Off-Street (Class I)
- Proposed Paved Off-Street Multi-Use Path
- Existing Un-Paved Trail
- Proposed Un-Paved Trail
- Existing Shoreline Beach Route (Low Tide Access)
- Other Existing Class II Facilities
- Proposed Un-Paved Side Trail and Pacific Coast Bike Route (PCBR)

Alignment Symbols
- Segment ID
- = Current Segment
- Segment Begin/End Point
- = Current
- Proposed Coastal Alignment Segment ID
- Alignment Connection Point
- Alignment Terminus Point
- Trail Bridge
- Proposed RR Crossing
- Modified Trail At-Grade RR Crossing
- Existing RR Bridge Crossing

Geographic Features
- Assessor Parcels
- Parcels With Recorded Access
- Protected Public Areas in Fee
- Streams
- School Location

Transportation Features
- Public Parking
- Bus Stop
- Hwy 1 Bridge Crossing
- Santa Cruz Branch Rail Line Mile Posts

Existing Corridor Amenities
- Connection to Existing Trail
- Campground
- Public Restroom
- Barrier Free Facilities
- Overlook/Interpretive Sign
- Coastal Access
- Connection to Inland Trail Systems

SOURCE AND REFERENCE DATA

Date: 10/23/2012

0 0.125 0.25 0.5 Miles

0 500 1,000 2,000 3,000 4,000 Feet

NOTES & SOURCES:
1) Base data from Santa Cruz County GIS.
2) Aerial photo from NAIP - 2009.
3) Existing bike path and railroad data from the SCCRTC.
4) Protected Areas data from the Bay Area Protected Areas Database (BPAD) - 2011.
5) Parcels with recorded access (provided/protected public access) data from the California Coastal Commission.
6) Hillshade NED data from CaSIL - 10 meter elevation grid point resolution.

Figure 4-32

Monterey Bay Sanctuary Scenic Trail: Network Master Plan

Proposed Trail Alignment
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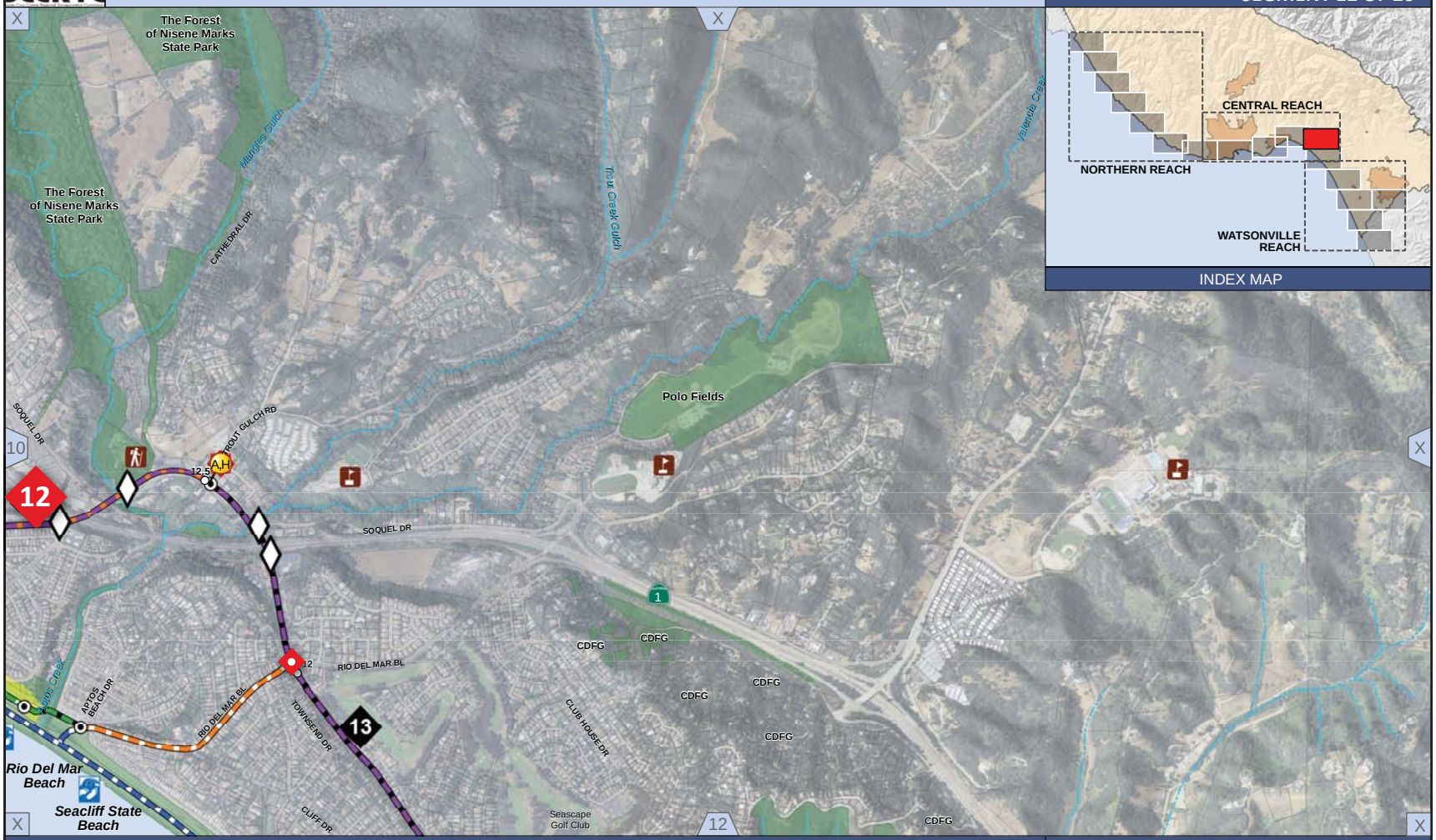

INDEX MAP

LEGEND

Multi-Use Rail Trail Facilities
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- Proposed Paved (Inland Side of Tracks)

Multi-Use Coastal Trail Facilities
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Date: 10/23/2012

0 0.125 0.25 0.5 Miles

0 500 1,000 2,000 3,000 4,000 Feet

N W E S

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Figure 4-33

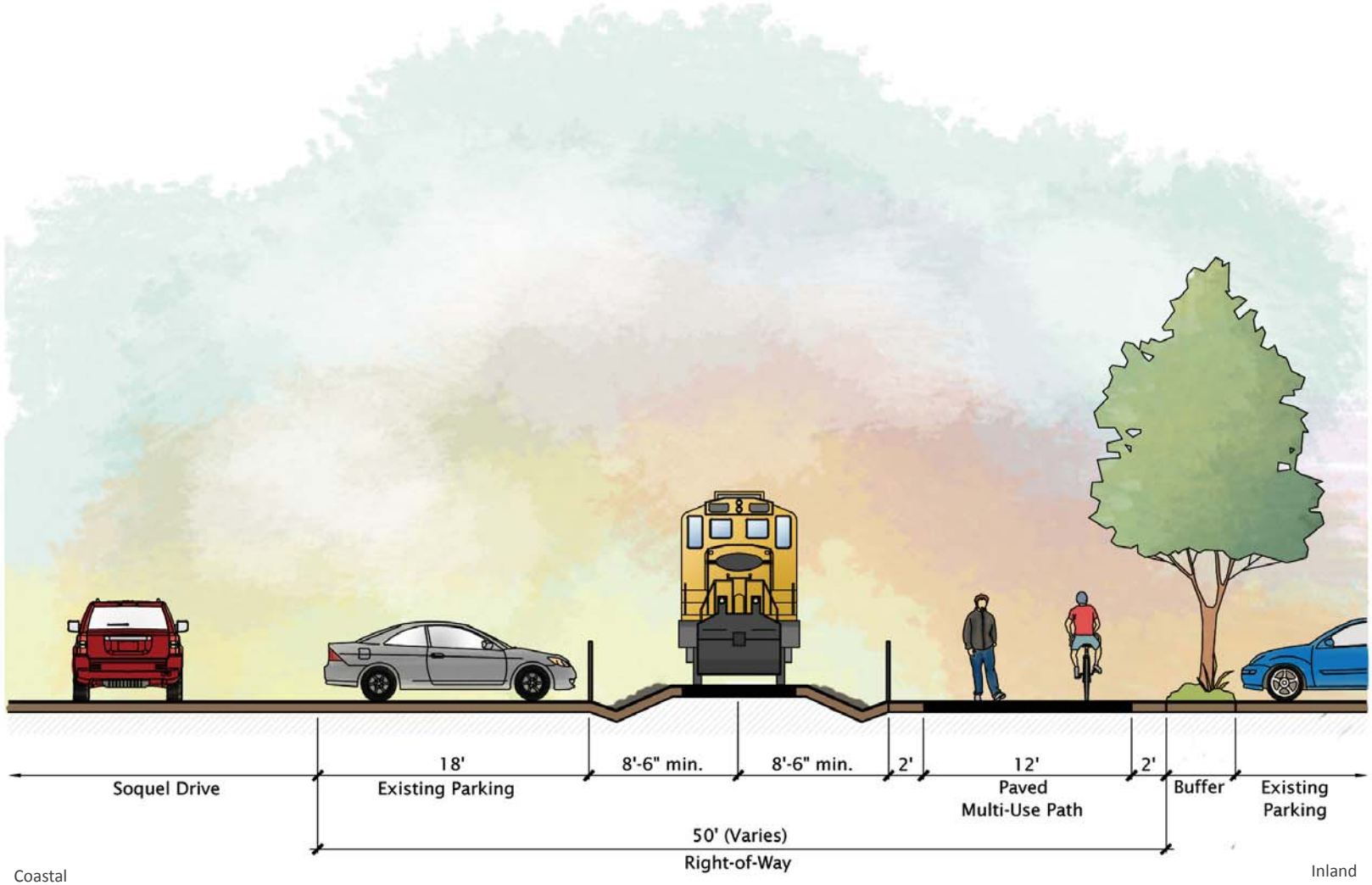

Figure 4-34 Segment 12 Section

Seacliff State Beach

Rio del Mar State Beach is an ideal "spur" connection to the Coastal Rail Trail

Unique architecture abounds along the Rio Del Mar beach frontage

Rio Del Mar State Beach connects to Seacliff State Beach, providing miles of coastal walking opportunities

4.13 SEGMENT 13 - RIO DEL MAR - HIDDEN BEACH

Length: 0.85 Miles (4,510 LF) - Rio Del Mar Boulevard to Cliff Drive / Hidden Beach

4.13.1 SEGMENT 13 BOUNDARY DETERMINATION

The north boundary for Segment 13 is determined by the grade-separated Rio Del Mar Boulevard bridge crossing of the rail corridor where the proposed rail trail would connect to the existing on-street Class III bike route. The north end of Segment 13 is a good start or stop point for the proposed trail while the complicated series of bridges connecting Aptos Village in Segment 12 are designed and implemented. The south end of the segment ends at the Hidden Beach rail trestle crossing.

4.13.2 SEGMENT 13 DESCRIPTION

This segment will provide pedestrian and bike access down coast to Hidden Beach from Rio Del Mar Boulevard. The access at Rio Del Mar Boulevard will require a ramp down to the existing below-grade rail crossing of Rio Del Mar Boulevard. The proposed trail would ramp down under the coastal side of Rio Del Mar Bridge and continue down coast along the rail corridor on the coastal side of the tracks. This section of the rail line is in a trapezoidal corridor with steep sides flanked by residential lots on both sides. The trail segment through this stretch may need small retaining walls on the outside edge of the uphill slopes to accommodate the width of the trail. The close proximity to the residential lots may require privacy fences on the rail right-of-way boundary. The segment ends at the Hidden Beach rail trestle. The crossing will require a new pre-engineered bike/pedestrian bridge with the south abutment landing adjacent to the rail trestle abutment. This landing point will allow both access under the existing rail trestle to continue the trail along the inland side of the tracks as it heads down coast and provide access to the existing Hidden Beach parking lot below the coastal side of the existing rail trestle on Cliff Drive. The Hidden Beach parking lot and existing beach access trail can also serve as a trailhead for the rail trail. This segment connects with 7 activity centers, as identified in Table 3.1.

Segment 13 Proposed Improvements:

- 0.85 Miles (4,510 LF) multi-use paved path along the coastal side rail right-of-way
- One (1) undercrossing connection to Rio Del Mar Boulevard
- One (1) pre-engineered bike/pedestrian bridge, 200-ft span

TABLE 4.13 Segment 13 - Rio Del Mar-Hidden Beach

Segment Length	**0.85 miles (4,510 LF) - Rio Del Mar-Hidden Beach**			
Rail Trail Portion	0.85 miles (4,510 LF)			
Coastal Trail Portion	0.0 miles (0 LF)			
Segment Phase	**III**			
Segment Cost	**$3,108,249**			
Rail Trail Components	**Quantitiy**	**Unit**	**Unit Price**	**Cost**
Paved Multi-Use Path	4,510	Linear Feet	Varies	$973,620
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$80,000
Bridge Structures	1	Each	$1,000,000	$1,000,000
Staging Area Access	1	Each	$30,000	$30,000
At-Grade Crossings (Rail Tracks or Streets)	1	Each	Varies	$60,000
			Rail Trail Construction Cost Subtotal	**$2,143,620**
Coastal Trail Components	**Quantitiy**	**Unit**	**Unit Price**	**Cost**
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Unpaved Trail	0	Linear Feet	Varies	$0
On Street Facilites (Class II, III and Sidewalks)	0	Linear Feet	Varies	$0
			Coastal Trail Construction Cost Subtotal	**$0**
Cost Summary				
Construction Cost Total				$2,143,620
Design and Engineering (15%)				$321,543
Design Contingency (20%)				$428,724
Environmental Permitting (10%)				$214,362
			SEGMENT COST TOTAL	**$3,108,249**

Segment Features	Description	Quantity
Rail Bridge Crossing (Wood Trestle)	Hidden Beach Park	1
Existing Staging Areas/Rest Stops	Hidden Beach	1
Connection To Other Trails	California Coastal Trail	1
Connection to Public Beach	Hidden Beach	1
Connection to Commercial Area	Multiple	5
Connection to Residential Area	Hidden Beach	1
Connection to Passive Park	Private Golf Course	1

Trail access to Hidden Beach Park from Dry Creek Road

Train tracks and trestle near Hidden Beach Park

Rio del Mar pedestrian path

Monterey Bay Sanctuary Scenic Trail: Network Master Plan

Proposed Trail Alignment
SEGMENT 13 OF 20

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LEGEND

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- Existing Paved
- Proposed Paved (Coastal Side of Tracks)
- Proposed Paved (Inland Side of Tracks)

Multi-Use Coastal Trail Facilities
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Existing Corridor Amenities
- Connection to Existing Trail
- Campground
- Public Restroom
- Barrier Free Facilities
- Overlook/Interpretive Sign
- Coastal Access
- Connection to Inland Trail Systems

SOURCE AND REFERENCE DATA

Date: 10/23/2012

0 0.125 0.25 0.5 Miles

0 500 1,000 2,000 3,000 4,000 Feet

NOTES & SOURCES:
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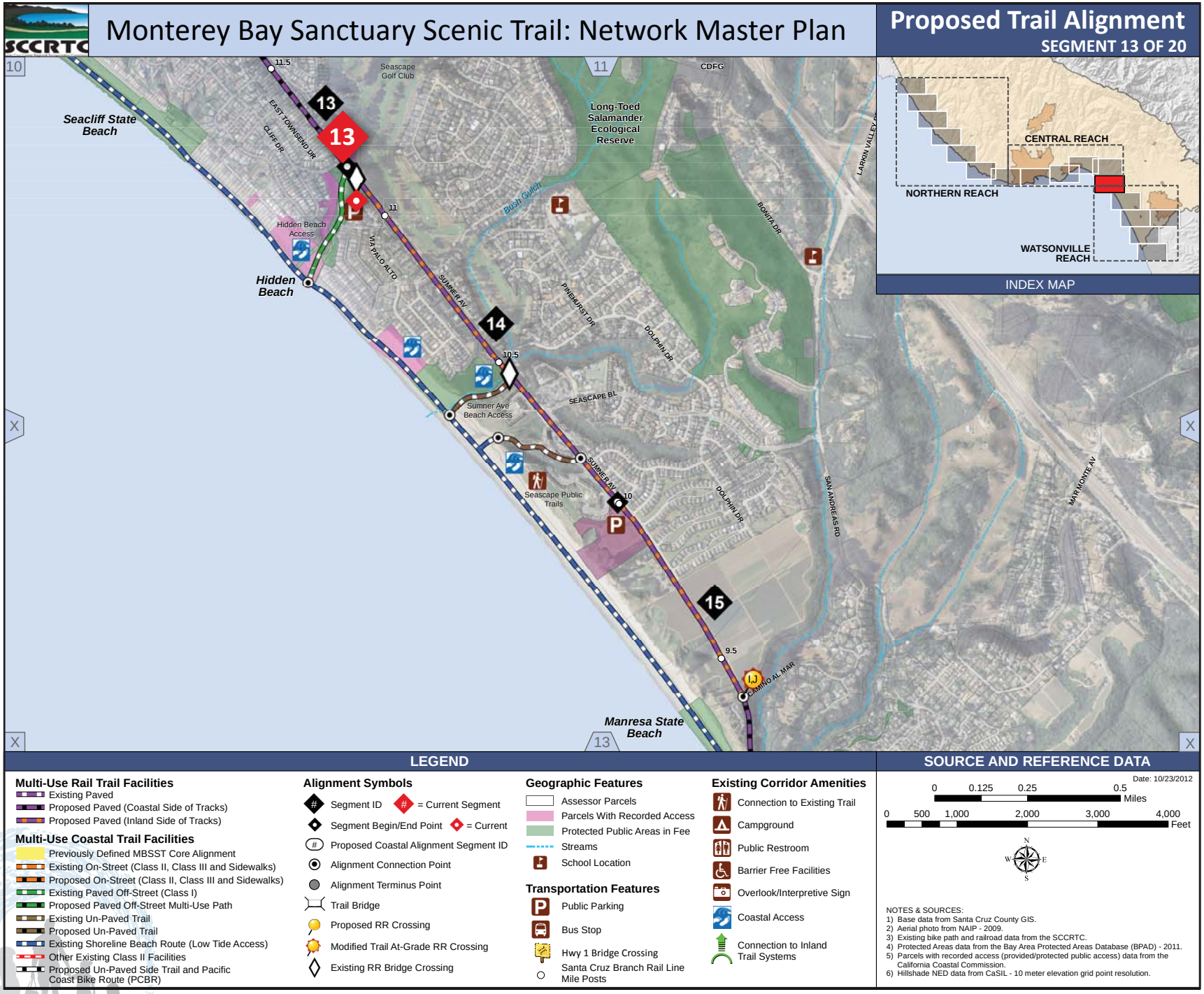
Figure 4-35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Hidden Beach
Bush Gulch
Summer Ave Beach Access
Seascape Public Trails
Manresa State Beach
EAST TOWNSEND DR
CLIFF DR
VIA PALO ALTO
SUMMER AV
PINEHURST DR
DOLPHIN DR
SEASCAPE BL
BONITA DR
LARKIN VALLEY DR
SAN ANDREAS RD
MAR MONTE AV
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Figure 4-36

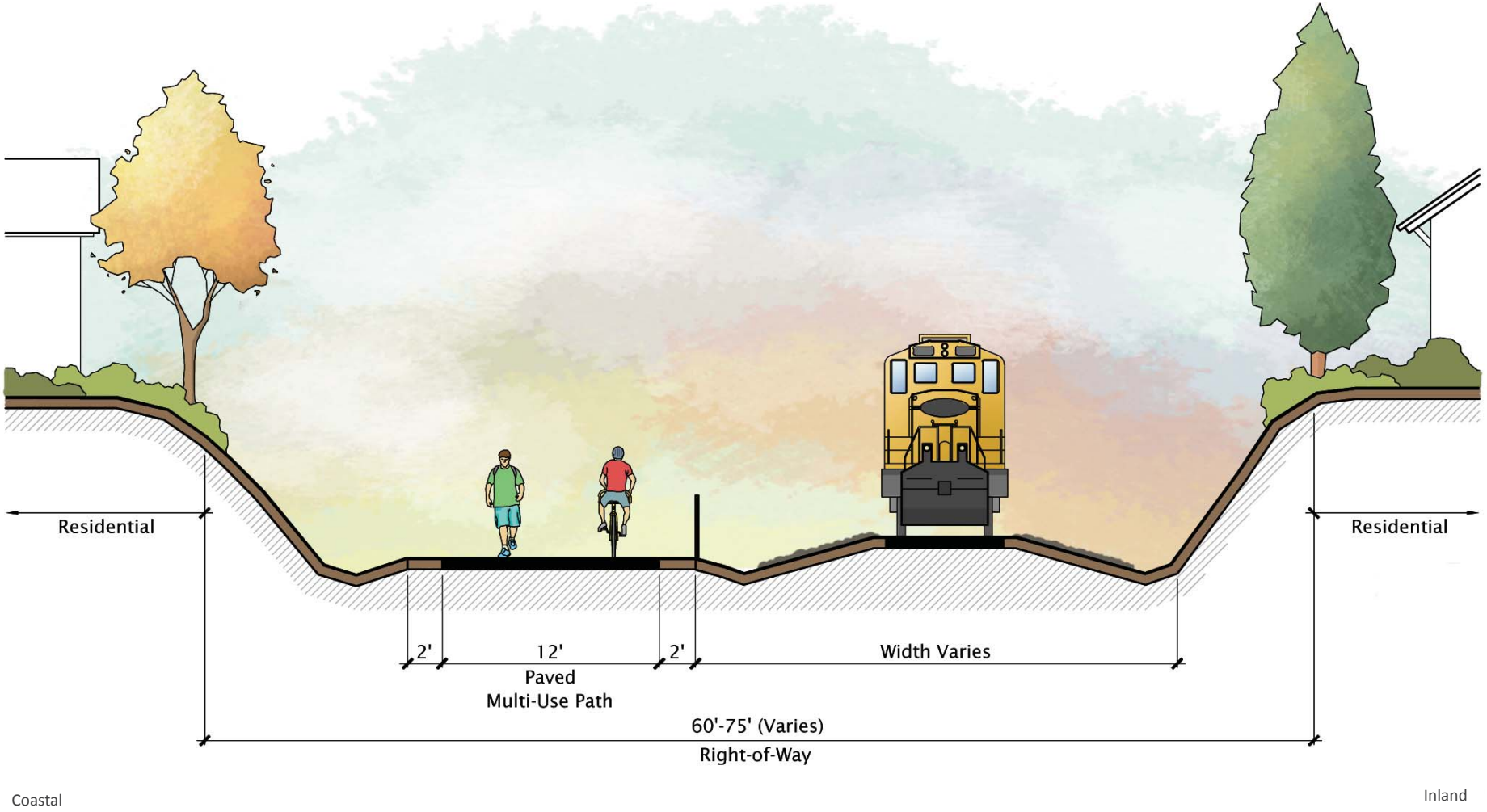
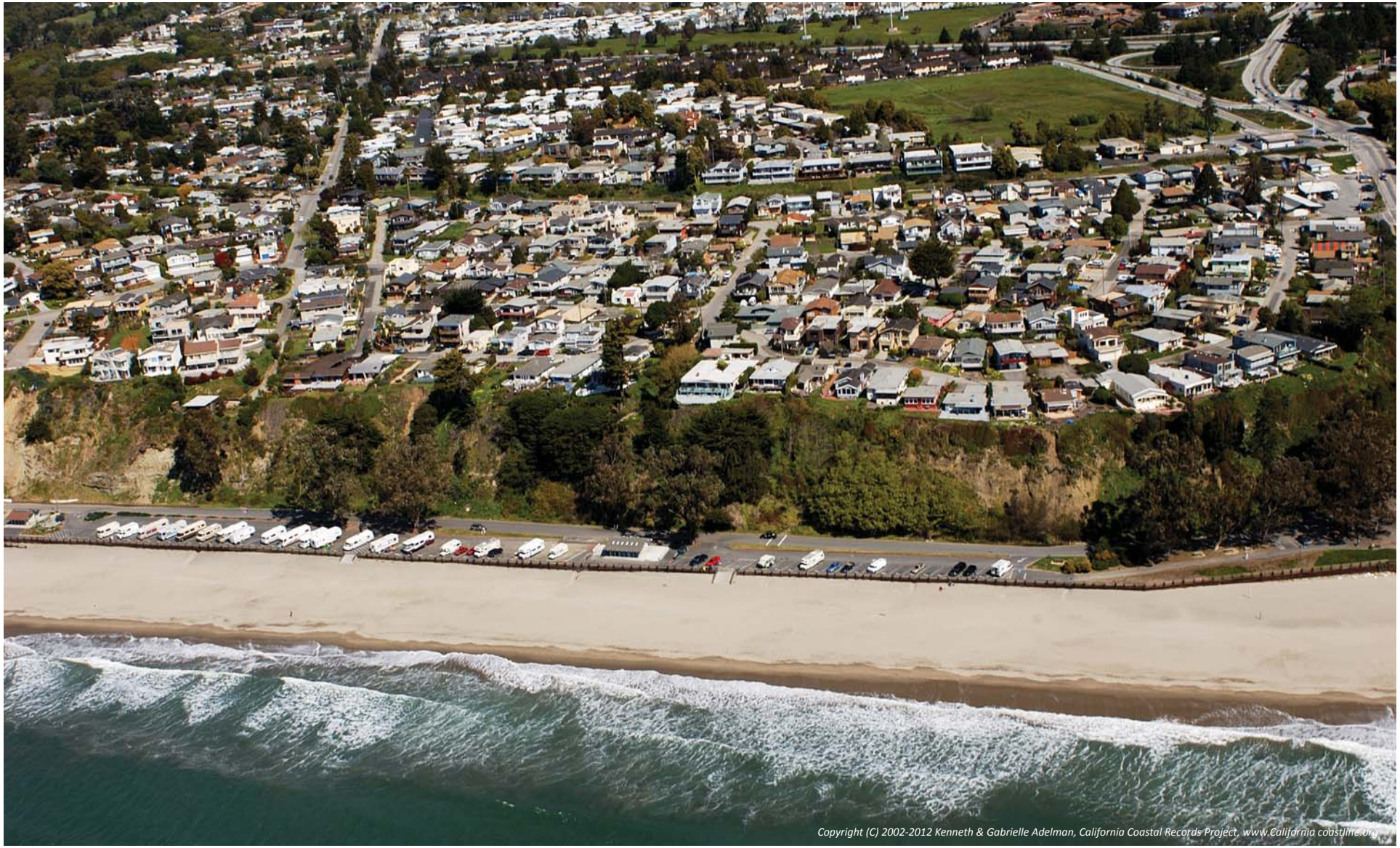


Figure 4-37 Segment 13 Section



Seacliff State Beach

Railroad crossing at Seascape Resort

Railroad crossing at southern end of Seascape Resort

Seascape Resort railroad crossing looking north

4.14 SEGMENT 14 - SEASCAPE

Length: 1.17 Miles (6,160 LF) - Cliff Drive/Hidden Beach to Seascape Park

4.14.1 SEGMENT 14 BOUNDARY DETERMINATION

Segment 14 begins at the existing Hidden Beach parking lot off Cliff Drive on the coastal side of the train trestle abutment. This segment continues along the inland side of the rail tracks to the existing parking lot at Seascape Park.

4.14.2 SEGMENT 14 DESCRIPTION

The Hidden Beach parking lot provides a good access point for this segment of the proposed rail trail. A crossing at the existing trail trestle would be needed to continue the trail down coast from the Rio Del Mar segment. The proposed trail would use the existing trail trestle as a grade-separated crossing on the south abutment and cross under the tracks to the inland side of the rail corridor. Further down coast small retaining walls on the inland side of the trail tread may be required to secure the uphill slope along the corridor. The proposed rail trail will continue on the inland side of the tracks next to Sumner Road with an at-grade street crossing of Clubhouse Drive. The proposed trail continues down coast between Sumner Road and the rail tracks to the next trestle crossing near Sumner Road and Dolphin Drive. This proposed trail crossing could avoid a bridge crossing if the trail follows the grade toward the coastal edge of Sumner Road, connecting back to the rail right-of-way near the south bridge abutment. This alignment option also connects the proposed rail trail with an existing public coastal trailhead on Sumner Road. The proposed trail alignment continues down coast between Sumner Road and the inland side rail right-of-way to an at-grade signaled street crossing of Sumner Road and Seascape Boulevard. This crossing will require moving electrical control boxes and other utilities to accommodate the proposed trail tread. Segment 14 ends on the inland side of the rail tracks at an existing non-signalized, at-grade rail crossing just inland of the Seascape Park public parking lot.
This location also provides the proposed rail trail with existing trailhead parking, staging area access, and a good terminus for segmented implementation phasing. Segment 14 connects with ten (10) activity centers, as identified in Table 3.1.

Segment 14 Proposed Improvements:

- 1.17 Miles (6,160 LF) multi-use paved path along the inland rail right-of-way
- Two (2) at-grade road crossings

TABLE 4.14 Segment 14 - Seascape

Segment Length	**1.17 miles (6,160 LF) - Seascape**
Rail Trail Portion	1.17 miles (6,160 LF)
Coastal Trail Portion	0.0 miles (0 LF)
Segment Phase	**III**
Segment Cost	**$2,127,904**

Rail Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	6,160	Linear Feet	Varies	$1,192,320
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$215,200
Bridge Structures	0	Each	Varies	$0
At-Grade Crossings (Rail Tracks or Streets)	1	Each	Varies	$60,000
			Rail Trail Construction Cost Subtotal	**$1,467,520**

Coastal Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Unpaved Trail	0	Linear Feet	Varies	$0
On Street Facilites (Class II, III and Sidewalks)	0	Linear Feet	Varies	$0
			Coastal Trail Construction Cost Subtotal	**$0**

Cost Summary	
Construction Cost Total	$1,467,520
Design and Engineering (15%)	$220,128
Design Contingency (20%)	$293,504
Environmental Permitting (10%)	$146,752
SEGMENT TOTAL COST	**$2,127,904**

Segment Features	Description	Quantity
Minor Roadway Crossings	Clubhouse Drive, Seascape Boulevard	2
Rail Bridge Crossing (Wood Trestle)	South Hidden Beach Railroad Mile Post 10.5	1
Minor Drainage	Bush Gulch Railroad Mile Post 10.5	1
Existing Staging Areas/Rest Stops	Hidden Beach, Seascape Park	2
Connection To Other Trails	California Coastal Trail, Pacific Coast Bike Route, Seascape Public Tra	3
Within 1/4 Mile of Public School	Rio Del Mar Elementary School	1
Connection to Public Beach	Hidden Beach, Seascape Park	2
Connection to Residential Area	Multiple	4
Connection to Passive Park	Seascape Park	1

Seascape Resort rail crossing and drainage

Southern access to Seascape Resort looking northeast

Narrow rail corridor will require grading of slopes to accommodate a multi-use path

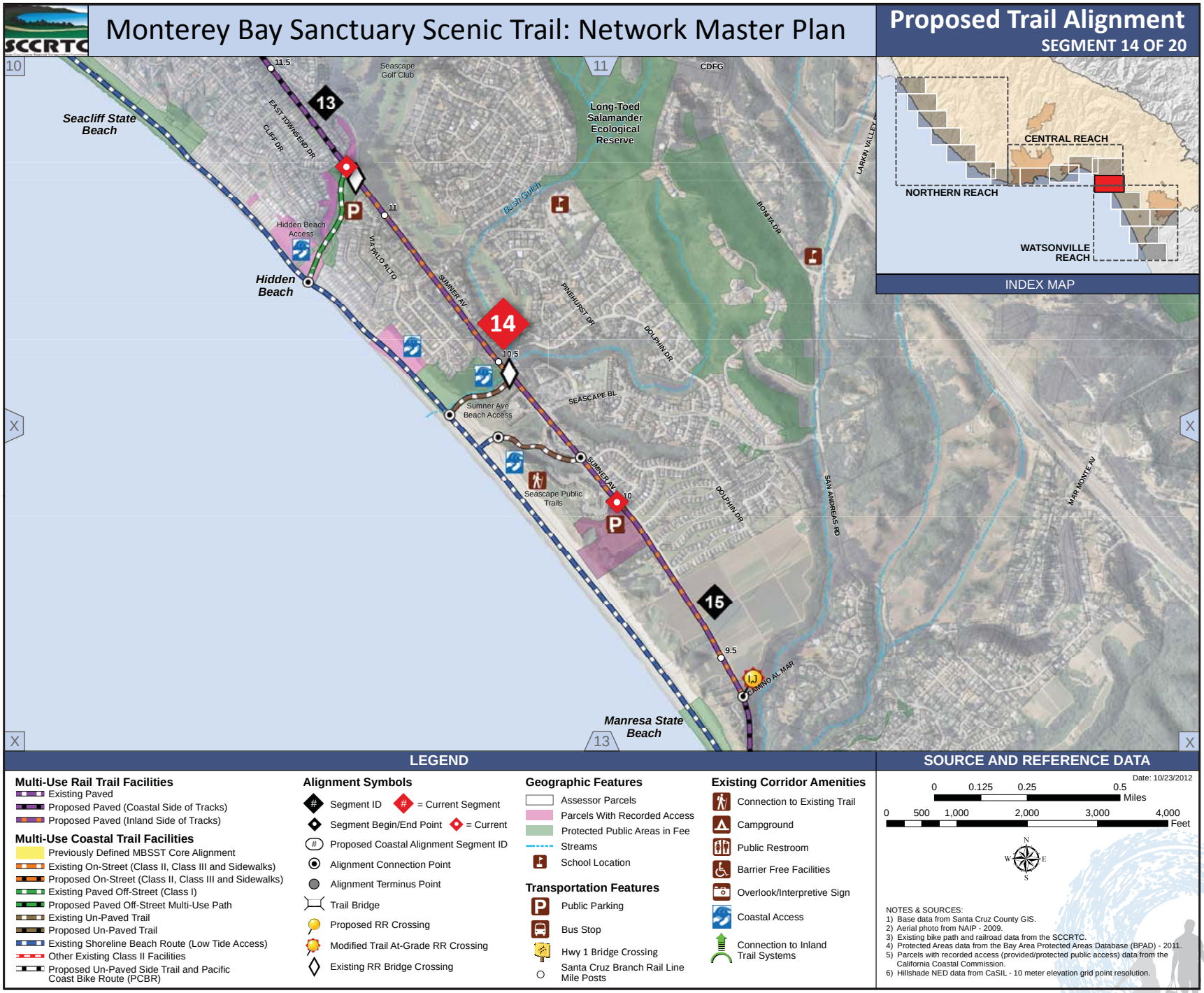

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Figure 4-38

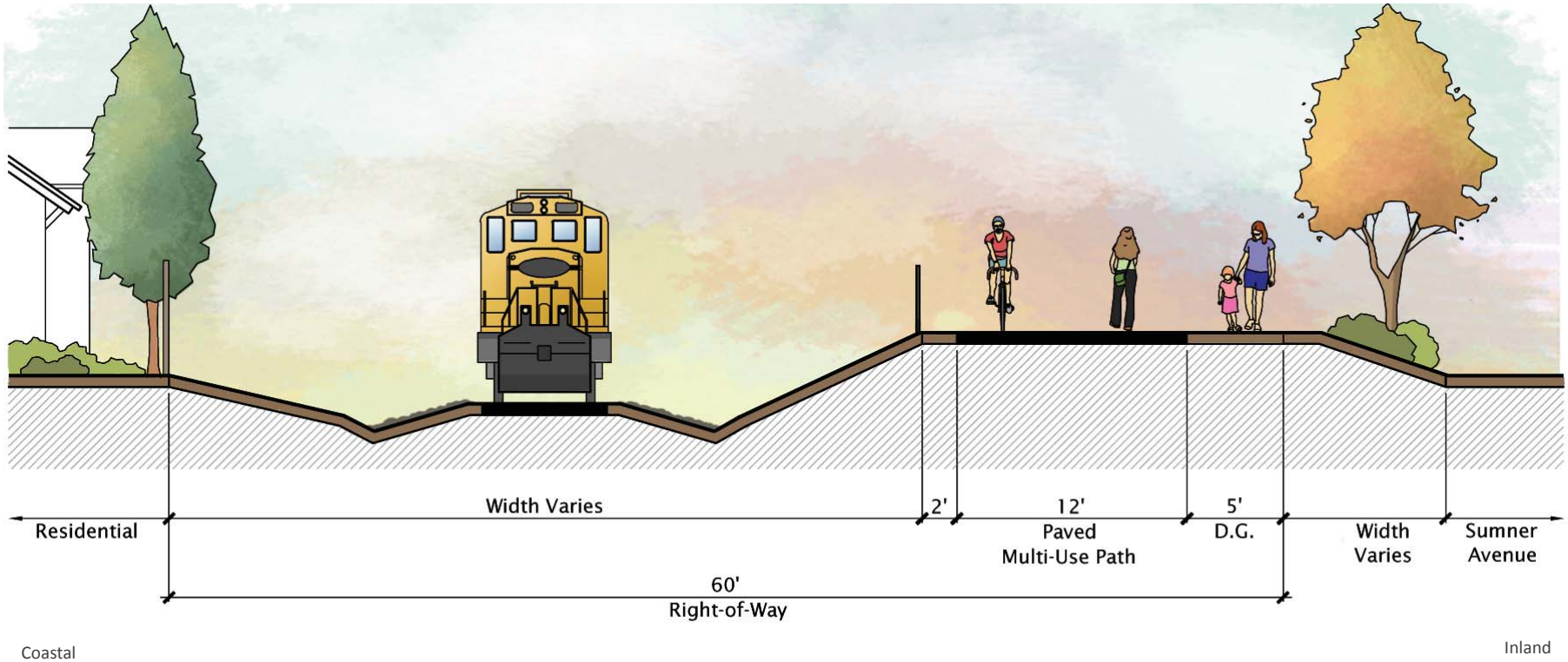


Figure 4-39 Segment 14 Section

Homes located in close proximity to railroad tracks

San Andreas Road rail bridge and trestle

Railroad tracks looking south

4.15 SEGMENT 15 - MANRESA STATE BEACH

Length: 1.37 Miles (7,240 LF) - Seascape Park to Manresa State Beach Railroad Bridge at San Andreas Road

4.15.1 SEGMENT 15 BOUNDARY DETERMINATION

Segment 15 is relatively short, beginning at Seascape Park at the northern boundary and connecting down coast to the Manresa State Beach Railroad Bridge at San Andreas Road. This segment poses engineering, grading and grade-separated crossing challenges. Although short, this segment provides good multi-use connectivity with safer, more accessible trail options linking the California Coastal Trail.

4.15.2 SEGMENT 15 DESCRIPTION

Segment 15 begins at Seascape Park, adjacent to the coastal side of Sumner Road, and continues down coast along the inland side of the rail right-of-way. Sumner Road ends just down coast of Seascape and the proposed trail alignment continues on the inland side rail right-of-way adjacent to a short stretch of agricultural land. The alignment eventually crosses the existing at-grade street crossing at Camino Al Mar, just north of railroad mile marker number 9. The proposed trail continues down coast along the inland side of the tracks where it reaches a significant rail trestle crossing at La Selva Beach. This crossing connects the proposed trail to an existing public parking lot with coastal access down to La Selva Beach which is situated below the south rail trestle abutment.

The proposed trail crossing at the La Selva railroad bridge may require the following options for the drainage crossing:

1) An independent bike/pedestrian bridge structure on the inland side of the existing rail trestle with a landing near the south bridge abutment, crossing over the existing trail to the beach and landing to the inland side of the existing public parking lot.

2) A hybrid retrofit of the existing trestle superstructure with a bike/pedestrian crossing which utilizes the existing rail bridge for some of the lateral support of the new retrofit but not completely supporting the retrofit with the new rail bridge structure

3) Include a bike/pedestrian crossing as part of a future rail trestle replacement.

4) Use existing on-street facilities until a new rail trestle is designed and implemented.

The proposed rail trail alignment continues down coast from the La Selva Beach crossing along the inland side of the rail corridor. The proposed trail will cross the rail tracks at an existing at-grade vehicular rail crossing to continue along the coastal side of the track. This existing at-grade vehicle crossing is down coast of railroad mile marker number 9 and does not currently have signal flashers or warning devices. Once the proposed trail is on the coastal side of the tracks, the physical constraints vary from steep slopes, private roadways, adjacent private property lines, narrow railroad right-of-way, and another rail bridge crossing over San Andreas Road/Pacific Coast Bike Route. This segment connects with seven (7) activity centers, as identified in Table 3.1.

Segment 15 Proposed Improvements:

- 1.37 Miles (7,240 LF) multi-use paved path along the inland rail right-of-way
- Two (2) at-grade road crossings
- Two (2) pre-engineered rail bridge crossings (one 200’ span at Las Selva, and a 100’ span at San Andreas Road

TABLE 4.15 Segment 15 - Manresa State Beach

Segment Length	**1.37 miles (7,240 LF) - Manresa State Beach**
Rail Trail Portion	1.37 miles (7,240 LF)
Coastal Trail Portion	0.0 miles (0 LF)
Segment Phase	**III**
Segment Cost	**$4,592,440**

Rail Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	7,240	Linear Feet	Varies	$1,425,600
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$211,600
Bridge Structures	2	Each	Varies	$1,450,000
At-Grade Crossings (Rail Tracks or Streets)	5	Each	Varies	$80,000
			Rail Trail Construction Cost Subtotal	**$3,167,200**

Coastal Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Unpaved Trail	0	Linear Feet	Varies	$0
On Street Facilites (Class II, III and Sidewalks)	0	Linear Feet	Varies	$0
			Coastal Trail Construction Cost Subtotal	**$0**

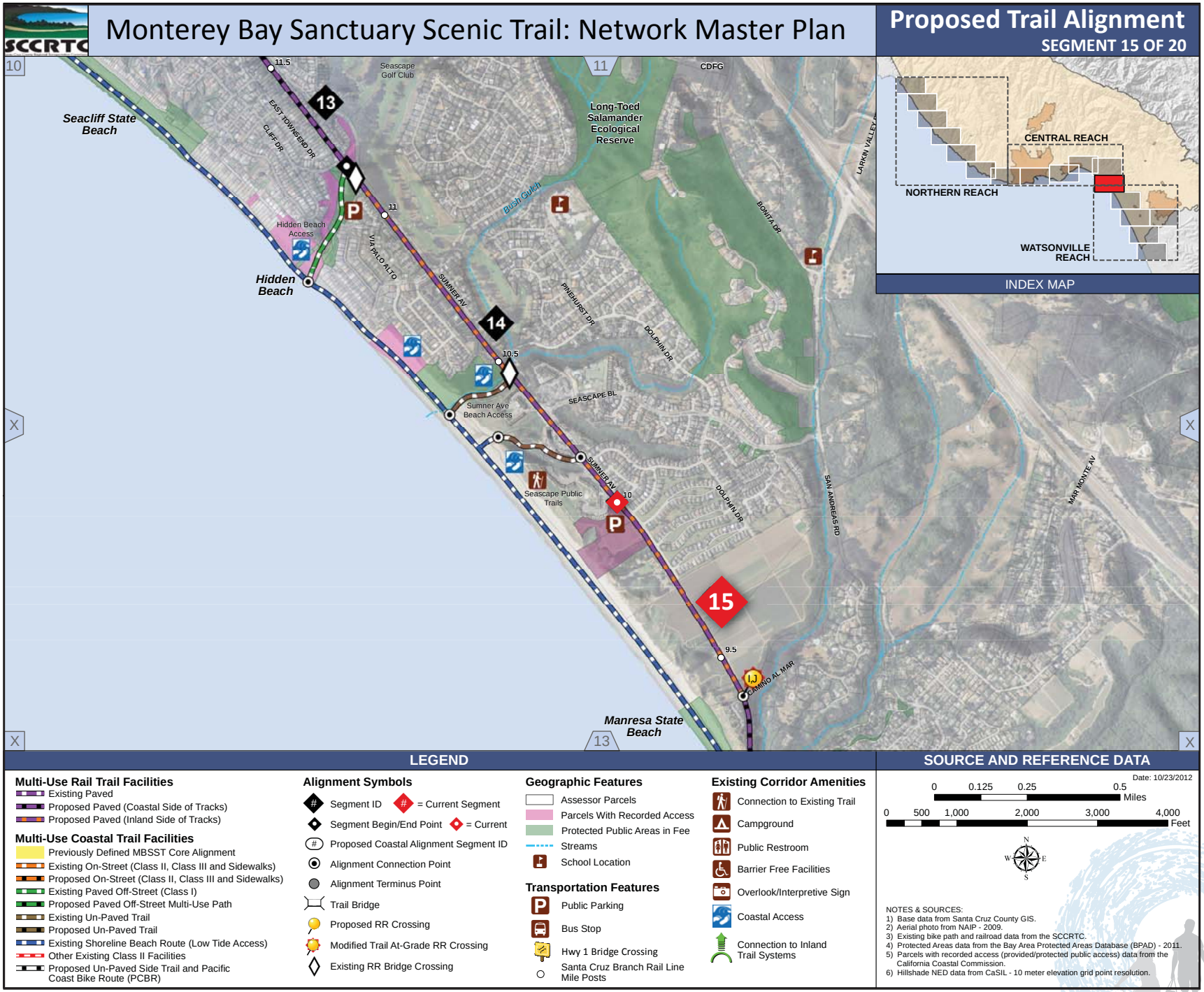
Cost Summary	
Construction Cost Total	$3,167,200
Design and Engineering (15%)	$475,080
Design Contingency (20%)	$633,440
Environmental Permitting (10%)	$316,720
SEGMENT TOTAL COST	**$4,592,440**

Segment Features	Description	Quantity
Major Roadway Crossings	Grade separated - San Andreas Road	1
Minor Roadway Crossings	Camino Al Mar	1
Rail Bridge Crossing (TimberTrestle)	Manresa State Beach crossing	1
Rail Bridge Crossing (Concrete)	San Andreas Road crossing	1
Minor Drainage	Manresa State Beach	1
Existing Staging Areas/Rest Stops	Manresa State Beach, Seascape Park	2
Connection To Other Trails	California Coastal Trail, Pacific Coast Bike Route	2
Connection to Public Beach	Manresa State Beach	1
Connection to Residential Area	Rural residential	1

Views of scenic open space

Pacific Coast Bike route located parallel to the railroad tracks

Campground provides a unique destination opportunity to bike and camp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Long-Toed Salamander Ecological Reserve
CDFG
Hidden Beach Access
Sumner Ave Beach Access
Seascape Public Trails
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CLIFF DR
VIA PALO ALTO
SUMNER AV
PINEHURST DR
DOLPHIN DR
SEASCAPE BL
BONITA DR
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Other Existing Class II Facilities
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Segment Begin/End Point
= Current
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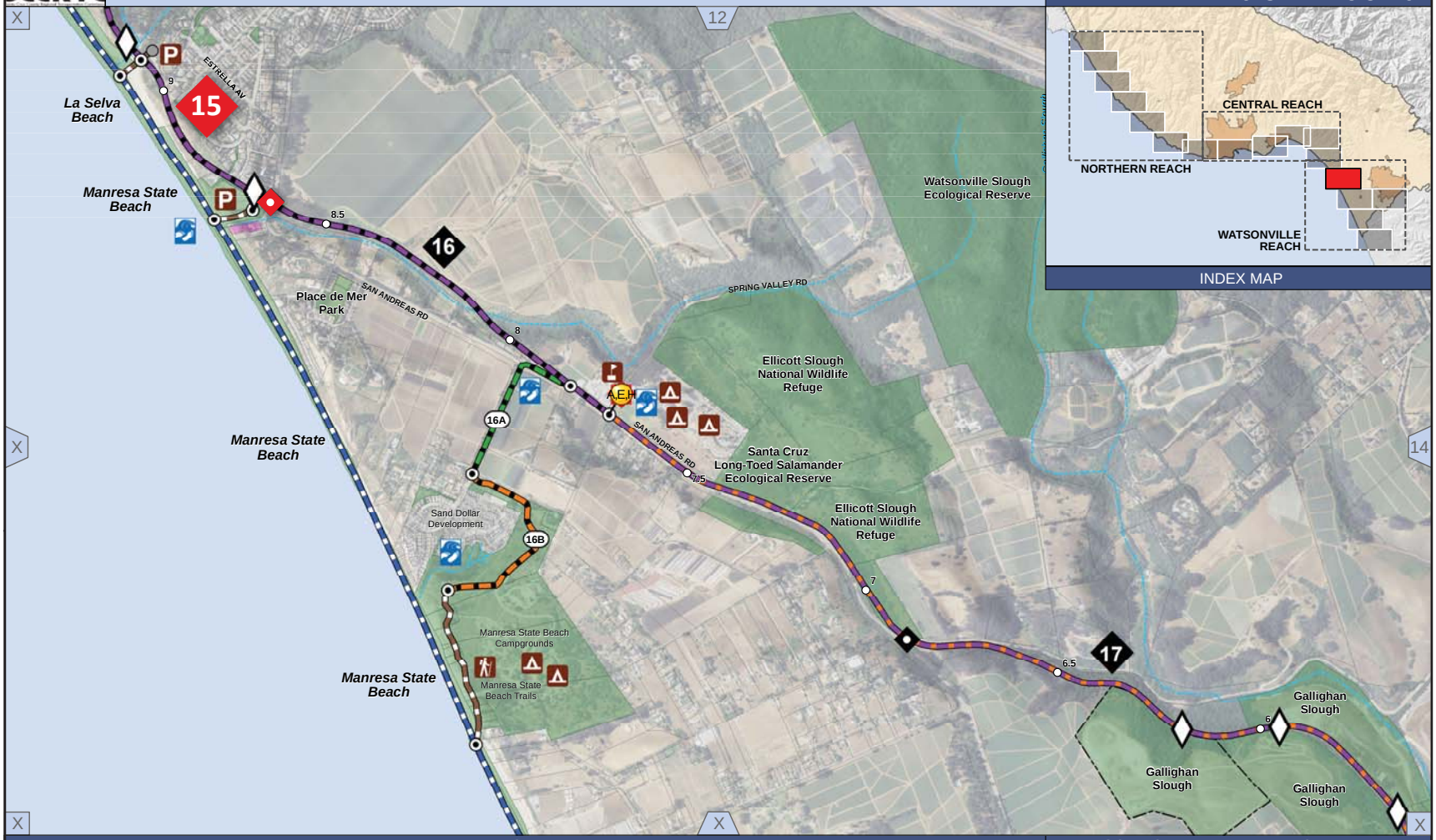
Public Restroom
Barrier Free Facilities
Overlook/Interpretive Sign
Coastal Access
Connection to Inland Trail Systems
SOURCE AND REFERENCE DATA
Date: 10/23/2012
0 0.125 0.25 0.5 Miles
0 500 1,000 2,000 3,000 4,000 Feet
N W E S
NOTES & SOURCES:
1) Base data from Santa Cruz County GIS.
2) Aerial photo from NAIP - 2009.
3) Existing bike path and railroad data from the SCCRTC.
4) Protected Areas data from the Bay Area Protected Areas Database (BPAD) - 2011.
5) Parcels with recorded access (provided/protected public access) data from the California Coastal Commission.
6) Hillshade NED data from CaSIL - 10 meter elevation grid point resolution.

Figure 4-40

Monterey Bay Sanctuary Scenic Trail: Network Master Plan

Proposed Trail Alignment
SEGMENT 15 OF 20

INDEX MAP



LEGEND

Multi-Use Rail Trail Facilities
- Existing Paved
- Proposed Paved (Coastal Side of Tracks)
- Proposed Paved (Inland Side of Tracks)

Multi-Use Coastal Trail Facilities
- Previously Defined MBSST Core Alignment
- Existing On-Street (Class II, Class III and Sidewalks)
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- Existing Shoreline Beach Route (Low Tide Access)
- Other Existing Class II Facilities
- Proposed Un-Paved Side Trail and Pacific Coast Bike Route (PCBR)

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- Segment Begin/End Point / = Current
- Proposed Coastal Alignment Segment ID
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Existing Corridor Amenities
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- Campground
- Public Restroom
- Barrier Free Facilities
- Overlook/Interpretive Sign
- Coastal Access
- Connection to Inland Trail Systems

SOURCE AND REFERENCE DATA

Date: 10/23/2012

0 0.125 0.25 0.5 Miles

0 500 1,000 2,000 3,000 4,000 Feet

N W E S

NOTES & SOURCES:
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Figure 4-41

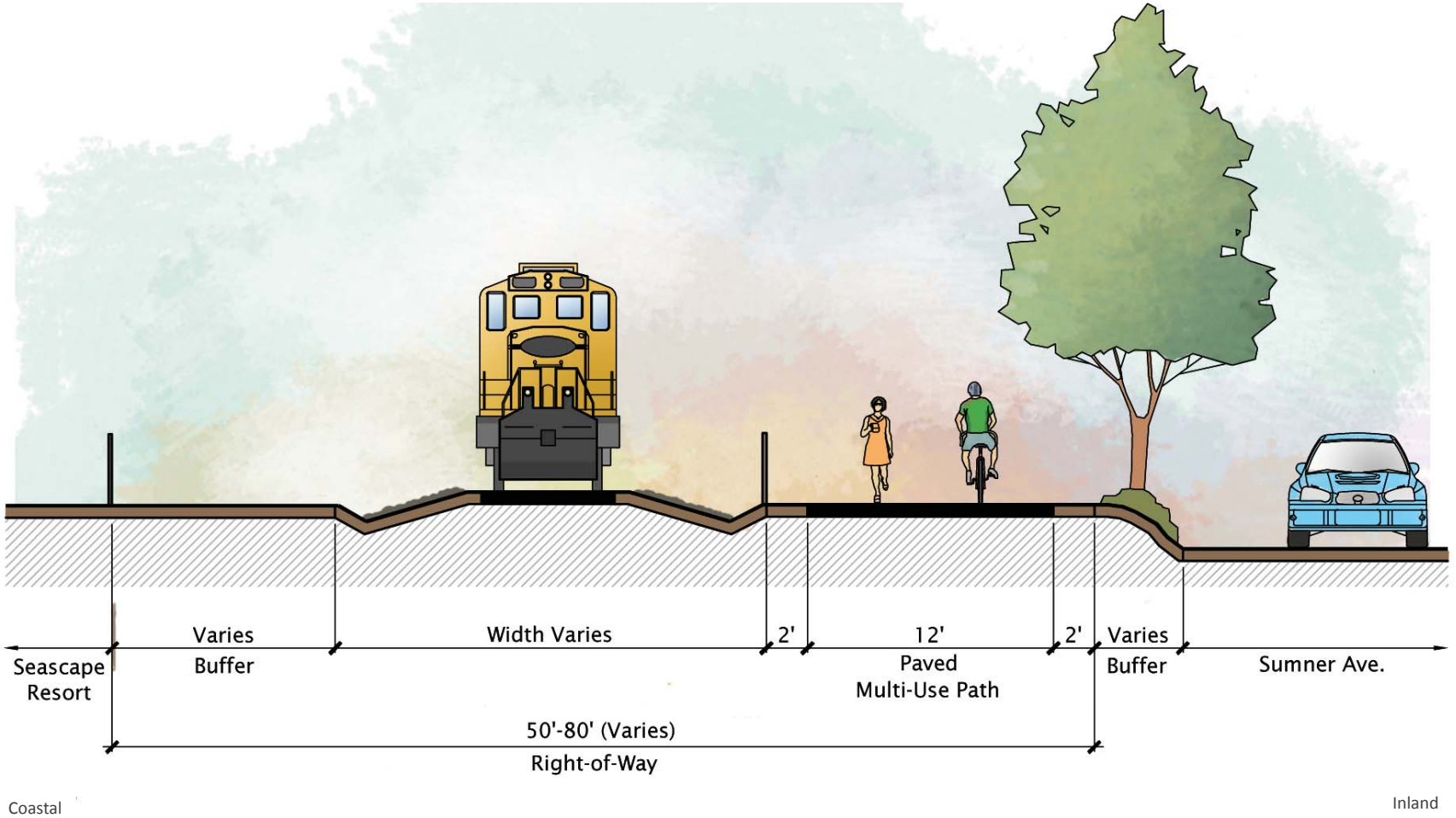


Figure 4-42 Segment 15 Section

Manresa State Beach, parking area, beach access, and train tracks

Railroad tracks adjacent to agricultural lands

Inn overlooking agricultural lands and railroad tracks

KOA campground and railroad tracks

4.16 SEGMENT 16 - ELLICOTT SLOUGH

Length: 2.66 Miles (14,030 LF) - Down coast Railroad Bridge Abutment at San Andreas Road to Buena Vista Drive

4.16.1 SEGMENT 16 BOUNDARY DETERMINATION

Beginning at the down coast side abutment or the existing rail bridge crossing of San Andreas Road at Manresa State Beach, most of Segment 16 falls between the rail corridor and San Andreas Road/Pacific Bike Route to Buena Vista Drive. This is a short stretch but is consistent in its setting of following both the rail corridor and the San Andreas Road corridor as the rail line heads inland toward Watsonville.

4.16.2 SEGMENT 16 DESCRIPTION

The railroad bridge crossing of San Andreas Road at Manresa State Beach is the first point along the rail corridor where the rail line begins to diverge from the coastal edge and head inland toward Watsonville, as it continues down coast.

The rail bridge is actually two connected bridges, a timber structure on the north side approach to San Andreas Road, followed by a concrete structure which crosses over San Andreas Road. The railroad tracks run along the edge of the Manresa State Beach parking lot north of San Andreas Road. Manresa State Beach provides coastal access with public parking, restrooms, accessible scenic overlook, and picnic areas, stairs and ramps down to the beach, drinking water, and State Park controlled gated access to the parking lot off San Andreas Road. This is the only point where San Andreas Road reaches the coastal edge and it is also the only point where the rail corridor and San Andreas Road intersect. The proposed rail trail would be located on the coastal side of the tracks connecting to the inland State Beach public facilities. The north side of the San Andreas Road crossing is bordered by residential areas while the down coast side of the crossing changes to agricultural land down to Buena Vista Drive. This segment connects with 19 activity centers, as identified in Table 3.1.

Segment 16 Proposed Improvements:

- 2.66 Miles (14,030 (LF) multi-use paved path along the rail right-of-way
- Two (2) at-grade road crossings

TABLE 4.16 Segment 16 - Ellicott Slough

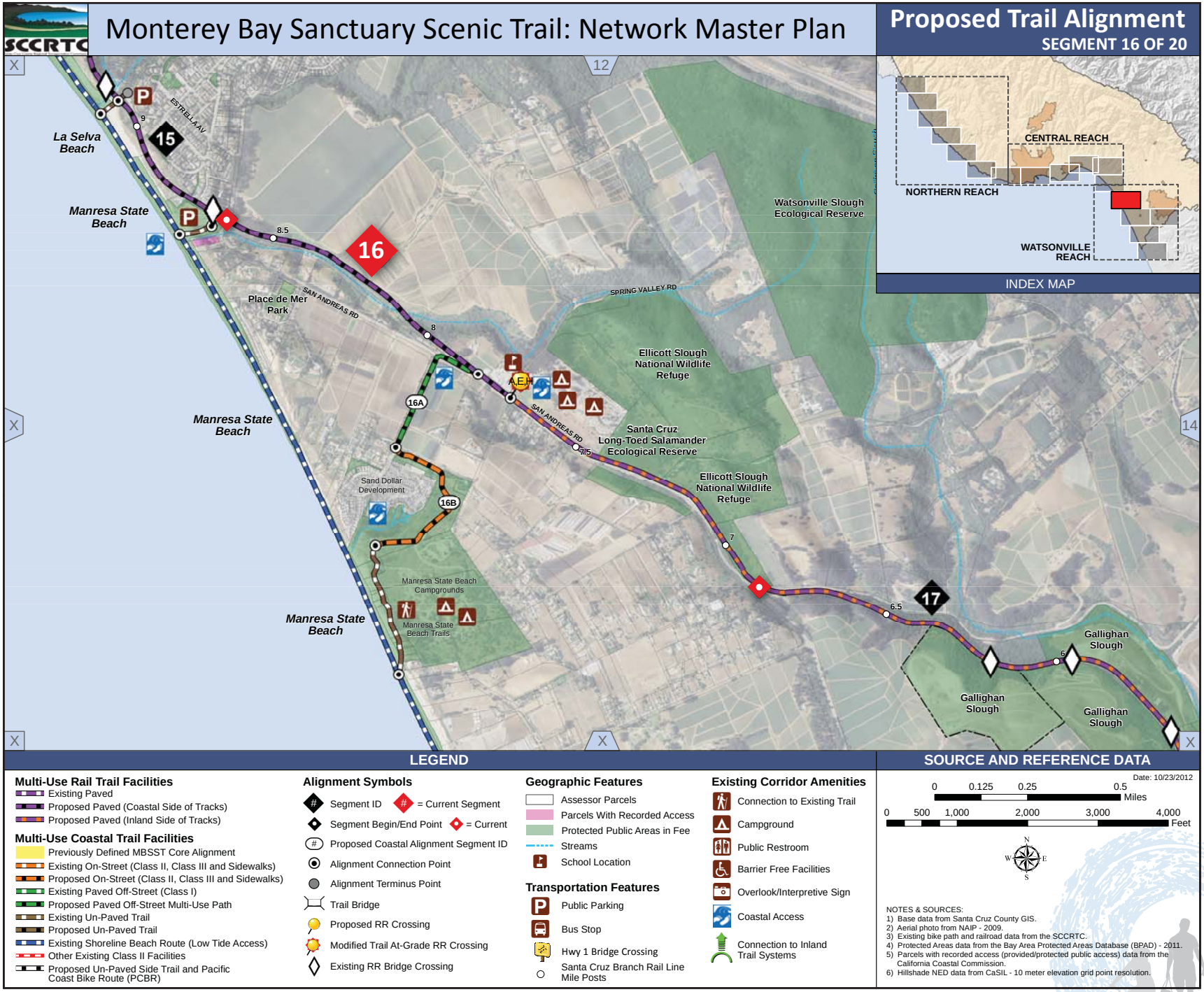
Segment Length	**2.66 miles (14,030 LF) - Ellicott Slough**			
Rail Trail Portion	1.78 miles (9,400 LF)			
Coastal Trail Portion	0.88 miles (4,630 LF)			
Segment Phase	**II**			
Segment Cost	**$3,823,795**			
Rail Trail Components	**Quantitiy**	**Unit**	**Unit Price**	**Cost**
Paved Multi-Use Path	9,400	Linear Feet	$162	$1,522,800
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$378,500
Bridge Structures	0	Each	Varies	$0
At-Grade Crossings (Rail Tracks or Streets)	4	Each	Varies	$345,000
			Rail Trail Construction Cost Subtotal	**$2,246,300**
Coastal Trail Components	**Quantitiy**	**Unit**	**Unit Price**	**Cost**
Paved Multi-Use Path	2,100	Linear Feet		$340,200
Unpaved Trail	0	Linear FeeT		$0
On Street Facilites (Class II, III and Sidewalks)	2,530	Linear Feet		$50,600
			Coastal Trail Construction Cost Subtotal	**$390,800**
Cost Summary				
Construction Cost Total				$2,637,100
Design and Engineering (15%)				$395,565
Design Contingency (20%)				$527,420
Environmental Permitting (10%)				$263,710
			SEGMENT TOTAL COST	**$3,823,795**

Segment Features	**Description**	**Quantity**
Segment Length	Manresa State Beach at San Andreas Road to Buena Vista Drive	1.78 miles
Minor Roadway Crossings	Spring Valley Road	1
Trail At-Grade Railroad Crossings	Spring Valley Road	1
Existing Staging Areas/Rest Stops	Manresa State Beach	1
Within 1/4 Mile of Public School	Renaissance High School	1
Connection to Public Beach	Manresa State Beach	1
Connection to Residential Area	Rural	1
Connection to Passive Park	Ellicott Slough National Wildlife Refuge	1

Manresa State Beach parking, bike racks, and beach access

Train trestle adjacent to Manresa State Beach

Scenic Manresa State Beach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Overlook/Interpretive Sign
Coastal Access
Connection to Inland Trail Systems
SOURCE AND REFERENCE DATA
Date: 10/23/2012
0 0.125 0.25 0.5 Miles
0 500 1,000 2,000 3,000 4,000 Feet
NOTES & SOURCES:
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2) Aerial photo from NAIP - 2009.
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5) Parcels with recorded access (provided/protected public access) data from the California Coastal Commission.
6) Hillshade NED data from CaSIL - 10 meter elevation grid point resolution.

Figure 4-43

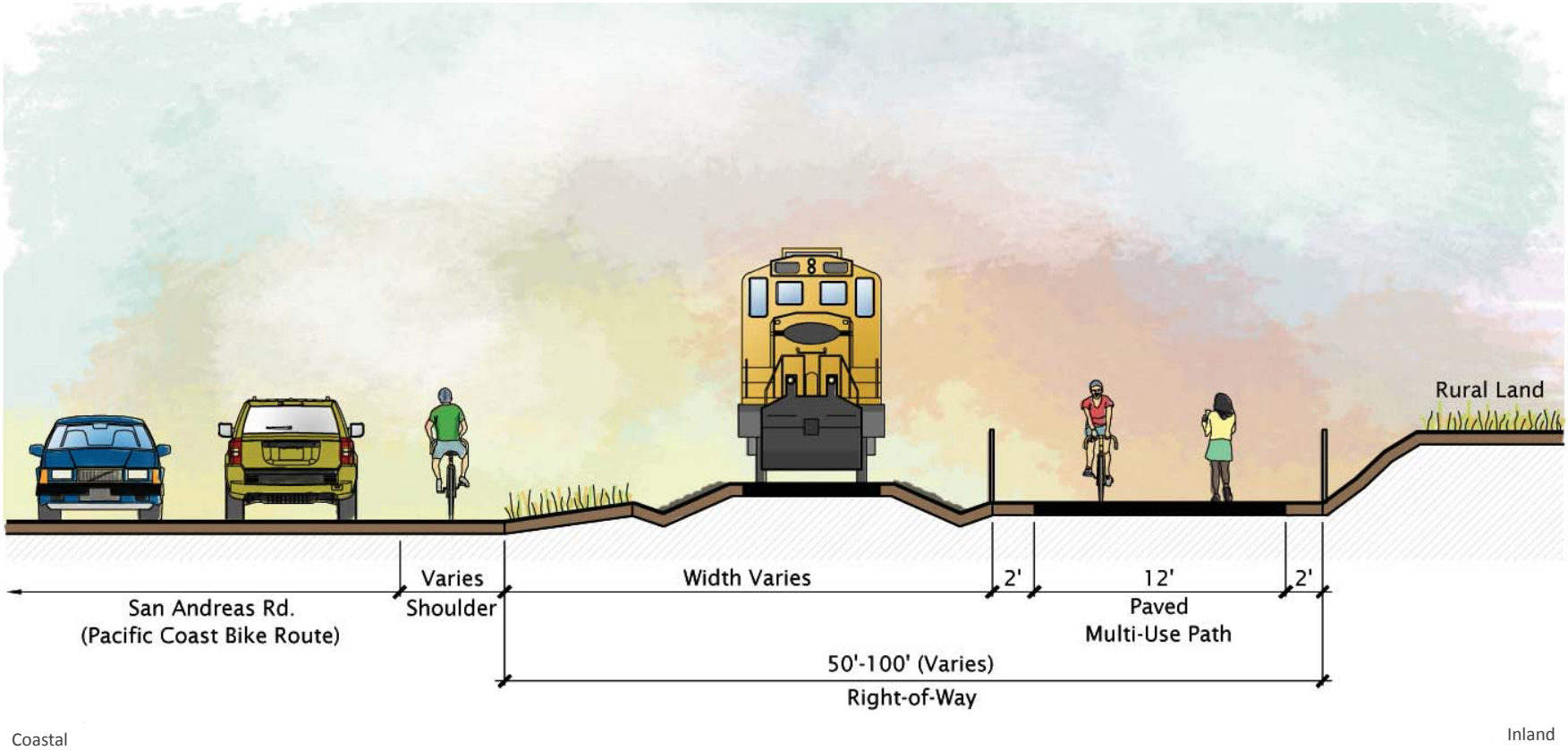

Figure 4-44 Segment 16 Section

Watsonville Slough train trestle

Watsonville slough

Watsonville slough

4.17 SEGMENT 17 - GALLIGHAN SLOUGH

Length: 4.00 Miles - (21,140 LF) - Buena Vista Drive and San Andreas Road intersection to Lee Road

4.17.1 SEGMENT 17 BOUNDARY DETERMINATION

The Segment 17 boundary is determined by the physical setting and the change in rail corridor character from the north start point at San Andreas Road down coast to Harkins Slough, a primary branch of Watsonville Slough. This is the one spot where the rail corridor diverts away from the coastal edge and heads inland as it continues down coast to Watsonville.

4.17.2 SEGMENT 17 DESCRIPTION

Starting from the intersection of San Andreas Road and Buena Vista Drive, the proposed rail trail would parallel Gallighan Slough to its convergence with Harkins Slough, following the inland side of the rail tracks. . The rail right-of-way width varies from 45-ft wide to 148-ft wide as it continues along the steep slope just down coast of mile marker 7, to mile marker 4.5, at the Harkins Slough trestle. The Segment 17 stretch will require retaining walls to create a bench for the trail tread. This segment is heavily wooded with several smaller rail trestle bridge crossings over small drainages and sloping ravines. The proposed rail trail will follow the inland rail right-of-way along several agricultural fields, a mineral quarry, and wooded slopes as it descends towards the Gallighan Slough-Harkins Slough wetland area. The alignment will require several pre-engineered bridges and culverts to cross several of the drainages along the steep slopes. The Harkins Slough is seasonally flooded and this 400-ft long segment of the trail may require a boardwalk type bridge structure to cross the wetland area to reach the down coast side of the Slough. This segment connects with four (4) activity centers identified in Table 3.1.

Segment 17 Proposed Improvements:

- 4.0 Miles (21,140 LF) multi-use paved path along the inland rail right-of-way
- Five (5) rail bridge/culvert crossings

TABLE 4.17 Segment 17 - Gallighan Slough

Segment Length	**4.00 miles (21,140 LF) - Gallighan Slough**
Rail Trail Portion	4.00 miles (21,140 LF)
Coastal Trail Portion	0.0 miles (0 LF)
Segment Phase	**III**
Segment Cost	**$9,782,686**

Rail Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	21,140	Linear Feet	Varies	$5,212,980
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$213,700
Bridge Structures	4	Each	Varies	$1,300,000
At-Grade Crossings (Rail Tracks or Streets)	2	Each	Varies	$20,000
			Rail Trail Construction Cost Subtotal	**$6,746,680**

Coastal Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Unpaved Trail	0	Linear Feet	Varies	$0
On Street Facilites (Class II, III and Sidewalks)	0	Linear Feet	Varies	$0
			Coastal Trail Construction Cost Subtotal	**$0**

Cost Summary	
Construction Cost Total	$6,746,680
Design and Engineering (15%)	$1,012,002
Design Contingency (20%)	$1,349,336
Environmental Permitting (10%)	$674,668
SEGMENT TOTAL COST	**$9,782,686**

Segment Features	Description	Quantity
Rail Bridge Crossing (Wood Trestle)	Various bridges along segment	4
Major Drainage	Gallighan Slough and Harkins Slough	1
Minor Drainage	Various drainages along segment	2

Existing Watsonville Slough trail

Existing Watsonville Slough trail

Existing Watsonville Slough trail


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Figure 4-45

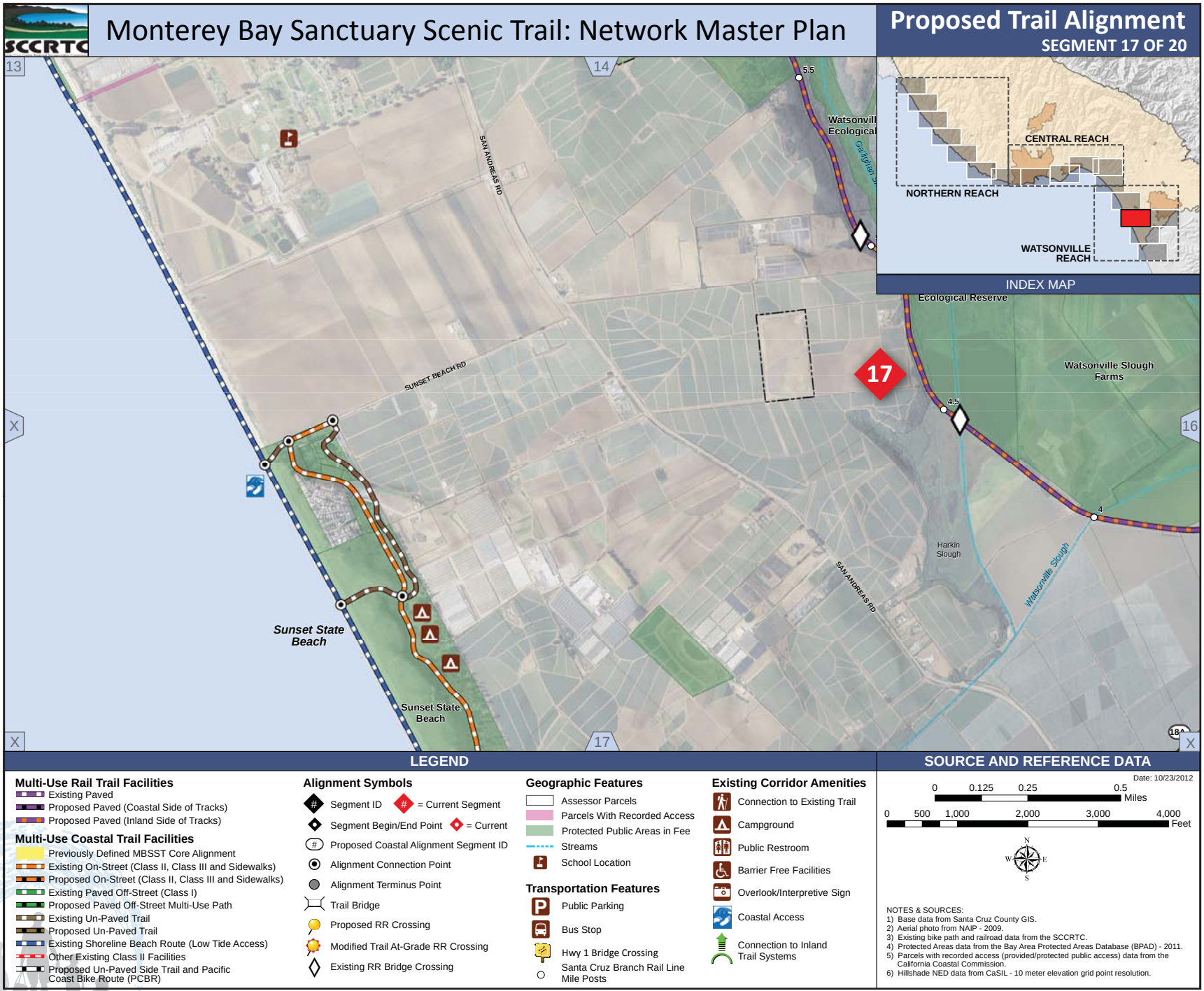
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Figure 4-46

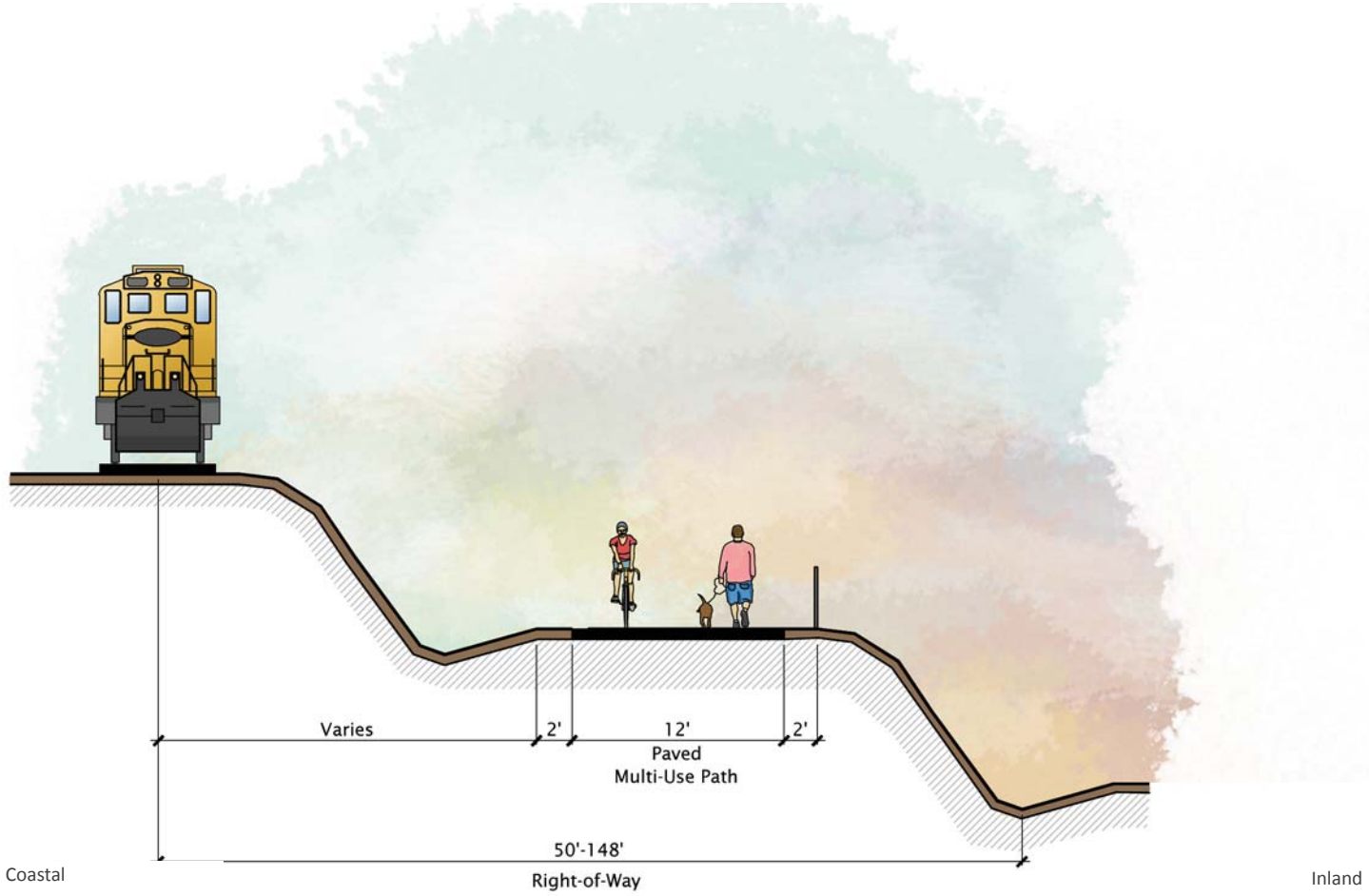


Figure 4-47 Segment 17 Section

Harkins Slough looking south

Watsonville agriculture along Beach Road

Watsonville agriculture along Beach Road

Watsonville agriculture along Beach Road

4.18 SEGMENT 18 - WATSONVILLE SLOUGH OPEN SPACE TRAILS

Length: 4.01Miles (21,170 LF) - Lee Road to Walker Street

4.18.1 SEGMENT 18 BOUNDARY DETERMINATION

Segment 18 starts at the railroad crossing at Lee Road and continues down coast to Walker Street. This segment connects downtown Watsonville to the existing trail network in the Watsonville Slough Wetlands.

4.18.2 SEGMENT 18 DESCRIPTION

Segment 18 will require coordination with the City of Watsonville, Caltrans, and adjacent local farm owners and operators. Segment 18 begins at Lee Road and follows the rail right-of-way on the inland side as it continues down coast, crossing under the Highway 1 bridge structure near Lee Road and into Watsonville. The proposed alignment crosses the Ohlone Parkway at-grade rail crossing and connects to the Watsonville Wetlands trail system. This segment ends following the industrial areas on the inland side of the tracks just as they connect to Walker Street in the City of Watsonville. Segment 18 connects with three (3) activity centers, as identified in Table 3.1.

Segment 18 Proposed Improvements:

- 4.01 Miles (21,170 LF) multi-use paved path along the inland rail right-of-way
- One (1) rail culvert crossing
- This segment also includes fencing for agricultural operations and safety

TABLE 4.18 Segment 18 - Watsonville Slough Open Space Trails

Segment Length	**4.01 miles (21,170 LF) - Watsonville Open Space Trails**
Rail Trail Portion	1.20 miles (6,350 LF)
Coastal Trail Portion	2.81 miles (14,820 LF)
Segment Phase	**II**
Segment Cost	**$2,570,995**

Rail Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	6,350	Linear Feet	$162	$1,028,700
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$288,000
Bridge Structures	0	Each	Varies	$0
At-Grade Crossings (Rail Tracks or Streets)	5	Each	Varies	$160,000
			Rail Trail Construction Cost Subtotal	**$1,476,700**

Coastal Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Unpaved Trail	0	Linear Feet	Varies	$0
On Street Facilites (Class II, III and Sidewalks)	14,820	Linear Feet	$20	$296,400
			Coastal Trail Construction Cost Subtotal	**$296,400**

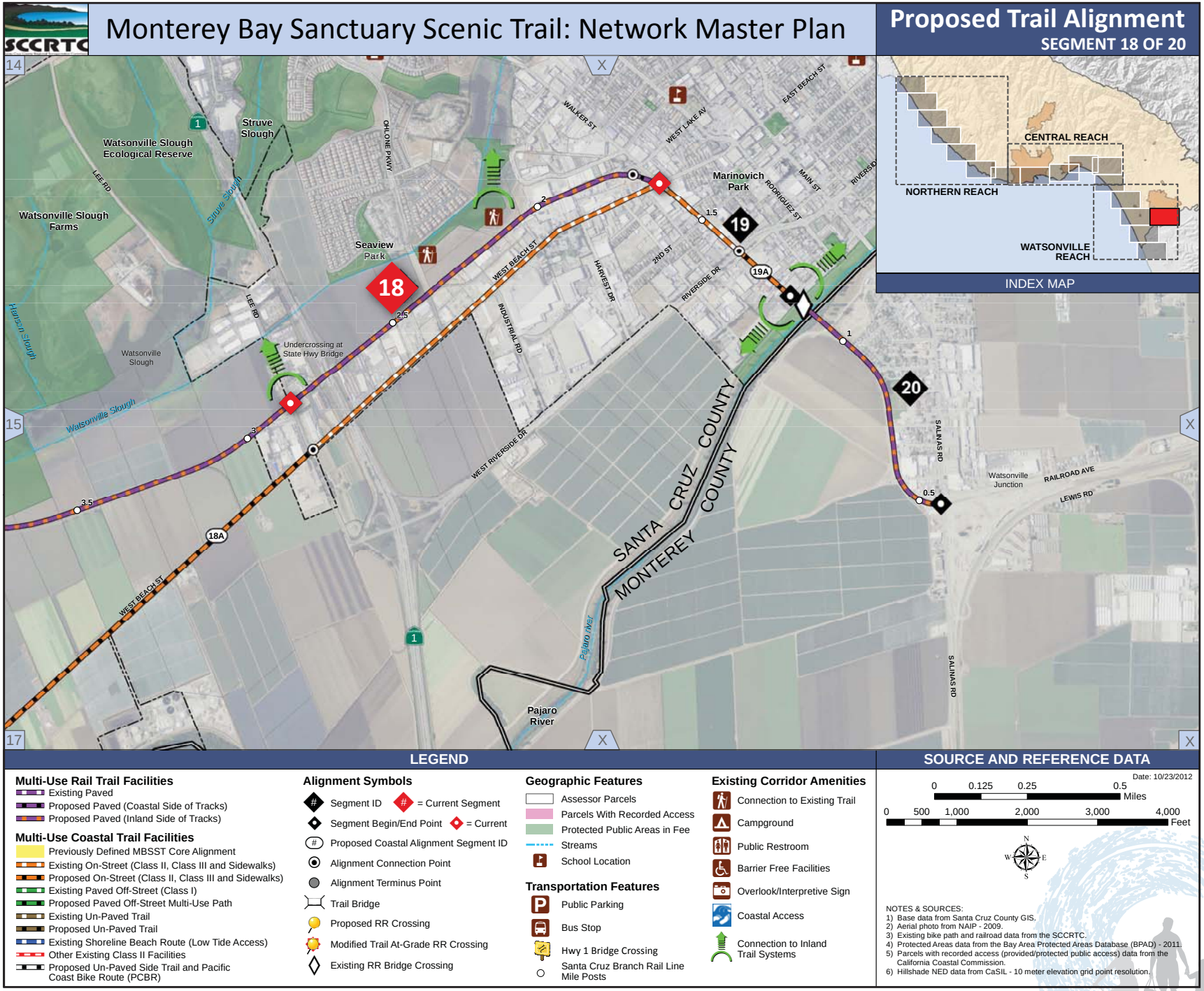
Cost Summary	
Construction Cost Total	$1,773,100
Design and Engineering (15%)	$265,965
Design Contingency (20%)	$354,620
Environmental Permitting (10%)	$177,310
SEGMENT TOTAL COST	**$2,570,995**

Segment Features	Description	Quantity
Minor Roadway Crossings	Lee Road, Ohlone Parkway	2
Private Road Crossings	Farm field access roads	2
Existing Staging Areas/Rest Stops	Watsonville Wetlands	1
Connection To Other Trails	Watsonville Wetlands	1
Within 1/4 Mile of Public School	Landmark Elementary School	1
Connection to Residential Area	Seaview Ranch	1

Row crops adjacent to the railroad corridor

Scenic agricultural fields

Agriculture employee parking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SOURCE AND REFERENCE DATA
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5) Parcels with recorded access (provided/protected public access) data from the California Coastal Commission.
6) Hillshade NED data from CaSIL - 10 meter elevation grid point resolution.

Figure 4-48

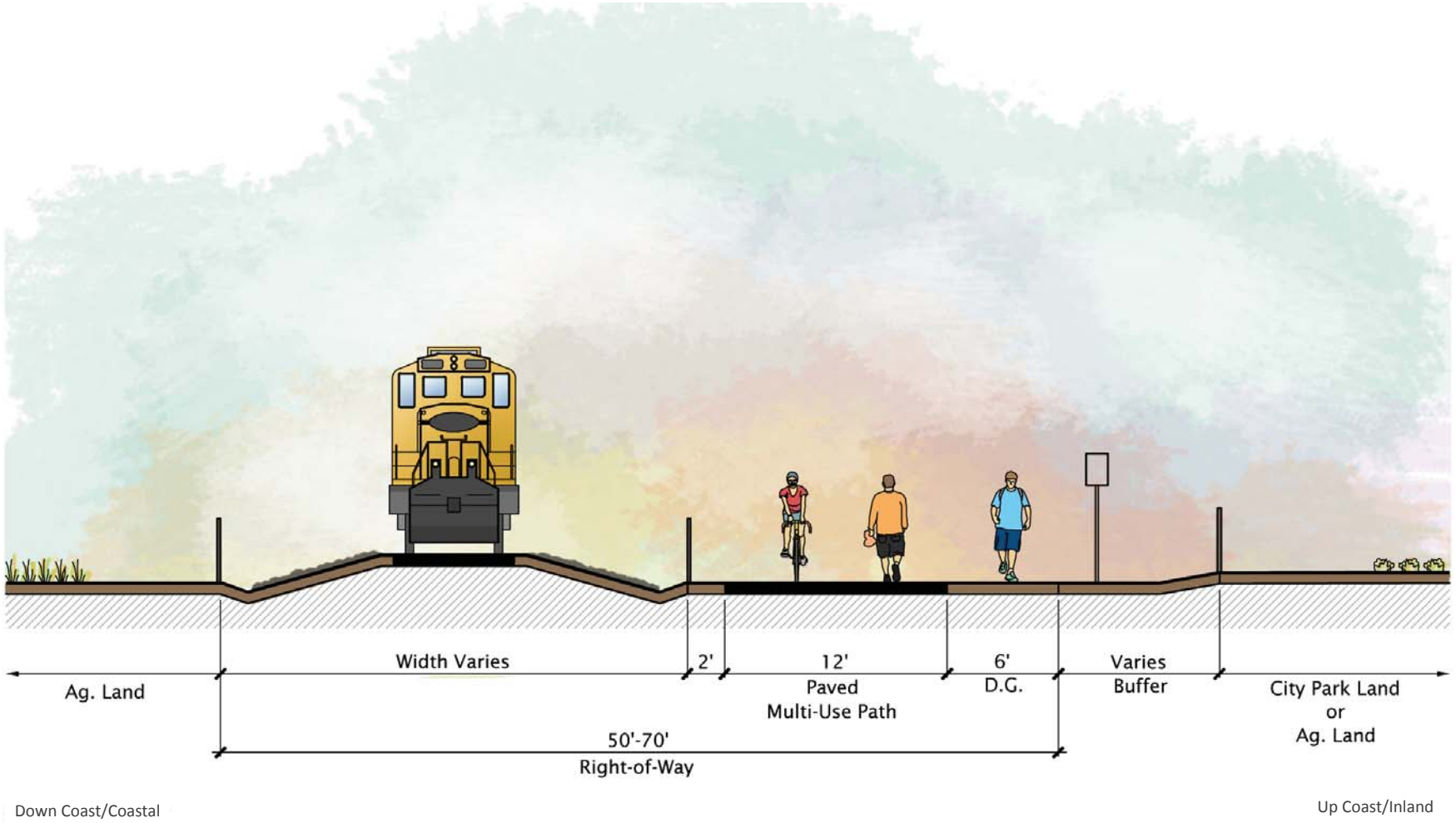


Figure 4-49 Segment 18 Section

Walker Street industrial area adjacent to railroad corridor

Murals adjacent to the rail corridor on Walker Street in Watsonville

Industrial fence and road located in close proximity to the railroad tracks

4.19 SEGMENT 19 - WALKER STREET, CITY OF WATSONVILLE

Length: 0.65 Mile (3,410 LF) - Walker Street to North Bank of the Pajaro River

4.19.1 SEGMENT 19 BOUNDARY DETERMINATION

Segment 19, from the intersection of Walker Street and Coastal Beach Street, is both a multi-use path and an on-street facility. It begins near railroad mile marker 2 and continues to the down coast end of Walker Street at the Pajaro River Bridge.

4.19.2 SEGMENT 19 DESCRIPTION

Segment 19 will be part of the City of Watsonville bike facility network. Segment 19 starts as an existing Class II bike lane and sidewalk facility at the intersection of Walker Street and Coastal Beach Street. Currently, the rail tracks follow the center line of Walker Street and the existing Class II bike lanes and sidewalks end at the intersection of Walker Street and Coastal Riverside Drive. The rail tracks continue down coast to the Pajaro River trestle crossing just at the end of Walker Street. New Class II bike lanes would need to be added along both sides of Walker Street and sidewalks on the inland side of the street down coast of Riverside Drive, all the way to the terminus of Walker Street, to connect with the Pajaro River Levee trail network. Segment 19 connects with 15 activity centers, as identified in Table 3.1.

Segment 19 Proposed Improvements:

- 0.65 Mile (3,410 LF) Class II bike lane along Walker Street right-of-way
- New Sidewalks on the inland side of Walker Street from the intersection of W. Riverside Drive to the end of Walker Street connecting to the Pajaro River

TABLE 4.19 Segment 19 - Walker Street, City of Watsonville

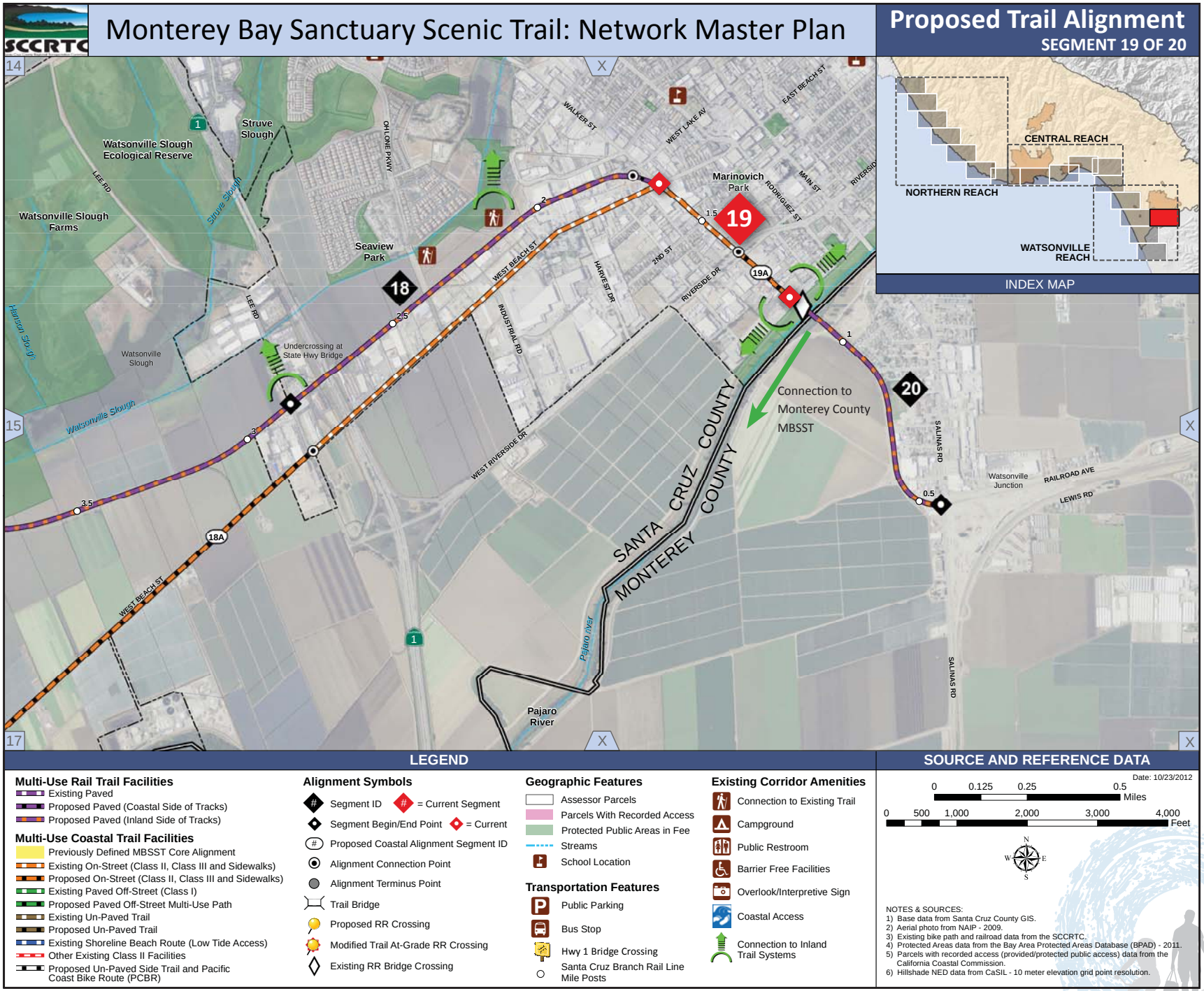
Segment Length	**0.65 miles (3,410 LF) - Walker Street, City of Watsonville**			
Rail Trail Portion	0.47 miles (2,640 LF)			
Coastal Trail Portion	0.18 miles (950 LF)			
Segment Phase	**II**			
Segment Cost	**$929,885**			
Rail Trail Components	**Quantitiy**	**Unit**	**Unit Price**	**Cost**
Paved Multi-Use Path	2,460	Linear Feet	$180	$442,800
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$132,800
Bridge Structures	0	Each	Varies	$0
At-Grade Crossings (Rail Tracks or Streets)	1	Each	Varies	$60,000
			Rail Trail Construction Cost Subtotal	**$635,600**
Coastal Trail Components	**Quantitiy**	**Unit**	**Unit Price**	**Cost**
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Unpaved Trail	0	Linear Feet	Varies	$0
On Street Facilites (Class II, III and Sidewalks)	950	Linear Feet	$6	$5,700
			Coastal Trail Construction Cost Subtotal	**$5,700**
Cost Summary				
Construction Cost Total				$641,300
Design and Engineering (15%)				$96,195
Design Contingency (20%)				$128,260
Environmental Permitting (10%)				$64,130
			SEGMENT COST TOTAL	**$929,885**

Segment Features	Description	Quantity
Connection To Other Trails	Pajaro River	1
Within 1/4 Mile of Public School	Radcliff Elementary	2
Connection to Commercial Area	Walker Street and Downtown Watsonville	1
Connection to Residential Area	Multiple	2
State Highway Crossings	State Route 129 (Riverside Drive)	1
Major Road Crossings	West Beach Street	1
Minor Roadway Crossings	Second Street	1
Within 1/4 Mile of Public School	Radcliff Elementary, Ceiba College Prep	2

Railroad tracks with Highway 1 in the background

Railroad tracks with hotel in the background

Pajaro River Levee Trail park sign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WEST RIVERSIDE DR
INDUSTRIAL RD
HARVEST DR
RIVERSIDE DR
2ND ST
WEST LAKE AV
EAST BEACH ST
WALKER ST
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Alignment Connection Point
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Figure 4-50

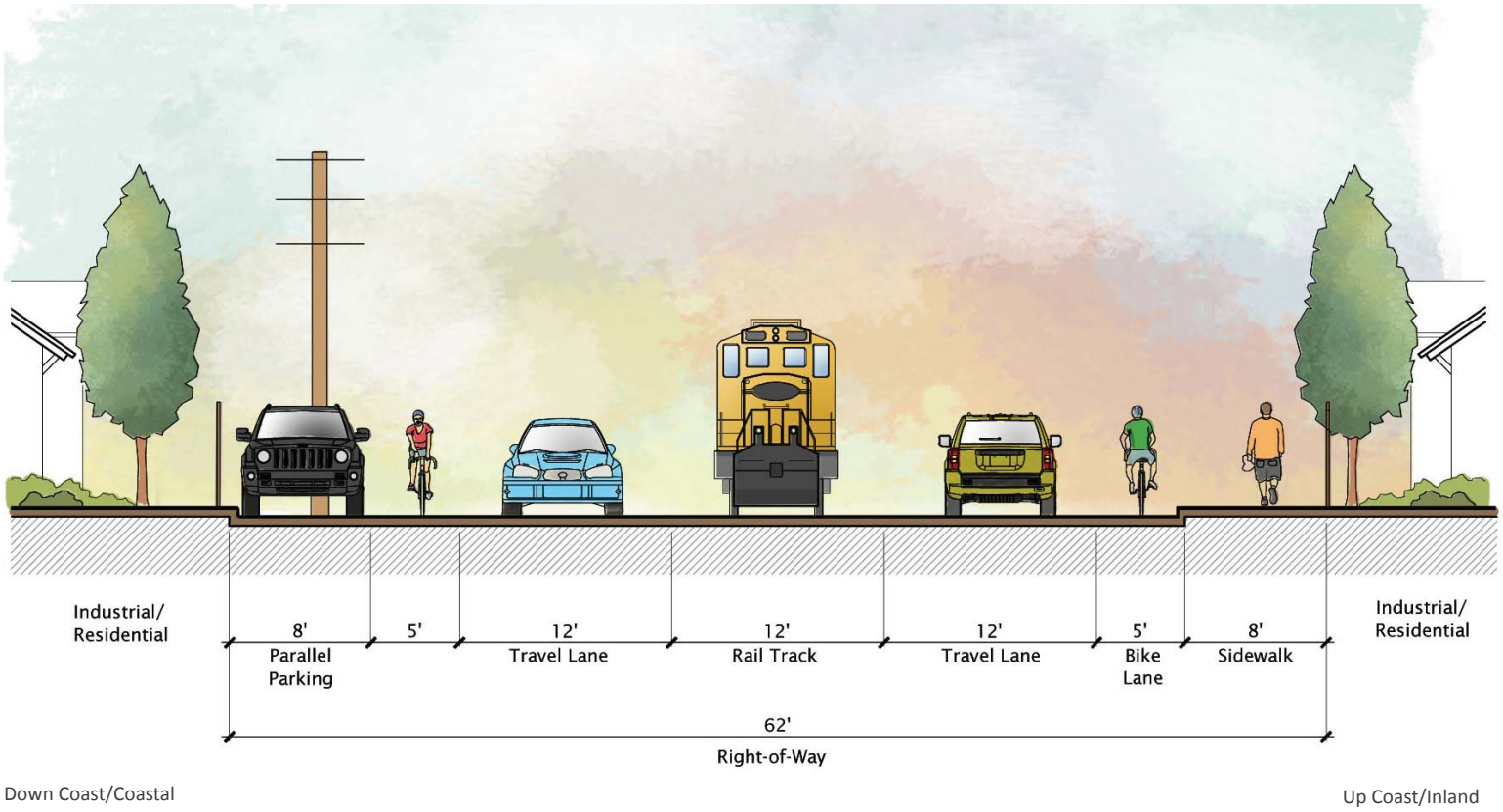


Figure 4-51 Segment 19 Section

Pajaro river levee looking south

Pajaro River railroad bridge

Homeless encampment adjacent to the Pajaro River

4.20 SEGMENT 20 - PAJARO RIVER

Length: 0.74 Mile (3,930 LF) - North Bank of the Pajaro River to Porter Street

4.20.1 SEGMENT 20 BOUNDARY DETERMINATION

Segment 20 is the last segment of the railroad corridor starting at the rail trestle crossing of the Pajaro River and concludes the proposed trail corridor down coast where the rail line meets Salinas Road.

4.20.2 SEGMENT 20 DESCRIPTION

This segment is a short connection that includes a new pre-engineered bridge crossing at the Pajaro River. This connection would occur on the inland side of the river rail trestle crossing and would provide regional connection to the existing and proposed Pajaro River levee-top trail network in Watsonville. The proposed rail trail alignment would continue along the inland side of the tracks connecting adjacent neighborhoods and schools and ending at the Salinas Road right-of-way. This terminus at Salinas Road is planned to someday continue inland from Salinas Road to a future rail station on Railroad Avenue and a regional connection inland of the county line toward San Benito County and the City of Gilroy. The terminus of Segment 20 connects to the Monterey County bike path, as identified by the Transportaion Agency for Monterey County (TAMC). This segment connects with five (5) activity centers, as referenced in Table 3.1.

Segment 20 Proposed Improvements:

- 0.74 Miles (3,930 LF) multi-use paved path along the inland rail right-of-way
- One (1) new pre-engineered bike/pedestrian bridge at the Pajaro River crossing, 200’ span
- 3,930 feet of fencing for agricultural operations and safety

TABLE 4.20 Segment 20 - Pajaro River

Segment Length	**0.74 miles (3,930 LF) - Pajaro River**
Rail Trail Portion	0.74 miles (3,930 LF)
Coastal Trail Portion	0.0 miles (0 LF)
Segment Phase	**III**
Segment Cost	**$2,688,822**

Rail Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	3,930	Linear Feet	$162	$636,660
Amenities (fencing, benches, signeage, etc.)	1	Lump Sum	Varies	$217,700
Bridge Structures	1	Each	$1,000,000	$1,000,000
At-Grade Crossings (Rail Tracks or Streets)	0	Each	Varies	$0
			Rail Trail Construction Cost Subtotal	**$1,854,360**

Coastal Trail Components	Quantitiy	Unit	Unit Price	Cost
Paved Multi-Use Path	0	Linear Feet	Varies	$0
Unpaved Trail	0	Linear Feet	Varies	$0
On Street Facilites (Class II, III and Sidewalks)	0	Linear Feet	Varies	$0
			Coastal Trail Construction Cost Subtotal	**$0**

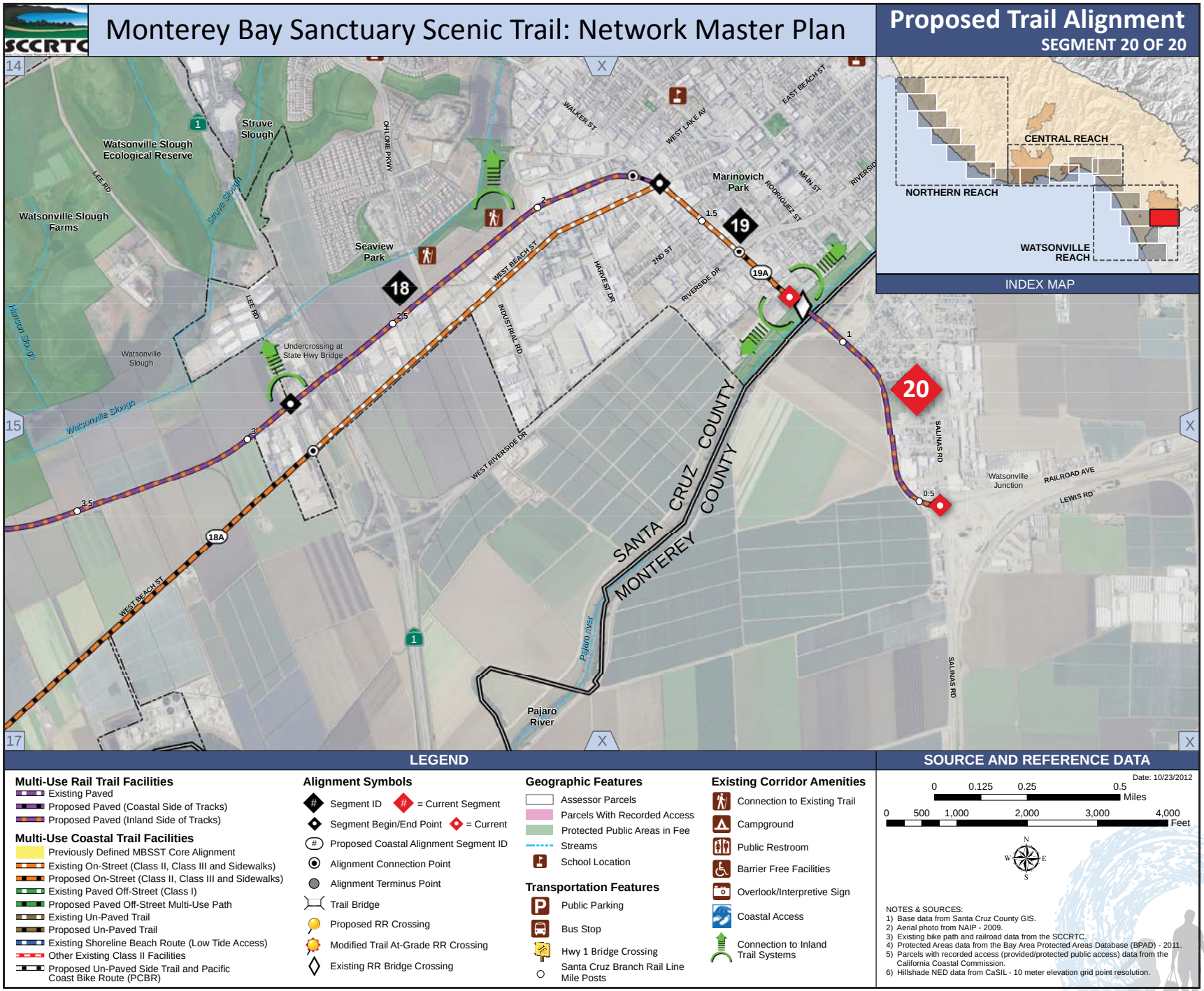
Cost Summary	
Construction Cost Total	$1,854,360
Design and Engineering (15%)	$278,154
Design Contingency (20%)	$370,872
Environmental Permitting (10%)	$185,436
SEGMENT TOTAL COST	**$2,688,822**

Segment Features	Description	Quantity
Segment Jurisdictional Area	City of Watsonville, Flood Control, Monterey County	2.00
Rail Bridge Crossing (Wood Trestle)	Pajaro River	1.00
Major Drainage	Pajaro River	1.00
Connection To Other Trails	Pajaro River, Watsonville Trail Network	2.00
Within 1/4 Mile of Public School	Pajaro Middle School	1.00
Connection to Commercial Area	Salinas Road/County Road G12	1.00
Connection to Residential Area	South Watsonville	1.00
Connection to Sports Park	Pajaro Middle School fields	1.00

Pajaro River looking northeast

Railroad bridge over the Pajaro River at Walker Street

Pedestrians walking over the Pajaro River railroad bridge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Date: 10/23/2012
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Figure 4-52

Monterey Bay Sanctuary Scenic Trail: Network Master Plan

Proposed Trail Alignment
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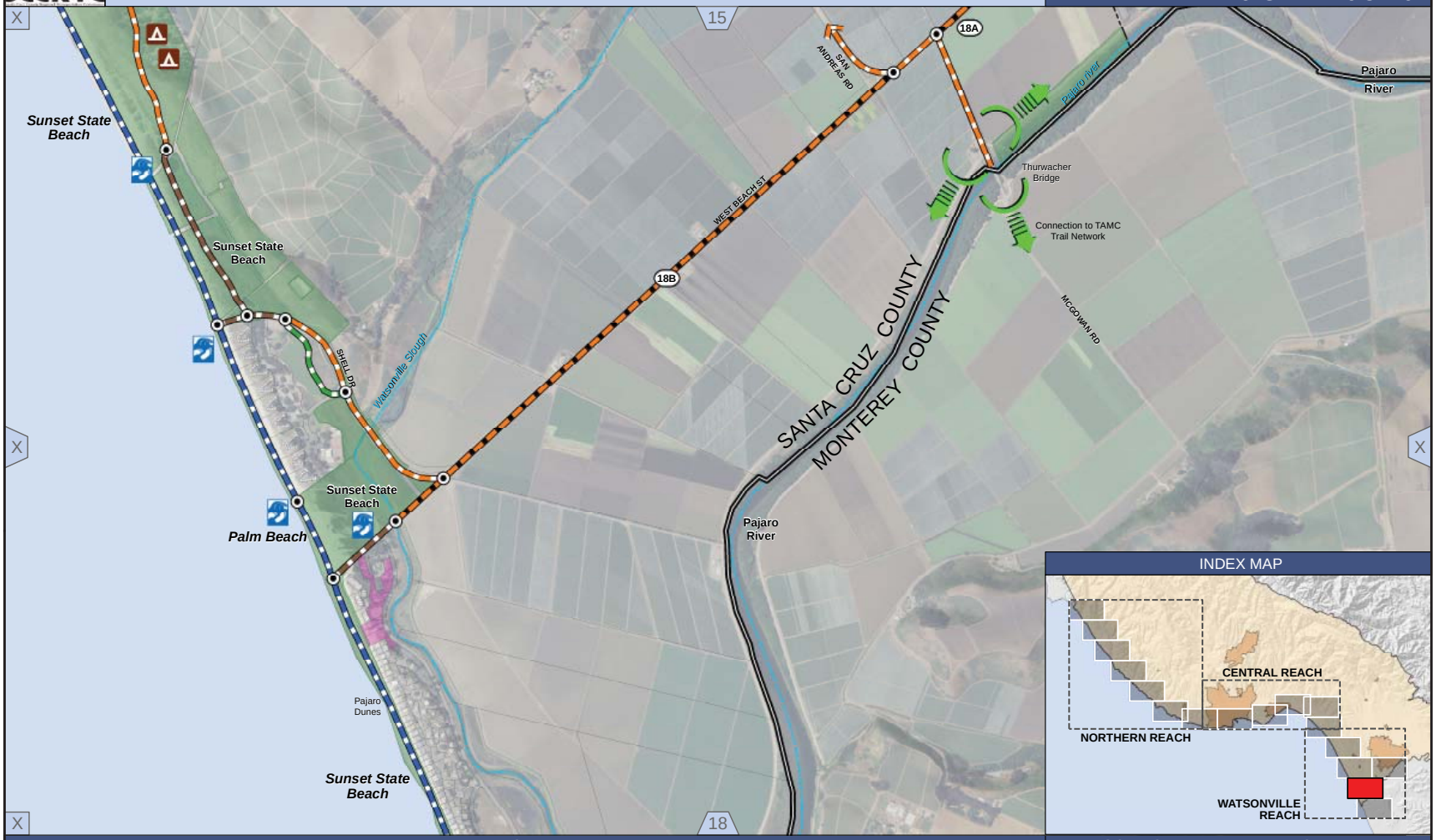

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- Coastal Access
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0 0.125 0.25 0.5 Miles

0 500 1,000 2,000 3,000 4,000 Feet

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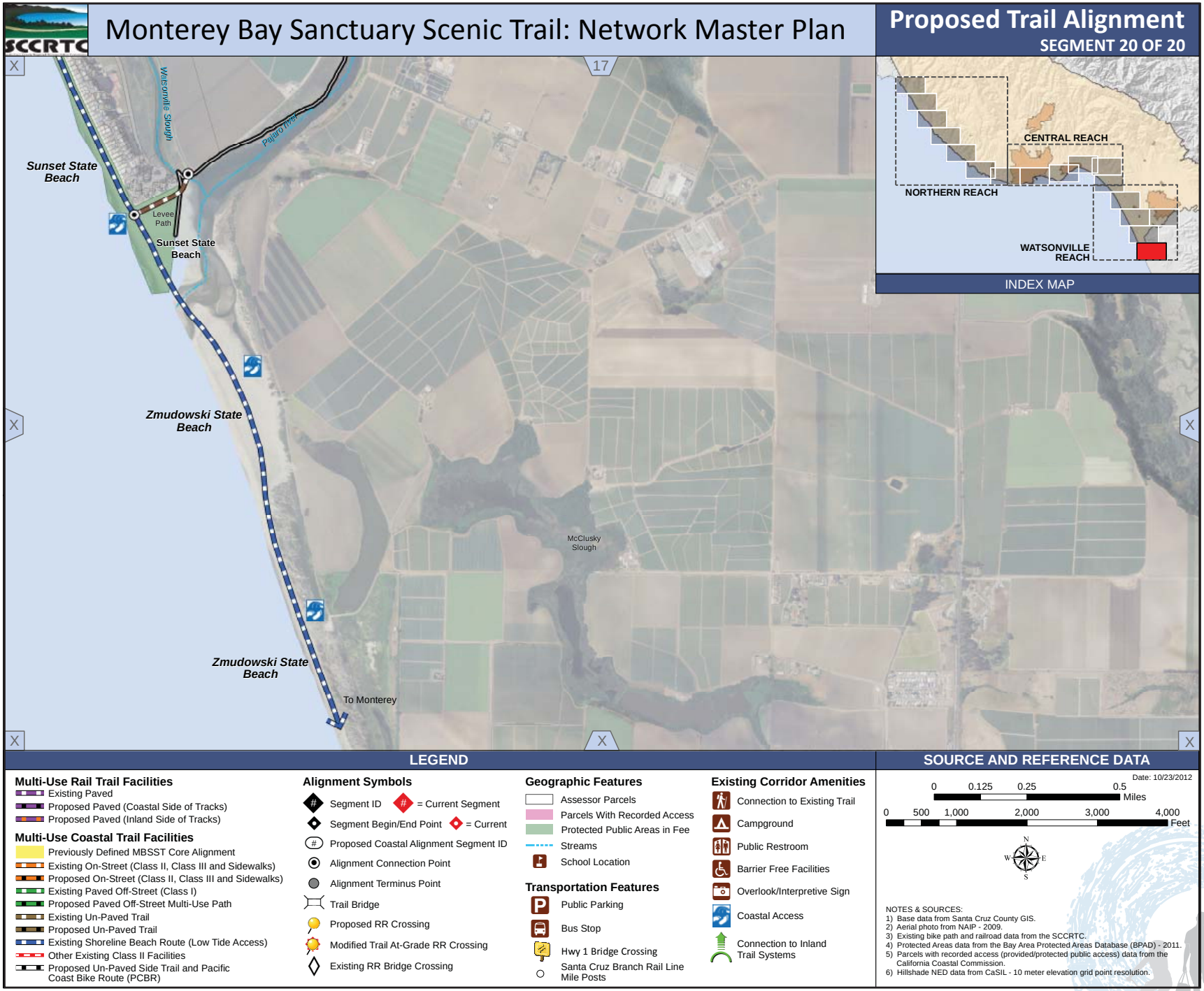
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Figure 4-54

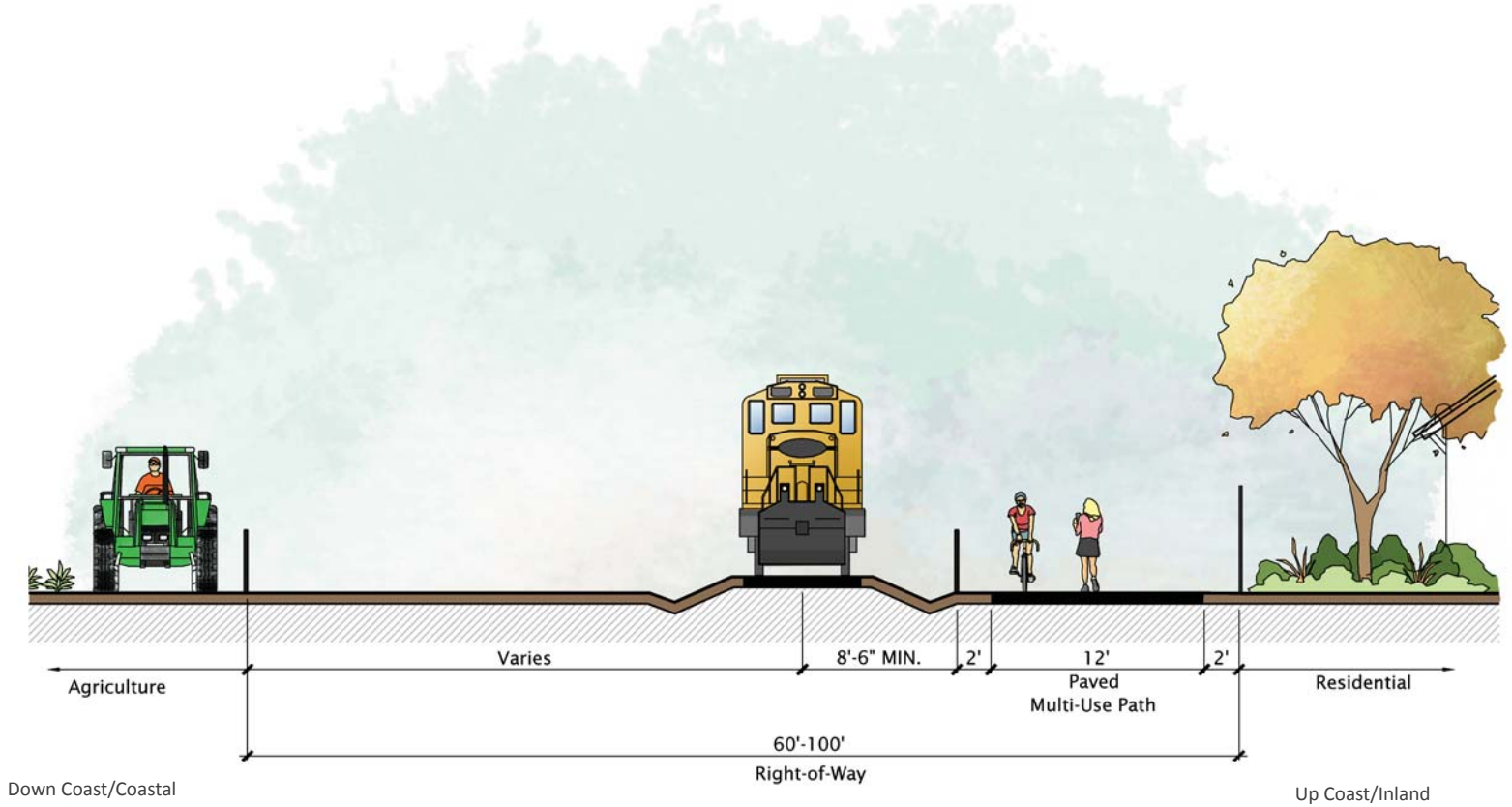


Figure 4-55 Segment 20 section

SECTION FIVE CONTENTS

This section focuses on trail facility design standards such as typical path construction and layout, way-finding signing and marking, rail and road crossings, rail-with-trail design standards, on-and off-road bikeways, security and landscape fencing, lighting, bridges and crossings, habitat enhancement and any operational and management specifics that might be warranted as a result of sensitive biological resources. The design standards are presented in list form and supported with photos, graphic sections, and elevations.

SECTION FIVE
TRAIL DESIGN STANDARDS

5.1 REGULATORY FRAMEWORK

State and Federal standards guide and/or dictate the design standards for the Monterey Bay Sanctuary Scenic Trail Network. Additionally, professional organizations provide specific design and implementation guidelines and standards to ensure that multi-use paths are constructed to a consistent set of the highest and best standards currently available in the United States. Planning, design, and implementation standards are derived from the following sources:

- Caltrans: Highway Design Manual (Chapter 1000: Bikeway Planning and Design)
- American Association of State Highways and Transportation Officials (AASHTO): A Policy on Geometric Design of Highways and Streets
- Manual of Uniform Traffic Control Devices
- United States Department of Transportation (USDOT), Federal Highway Administration (FHWA): Selecting Roadway Design Treatments to Accommodate Bicycles
- Bicycle Friendly Advocacy: Selecting and Designing Bicycle Routes
- U.S. Department of Transportation/Federal Highway Administration: Conflicts on Multiple-Use Trails
- Institute of Transportation Engineers: Design and Safety of Pedestrian Facilities
- Regional Transportation Commission: Rails-with-Trails, Sharing Corridors for Transportation and Recreation
- California Coastal Trail Accessway Standards
- Local Coastal Program(s)
- National Association of City Transportation Officials (NACTO) - Urban Bikeway Design Guide
- California Department of Parks and Recreation Accessibility Guidelines (2009)
- Iowa Pacific Railroad Design Preferences

It is useful to note that while there are a considerable number of trails on active railroads around the United States, few design guidelines have been developed specifically for this type of facility to date. The sources listed above provide details on many aspects of a rail trail, but (a) may contain recommendations that disagree with each other, (b) are not, in most cases, officially recognized “requirements,” and (c) may not cover all of conditions on most rail trails. Except for the Caltrans guidelines, all design guidelines must be considered as simply design resources for the MBSST, to be supplemented by the reasonable judgments of professionals.

In addition to the published resources listed above, the MBSST standards have been drawn from the experiences of active rail trails around California and the United States to establish accepted practices. Unfortunately, there are few distinct patterns around the country in terms of grade crossings, fencing, setbacks, and other items. Efforts are currently underway by planning and traffic specialists to establish an official reviewing body in California composed of Caltrans, the Public Utilities Commission, and other agencies and organizations to establish a set of standards for rail trails in the State.

The following table summarizes the breakdown between those design standards which are mandatory versus those which are advisory only. This framework forms the basic foundation for the trail design.

TABLE 5.1 - Standard Types

Mandatory Standards	Advisory Standards
Trail Width	Signing and Striping
Separation of Pathway to Roadway	Intersections and Crossings
Design Speed	Horizontal Alignment
Class I Bike Path	Stopping Sight Distance
Class II Bike Lanes	Lateral Clearance on Horizontal Curves
Class III Bike Routes	Gradients
Bridge and Grate Standards	Structural Section
Signing, Markings and Traffic Controls	Drainage
Sidewalks	Barrier Posts
	Bikeway and Railroad Intersections
	Trail Setbacks from Railroad Tracks
	Multi-use paths

APPLICATION OF STANDARDS

The MBSST has been designed in accordance with the basic guidelines set forth by Caltrans. Where there are conditions that are not explicitly covered in the Caltrans or AASHTO guidelines, advisory standards from appropriate resources have been applied. In conjunction with future construction, the final engineered plans for segments of the trail will demonstrate compliance with all applicable mandatory standards. Compliance will be determined by the appropriate jurisdiction in which the trail is located.

CONTINUOUS THEME

The 50-mile length of the MBSST presents a design challenge in terms of maintaining a uniform and cohesive appearance. Since the trail network crosses through several jurisdictions, certain design features become critical to maintaining a continuous theme and trail experience. These key unifying design features are listed below and are illustrated in this section.

- Trail Logo
- Directional Signs
- Kiosks and Information Resources
- Landscaping Features
- Pavement Markings
- Mile Markers
- Interpretative Exhibit Design
- Trail Entrance Features

Conceptual wayfinding signage for the Coastal Rail Trail

California State Parks logo

Monterey Bay Sanctuary Scenic Trail logo

California Coastal Trail logo

5.2 TRAIL CLASSIFICATIONS

The trail network travels through a varied landscape for its 50-mile length. The sections within Santa Cruz, Capitola, Aptos, and Watsonville are urban in nature, characterized by the adjacency of residences and businesses, and a greater number of public street crossings. In contrast, the sections north of Santa Cruz and south of Aptos are surrounded by rural lands and for the most part, working agricultural operations, state parks, or open space. The recommended trail alignment in Section 4 identifies the type of trail to be constructed within each segment. These types of trails include multi-use paved paths, Class II designated bike lanes, Class III on-street bike routes, unpaved trail surfaces, sidewalks, and boardwalks.

Multi-use paved path adjacent to railroad tracks

Two way cycle track, separated from the street via bollards. Planters or other decorative elements may be used in place of bollards (Image from NATCO)

MULTI-USE PAVED PATH

A multi-use paved path is a derivative from the Caltrans-defined Class I bikeway. A Class I bike path provides bicycle travel on a paved right-of-way, completely separated from any street or highway. A multi-use paved path permits a variety of users, in addition to bicyclists, including walkers, joggers, wheelchairs, and scooters.

Typical Design Elements may include:

- Paved surface of 8-12 feet wide or wider if ROW exists and/or high use is anticipated
- Center-lane striping
- Separation from adjacent roadways by at least twelve feet (12') where feasible
- Safety fence separating inner trail edge from rail line (e.g. 54" minimum post and wire) as needed
- Lighting fixtures
- Use of noninvasive ornamental barrier plants as a buffer or to help soften fencing
- Provide clearly illustrated and properly located signage with informal, interpretive and regulatory messages
- Compliance with ADA requirements in trail design where possible
- Minimum 8' 6" setback from railroad centerline

Designated Class II bike lane

DESIGNATED BICYCLE LANE (CLASS II)

Designated bicycle lanes are synonymous with Caltrans defined Class II bike lanes. Often referred to as a "bike lane", an on-street bike lane provides a striped and stenciled lane for one-way travel on a street or highway.

Typical design elements include:

- Paved surface 4 to 5 feet in width
- Lane striping
- Street markings indicating bike route or bike lane

Enhanced design elements Include:

- Colored bike lane
- Bike box

Class II bike lane (Image from NATCO)

A bike box , bright green rectangle painted onto asphalt at intersections and reserved exclusively for bikes, is a possible treatments. (Image from NATCO)

Class II painted bike lane - area in green (Image from NATCO)

Class III bike route sharrow pavement markings (Image from NATCO)

Class III bike route sharrow in Santa Cruz

A sharrow reminds drivers to share the road with bicyclists, while also informing bicyclists to make use of the full lane and position themselves away from vehicle doors.

On-street bike route with sharrows

ON-STREET BIKE ROUTE (CLASS III)

On-street bike routes are synonymous with Caltrans-defined Class III bike routes. Generally referred to as a "bike route", an on-street bike route provides for shared use with motor vehicle traffic and is identified only by signing. Optional shared roadway bicycle marking pavement stencils are also available for use on Class III bike routes.

SHARROWS (CLASS III)

It is important to note that bicycles are permitted on all roads in the State of California except where specifically prohibited. In order to optimize vehicle and bicycle user understanding, a marking referred to as a "sharrow" may be used. Sharrow refers to shared lane pavement marking. This marking is placed in the center of a travel lane to indicate that a bicyclist may use the full lane. The sharrow symbol consists of a bicycle symbol with two chevron markings above the bicycle. The best practice is to use a sharrow in conjunction with a "Bikes May Use Full Lane" sign.

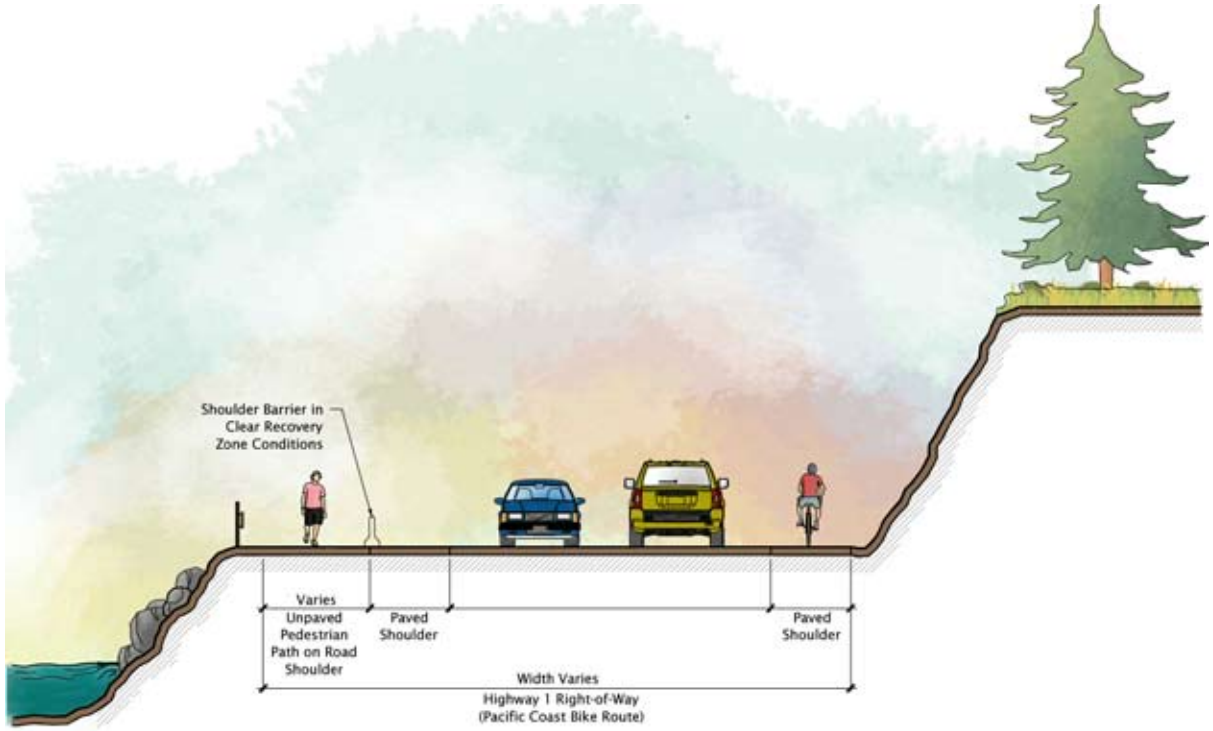
Typical design elements include:

- Shared lane with vehicles
- Pavement markings indicating route
- Pole signage indicating route

UNPAVED TRAIL SURFACE

Unpaved trail surfaces are located in the remote areas of the corridor including the northern most portion of the northern reach and the southern most portion of the Watsonville Reach. Unpaved trails are five to six feet wide through steep terrain and sensitive areas. To keep the trail as maintenance free as possible, these trails are designed to avoid exceeding grades greater than 12% when possible. Unpaved trails may require some hand tooled segments with drainage crossings, blending with the site character and slope as much as possible.

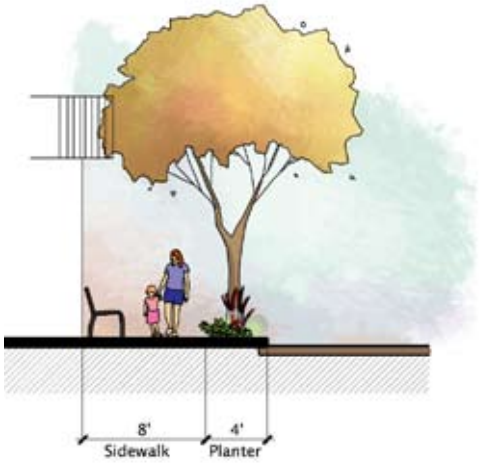
Unpaved trails may also be provided adjacent to a paved surface where right-of-way permits.



Unpaved trail on coastal bluff

Improved unpaved trail surface

Unpaved trail surface with trail seating



SIDEWALKS

Sidewalks and walkways enhance the walkability of an area. Sidewalk design should incorporate an appropriate walkway width, safety lighting, pleasant walking surface texture, benches and a landscaped separation of pedestrian and vehicular traffic to create a pleasurable walking experience. Sidewalk width is regulated by the implementing entity. Typically, sidewalks vary between four feet wide (4') and ten feet wide (10') depending on available right-of-way and adjacent land use.

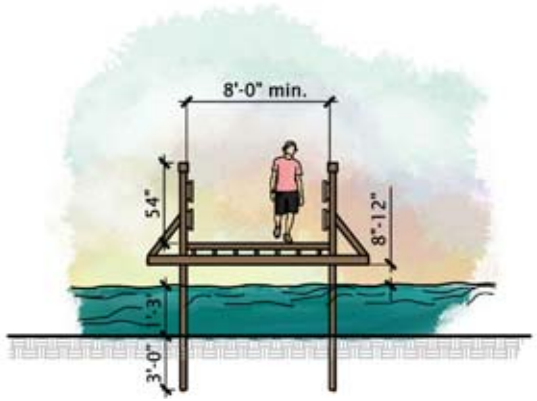
BOARDWALKS

Boardwalks are used to span unavoidable wet areas, sensitive resource areas or depressions. Boardwalks should be considered for Segment 17 where wetland and sensitive habitat areas are located. They also can be used to provide trail in areas where grading and filling might harm tree roots or create trail surfaces that wildlife such as amphibians will not cross. Footings vary depending on soil conditions. Plastic lumber is more expensive than wood but very long-lasting for deck boards. Its heavier weight can help avoid floating in sites that flood and the pronounced texture can reduce slippery surfaces.

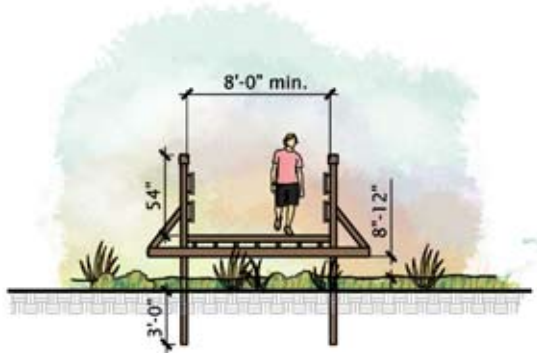
Wood surfaces in shaded or moist sites may become slick or even grow moss. This can be managed by attaching 1/2" hardware cloth (wire mesh), especially where boardwalks follow creek grade. Fasten with 1 1/2" heavy-duty staples approximately 8 - 12" apart. Upper side of mesh should have wires perpendicular to direction of travel. Ends of hardware cloth should be tucked between deck boards or lapped over sides and stapled every 4 - 6". Paint with sand texture may also help, depending on site conditions. An annual cleaning (after autumn leaves fall) is recommended. A kick rail is particularly important along accessible trails where it helps people using canes or wheelchairs stay on the structure.

Boardwalk with bicyclist and fencing

Boardwalk without fencing



Boardwalk over wetland area



Boardwalk over sensitive habitat area

Bicycle with surfboard attachment at Pleasure Point

Capitola train trestle

Pajaro River Bridge crossing

Santa Cruz Harbor Bridge

5.3 TRAIL CROSSINGS AND INTERSECTIONS

5.3.1 TRESTLE AND BRIDGE CROSSINGS

Trail segments crossing creeks or other streams and drainage may require a bridge or low water crossing, but these should be kept to a minimum and carefully designed to avoid habitat impacts. Approaches to bridges should be level and straight. Bridge widths should correspond to the trail tread width. On multi-use paths, crossings should be structurally suitable to support pickup truck maintenance vehicles. Bridges should be designed to accommodate all trail user groups. When bridge railings are required they should meet current Caltrans standards. Bridge footings should be constructed outside the top of the stream bank.

There are two main types of bridges: truss and beam. Truss bridges have a structure mostly above the deck and are capable of spanning great distances. A beam bridge has a lower profile, for use in areas where the emphasis is on the beauty of the landscape. The superstructure of the bridge (timber or steel beams) is under the deck surface. The most economical means to acquiring a bridge is through a pre-fabricated bridge manufacturer. Many pre-fabricated bridges can be customized to fit the architectural preferences of the owner agency.

The rail bridge and trestle crossings along the Coastal Rail Trail alignment will create the greatest physical and budgetary challenges to linking the trail from one end of the county to the other. The rail bridge span distances vary throughout the length of the Master Plan area with the greatest number of bridge crossings and longest bridge spans occurring primarily in the central and south reaches of the corridor. There are three bridge crossing treatments that would correlate with the short-, mid-, and long-term trail implementation efforts. The sequencing of the planned rail bridge crossings would also be dependent on alternate bike facility street routes until the various bridge projects are budgeted, designed, and constructed along with the trail segment that connects them to the system. Each bridge crossing will begin with coordination and design collaboration with the RTC as the owner of the rail right-of-way and with input from the operator. The following bridge crossing treatment types describe three possible design concepts for existing railroad bridge and trestle crossings. Section 4 segment maps identify each crossing and the recommended type of bridge.

RAIL BRIDGE REPLACEMENT – TYPE 1 CROSSING

The Type 1 trail bridge crossing will coincide with long-term rail bridge replacement efforts. Following the engineering evaluation of each rail bridge throughout the corridor, any rail bridge slated for replacement should be considered for a redesign that includes the addition of multi-use path facilities to the bridge deck. The minimum width for the multi-use path should include a minimum 8-ft wide paved trail tread with 2-ft shoulders on each side, for a total of 12 feet. However, Caltrans minimum requirement is a 10 foot wide structure. The trail platform could dually serve as a bridge maintenance access and planning for additional width to accommodate rail maintenance vehicles should be considered in the budgetary and design phases.

Illustration of Rail Bridge Replacement bridge

RETROFITTED RAIL BRIDGE – TYPE 2 CROSSING

Existing rail bridges that are considered structurally sound and evaluated to potentially accommodate a retrofit trail bridge, attached to the existing superstructure, would provide an alternate solution for a trail crossing where there is no room for a new, separate trail bridge. This design alternative can sometimes be the most costly and should be evaluated against bridge crossings Types 1 and 3 for cost, span, scheduling, connectivity efficiency, environmental impacts and clearances. The possibility of retrofitting a rail bridge is highly limited for this project.

The rail bridge over Highway 1 is a candidate for retrofitting

NEW MULTI-USE TRAIL BRIDGE – TYPE 3 CROSSING

It may not be feasibly possible to retrofit some rail bridge structures with a multi-use trail deck; or a rail bridge replacement is not considered for certain rail bridges. In these locations a more cost-effective solution may be to install a new, separate trail bridge parallel to the existing rail bridge structure. This scenario would include new abutments, a prefabricated bridge, and permitting for the new crossing.

Illustration of New Multi-use Trail Bridge Adjacent to Existing Bridge

Multi-use path bridge in San Clemente, CA

Multi-use path bridge in Whittier, CA

DRAINAGE WAY CHARACTERISTICS

The drainage way characteristics may dictate the structural design of the bridge. When crossing a channel subject to flooding, the bridge shall be designed to be above the 100-year flood level. When crossing channels not subject to flooding, it may still be desirable to determine whether the bridge's superstructure should be above or below the deck based on clearance underneath.

BRIDGE LENGTH

Wood bridges that clear spans of over 50 feet are generally difficult without specially fabricated structural members or mid-span piers. Steel beam bridges can span greater distances, but the beam depth will increase with proportion to the span. Steel truss bridges can span up to 200 feet without additional piers.

BRIDGE PLACEMENT

Bridges shall be aligned along the path to avoid perpendicular or sharp turns at the bridge approach. If the bridge is at the bottom of a grade exceeding 4 percent, a short, flat transition area is needed to meet the bridge deck grade.

LIVE LOAD

Bridges which will allow for small vehicles and machinery for maintenance and emergency purposes should be designed to carry a minimum eight-ton live load.

BRIDGE AESTHETICS

The proposed bridge materials should reinforce the theme of the local area, and may include steel and wood with stone masonry abutments.

RAIL TRACK REALIGNMENT/RELOCATION

Realignment/relocation of rail tracks is necessary to complete the preferred alignment of Segment 10 - Live Oak - Jade Street Park. The rail operator (Santa Cruz and Monterey Bay Railway) is aware of and supportive of the recommended relocation of the rail tracks. Fees for rail track realignment/relocation are approximately $1,000,000 per mile.

5.3.2 ROADWAY CROSSINGS

Trails should cross public streets at intersections, in the same place a crosswalk would normally be placed. If there is no intersection within 200 feet of the proposed trail crossing, an at-grade trail crossing, including median break, may be considered. Implementing entity and/or public works departments will make the determination as to whether a trail crossing at a roadway can be safely achieved. Traffic volumes, times of day, travel speed, sight lines to and at the intersection, and problems unique to the crossing or intersections will be used in making the determination.

If an intersection with pedestrian crossing exists within 200 feet of where a trail is proposed, pavement, barriers, and landscape features with appropriate signage will be installed to guide trail users to the intersection.

A total of eleven (11) types of treatments were developed and considered for the crossing locations along the Coastal Rail Trail corridor. These improvements would be installed at railroad crossings and street intersections or mid-block crossings in the vicinity of each crossing. A summary of the Crossing Recommendations can be found in Appendix E. In some locations, a custom treatment will be necessary and may include unusual combinations of the standard treatments or an altogether unique treatment. The treatment types are listed in a hierarchy of the level of control and are followed by the number of occurrence instances in parenthesis:

- Type A: Railroad signal equipment – new signal or modification of existing (13)
- Type B: Traffic signal modification (1)
- Type C: Hawk traffic signal/pedestrian hybrid beacon (2)
- Type D: Active enhanced mid-block – Pedestrian-activated warning system (4)
- Type E: Passive enhanced mid-block – Additions to the standard mid-block treatment (9)
- Type F: Standard mid-block – Signs and markings (6)
- Type G: Traffic calming measures – Raised medians, curb extensions, or bulb-outs (3)
- Type H: Connection facilities–Pedestrian walkways, intersection crosswalks, and/or bicycle markings (12)
- Type I: Rail crossing without railroad signal equipment (very low crossing volumes) (2)
- Type J: Standard private crossing – Typical controls include a combination stop sign/private crossing-no trespassing sign (35)
- Type K: No additional improvements or changes (9)

Bike and pedestrian mid-block crossing.

Right-of-way priority shall be granted to the highest traffic volume thoroughfare, whether it be a trail or road.

Figures 5.8 through 5.10 detail roadway crossing concepts that illustrate how the trail will interact with existing streets and with the rail tracks.

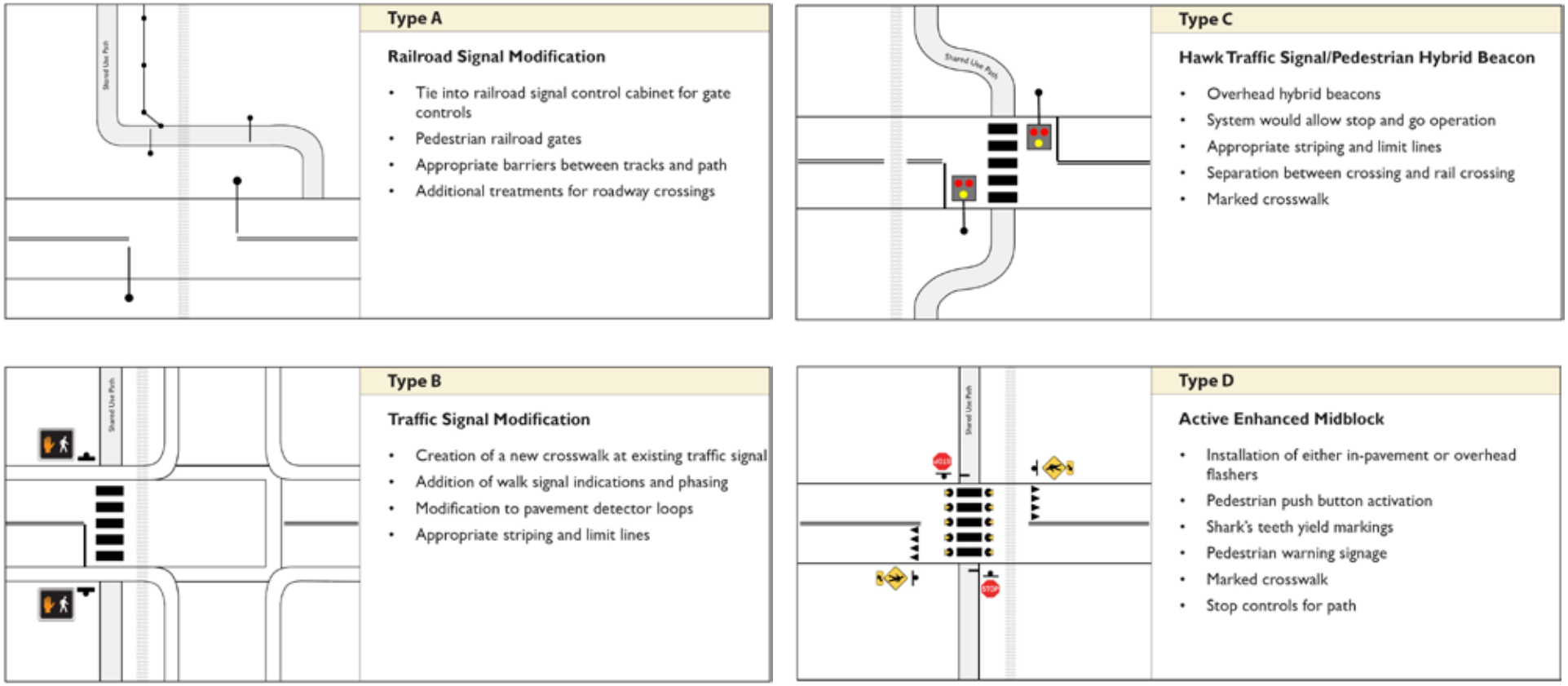
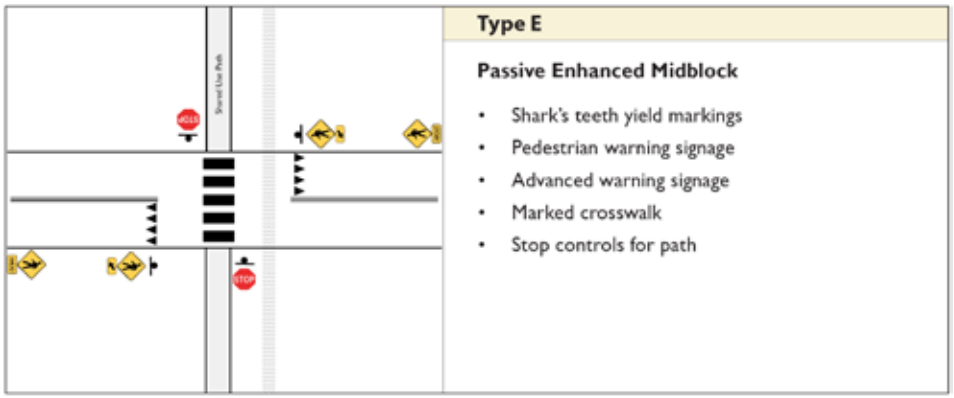


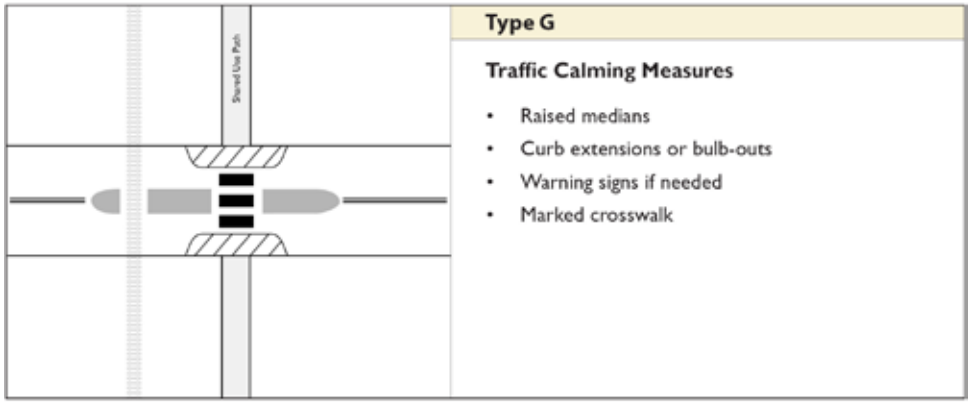
Figure 5-8 Detailed Roadway Crossing Concepts, Types A, B, C and D



Type E

Passive Enhanced Midblock

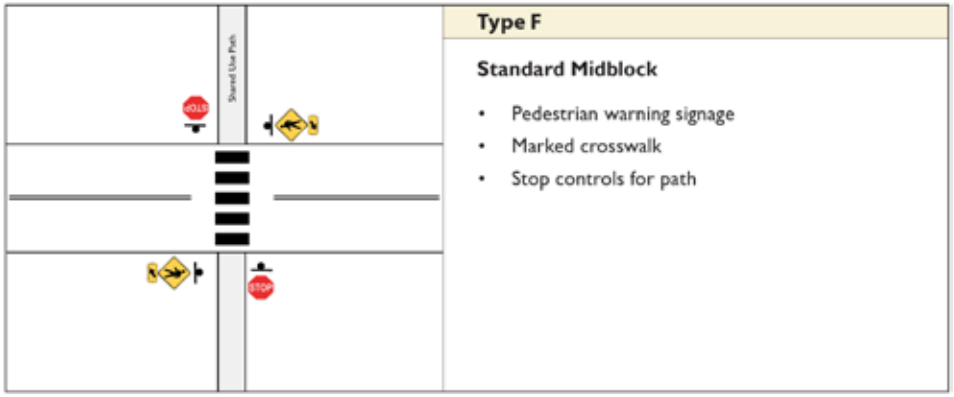
- Shark's teeth yield markings
- Pedestrian warning signage
- Advanced warning signage
- Marked crosswalk
- Stop controls for path



Type G

Traffic Calming Measures

- Raised medians
- Curb extensions or bulb-outs
- Warning signs if needed
- Marked crosswalk



Type F

Standard Midblock

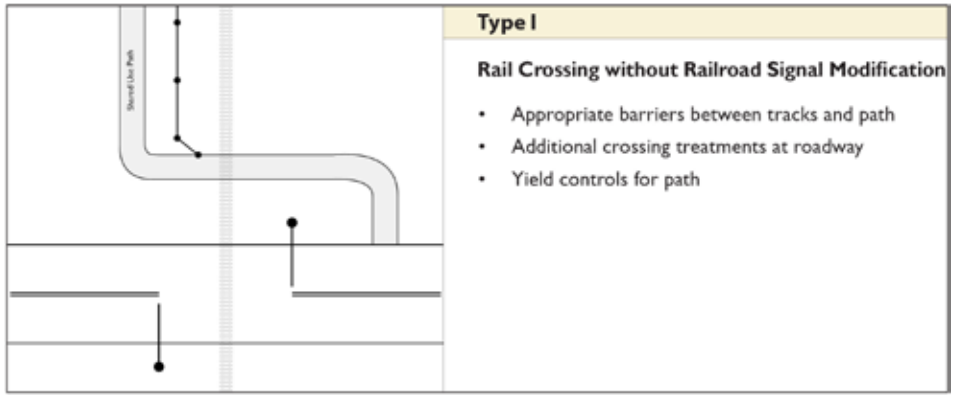
- Pedestrian warning signage
- Marked crosswalk
- Stop controls for path

Type H

Connection Facilities

- Redirection of path to existing crosswalk
- Additional bike lane or sharrow markings

Figure 5-9 Detailed Roadway Crossing Concepts, Types E, F, G and H



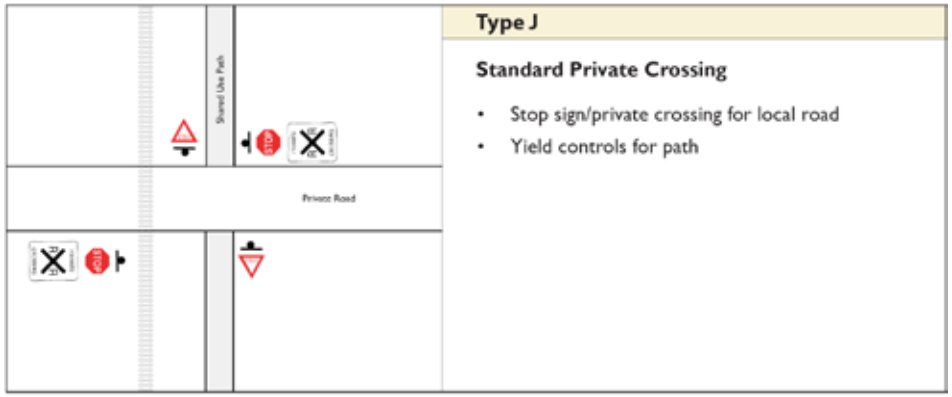


Figure 5-10 Detailed Roadway Crossing Concepts, Types I and J

5.4 CUSTOM CROSSING TREATMENTS

Twenty six (26) custom crossing treatments have been identified for the Coastal Rail Trail. Each custom treatment contains unique features not found in treatment types A-K in Section 5.4.2. Figures 5-14 to 5-38 represent the proposed custom treatment. Figures 5-11 to 5-13 illustrate the location of the crossings and the red dot symbols represent a custom crossing design.

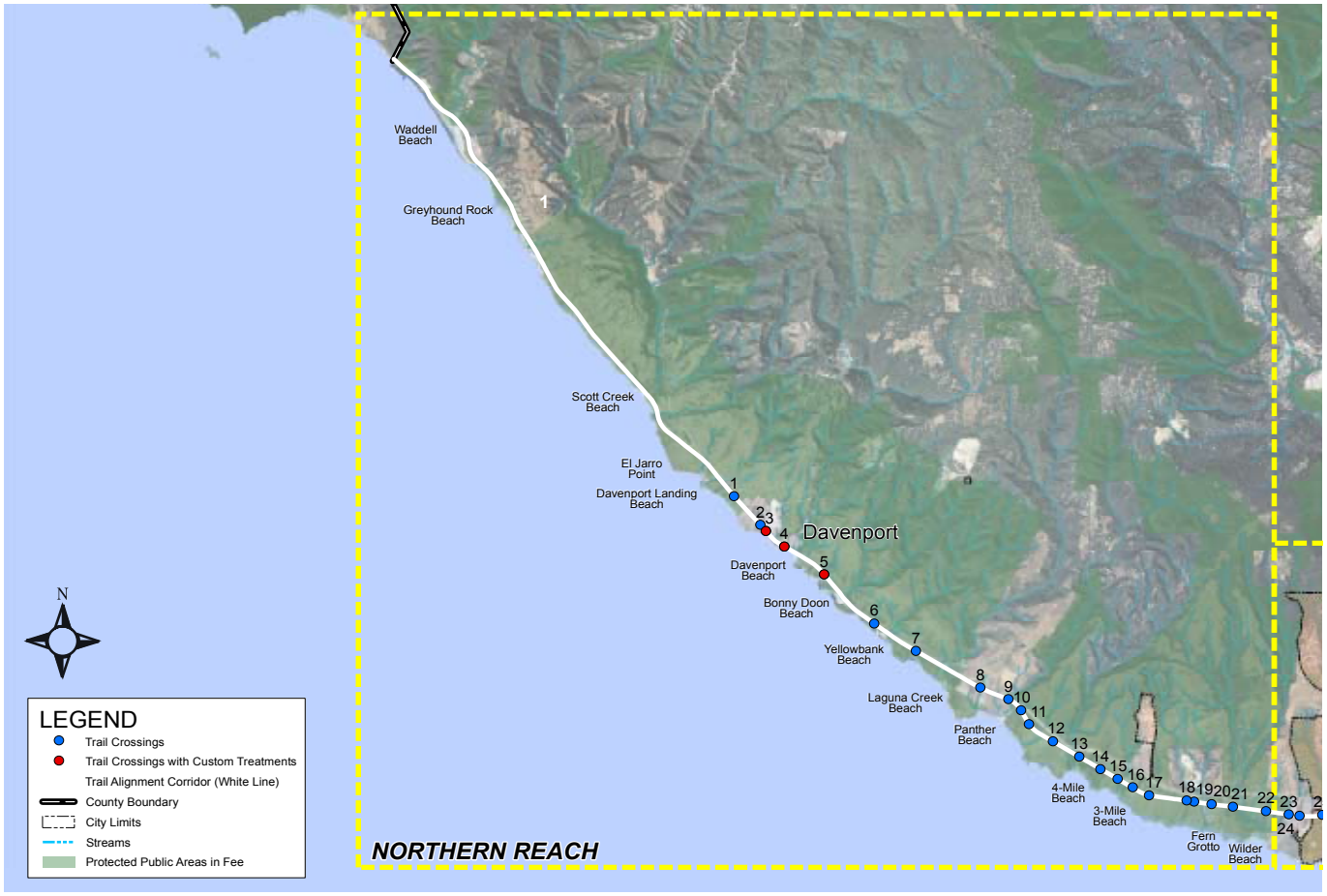


Figure 5-11 Crossing treatments in the Northern Reach

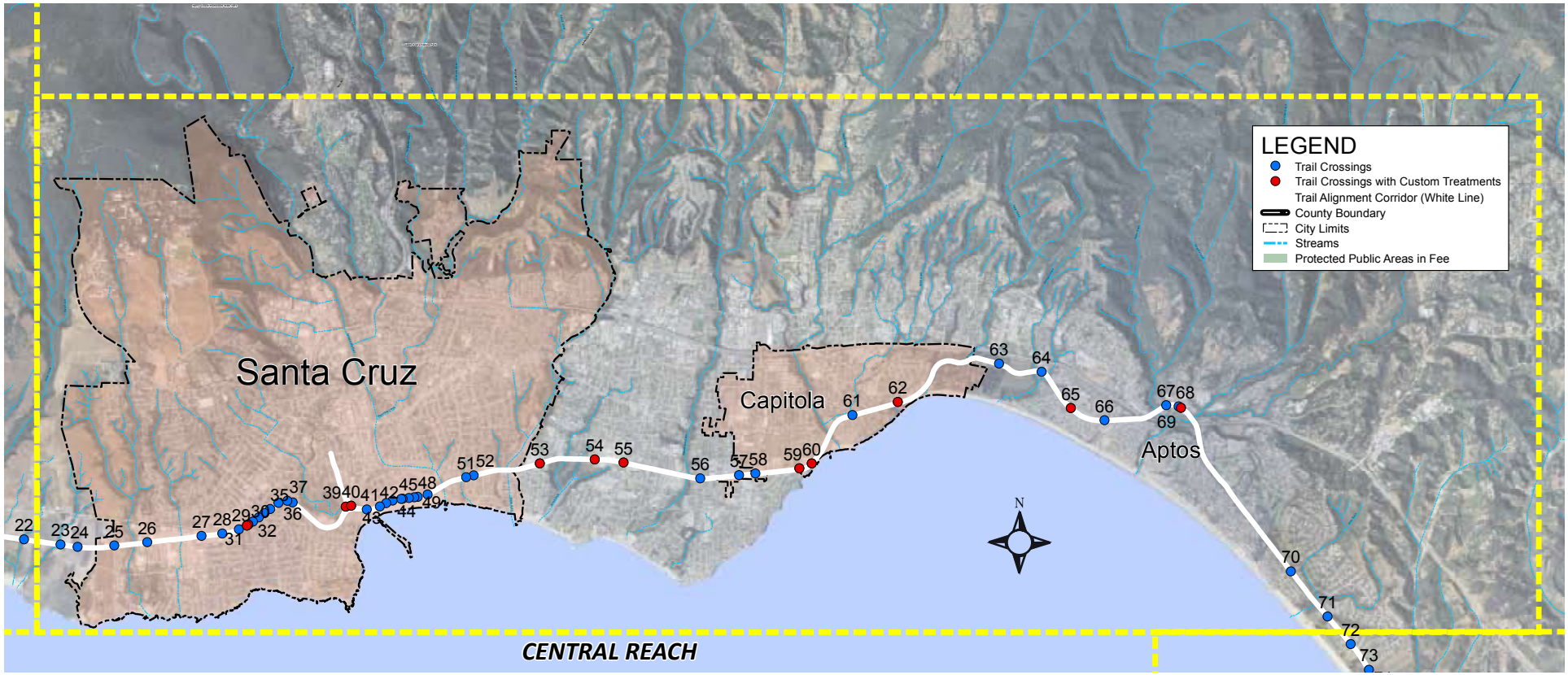


Figure 5-12 Crossing Treatments in the Central Reach

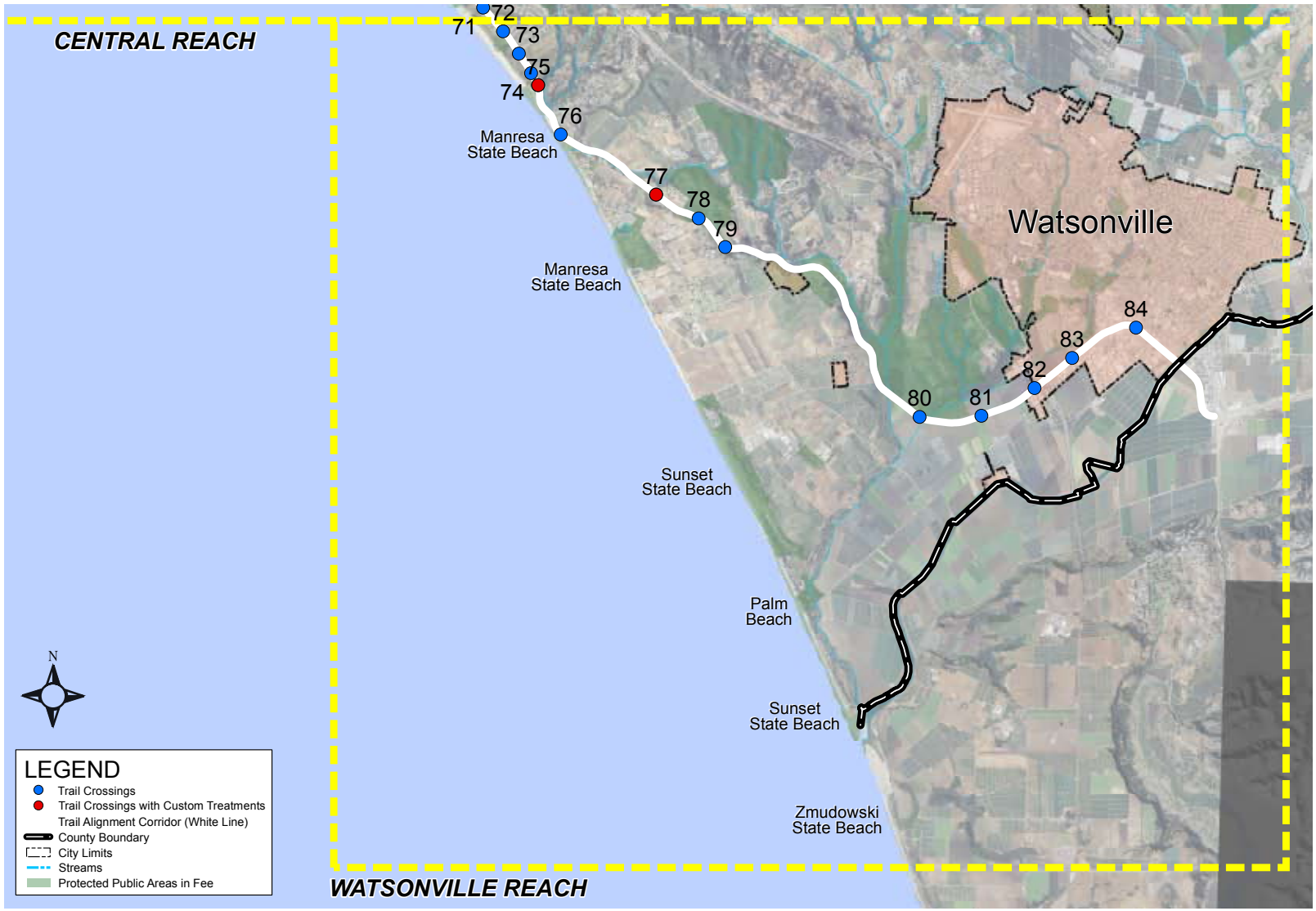


Figure 5-13 Crossing treatments in the Watsonville Reach

Figure 5-14 Crossing No. 3, State Route 1

Figure prepared by W-Trans

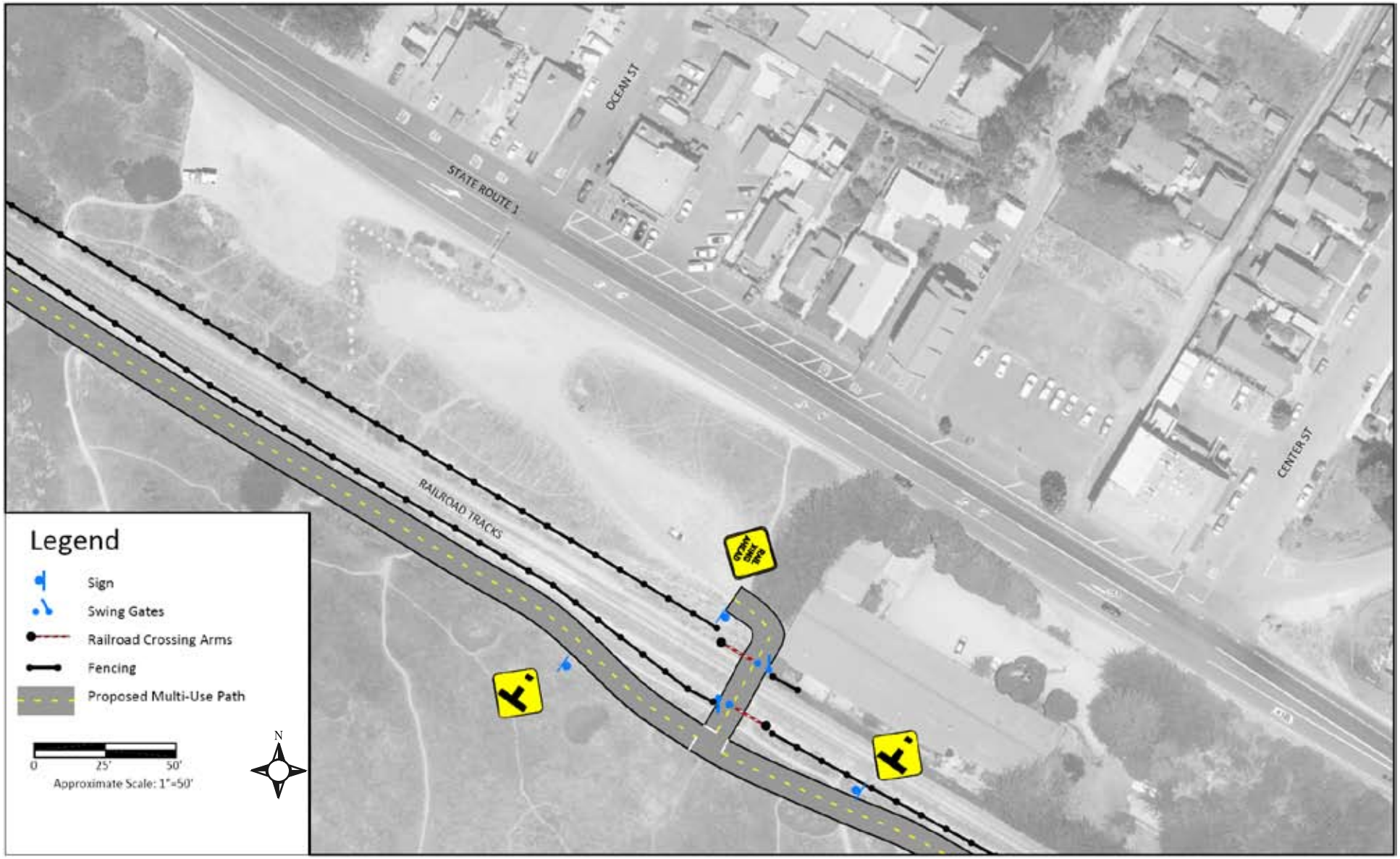


Figure 5-15 Crossing No. 4, Davenport Parking Lot

Figure prepared by W-Trans

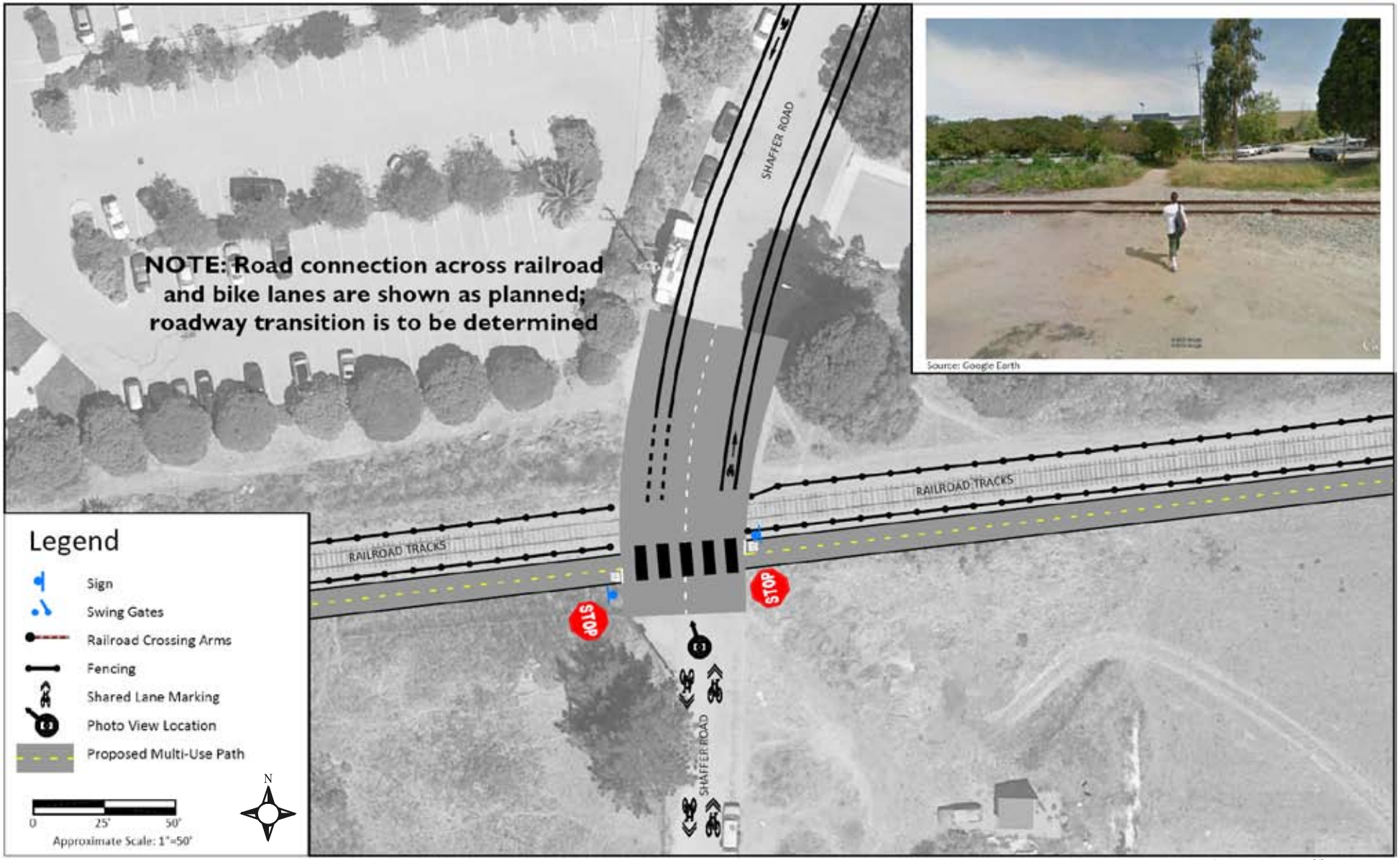


Figure 5-16 Crossing No. 25, Shaffer Road

Figure prepared by W-Trans

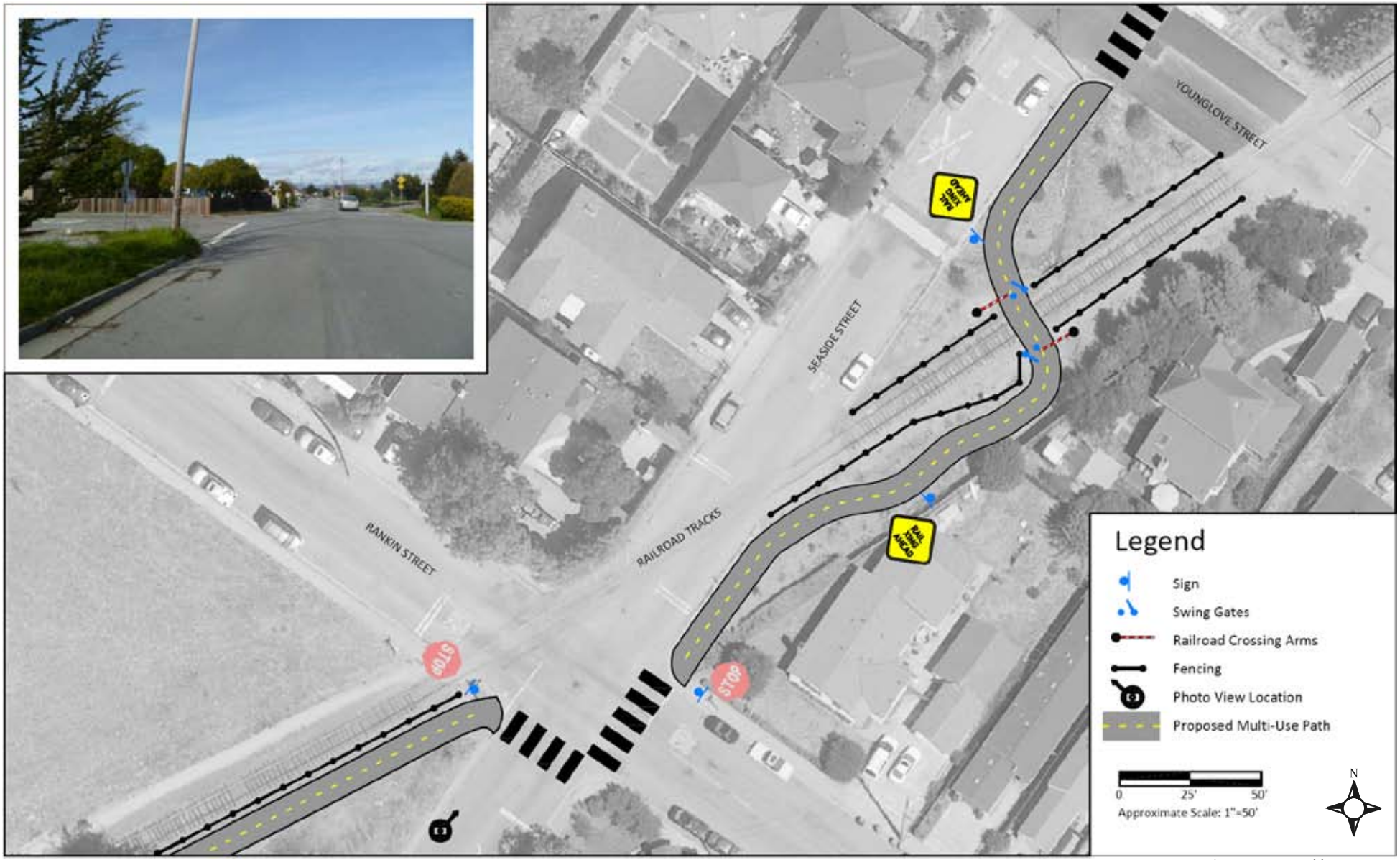


Figure 5-17 Crossing No. 30-31, Seaside Street and Rankin Street

Figure prepared by W-Trans

Figure 5-18 Crossing No. 32, Younglove Avenue

Figure prepared by W-Trans

Figure 5-19 Crossing No. 36, Lennox Street

Figure prepared by W-Trans

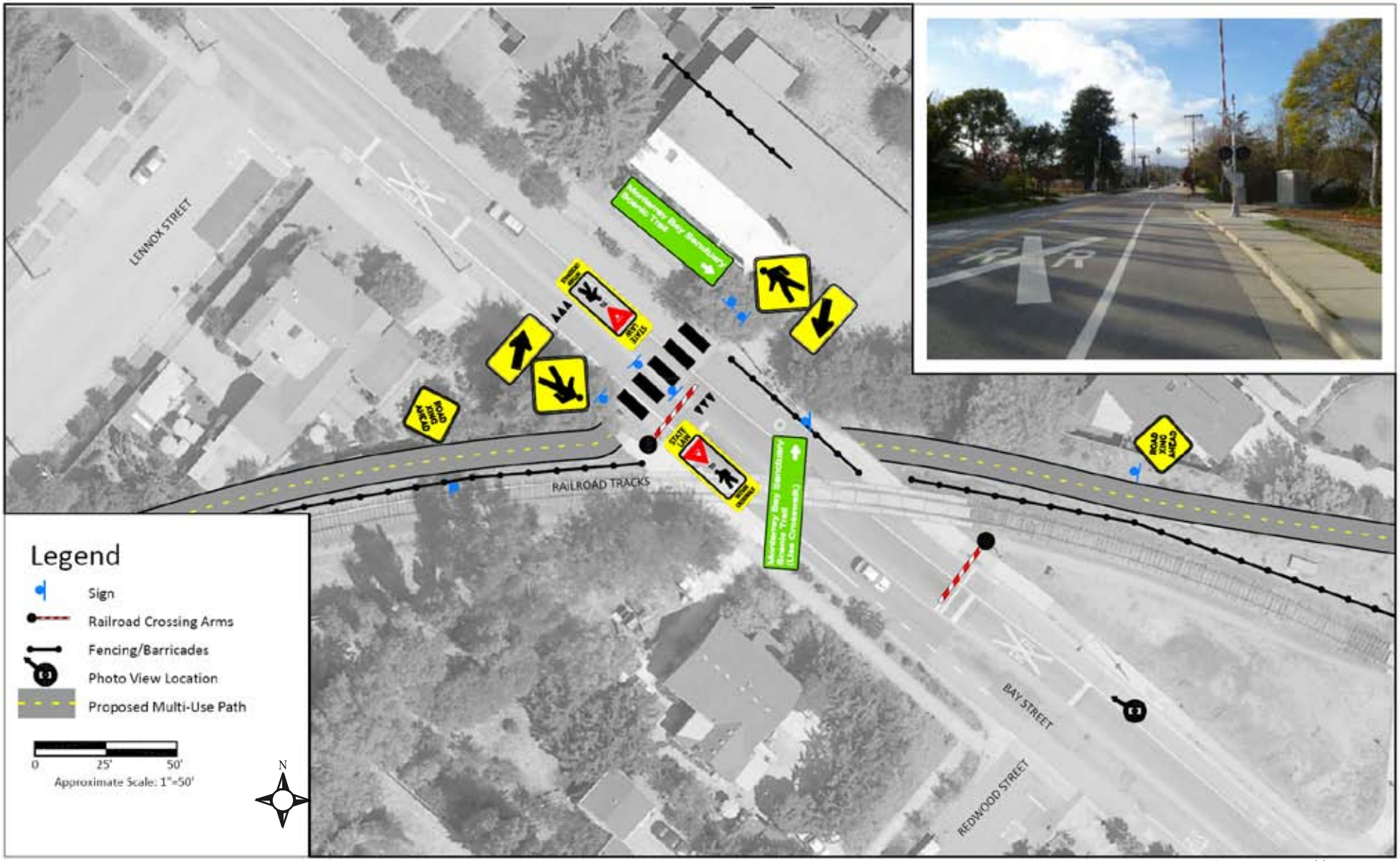


Figure 5-20 Crossing No. 37, Bay Street

Figure prepared by W-Trans

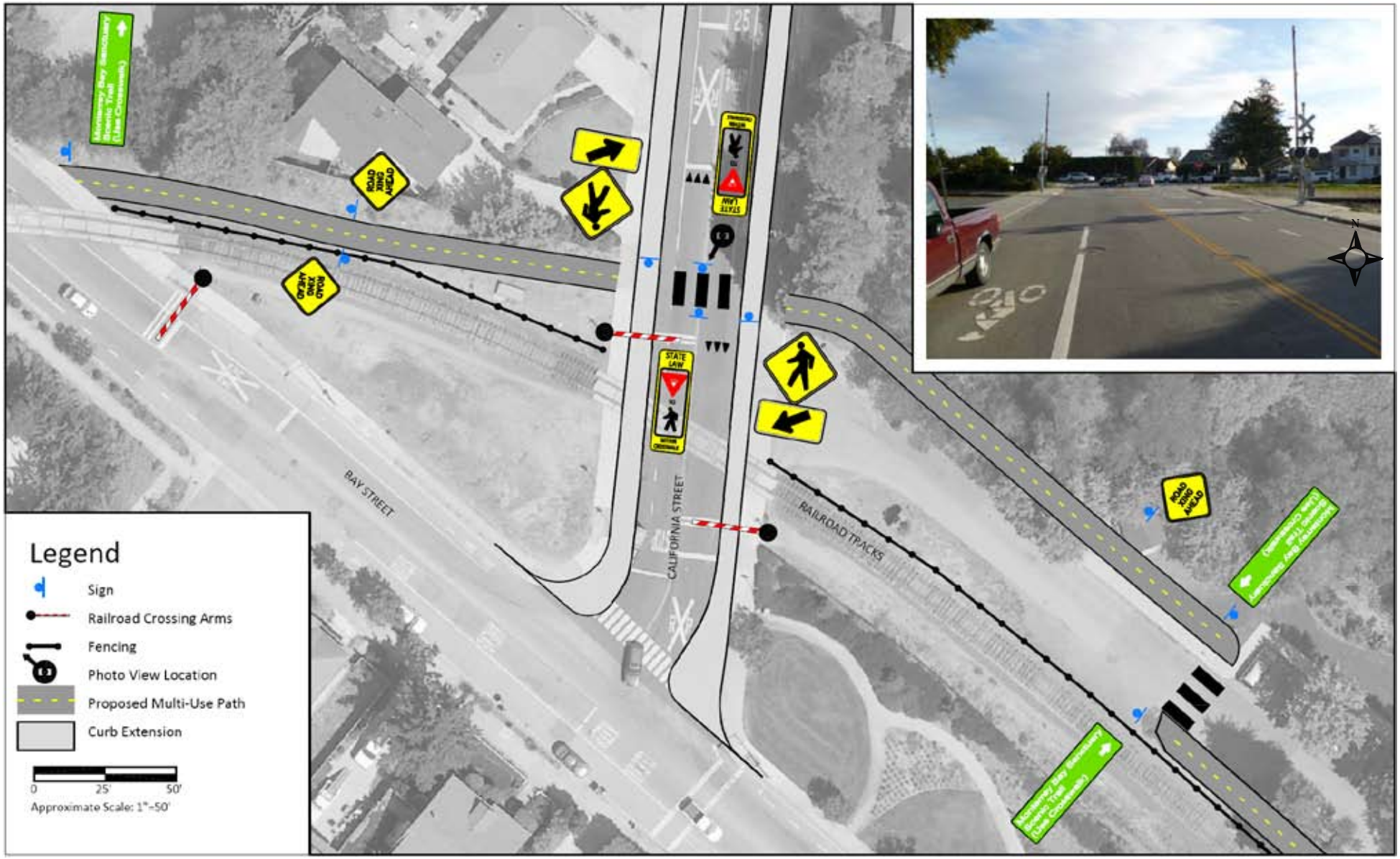


Figure 5-21 Crossing No. 38, California Street

Figure prepared by W-Trans

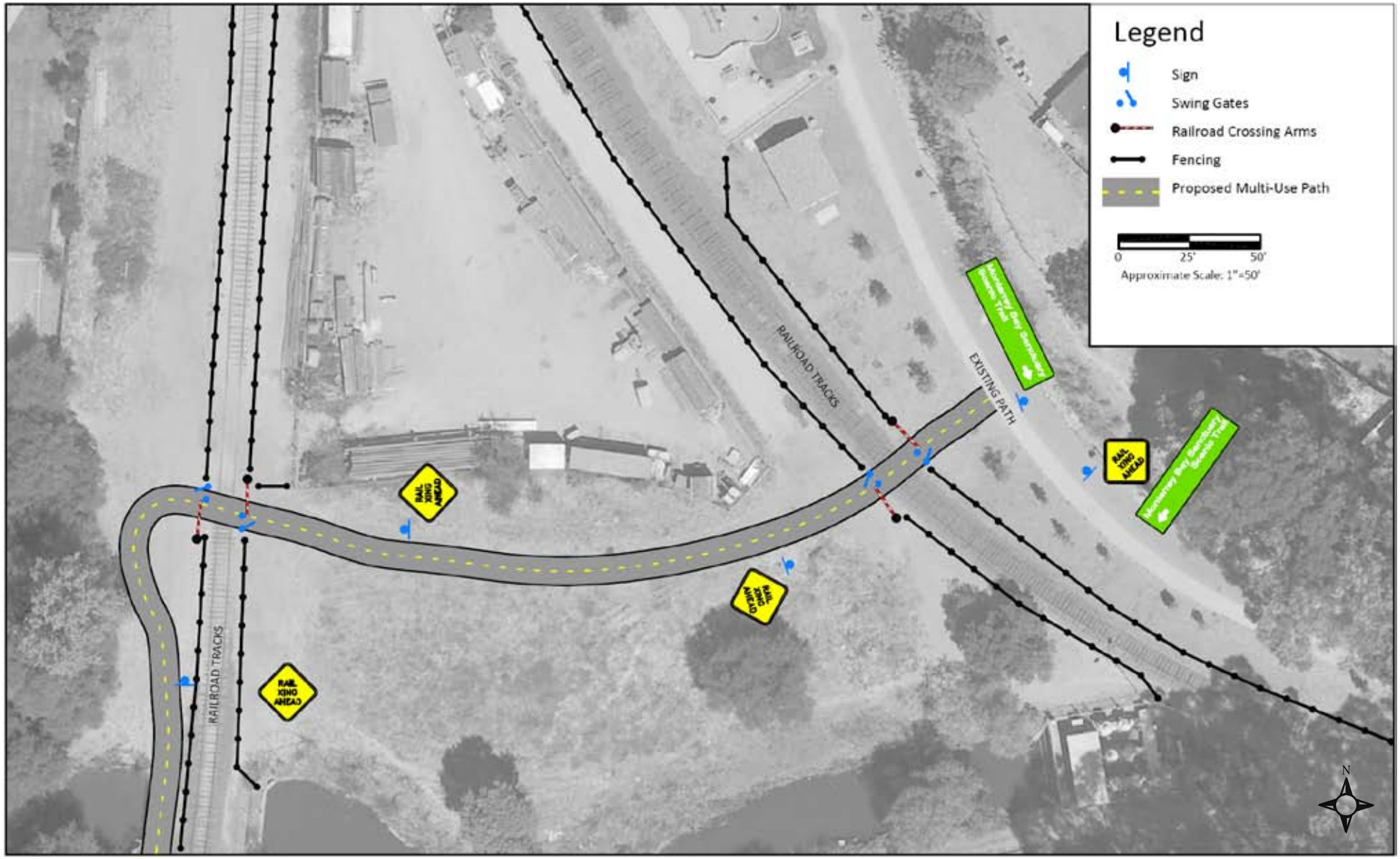


Figure 5-22 Crossing No. 39-40, Neary Lagoon Park

Figure prepared by W-Trans

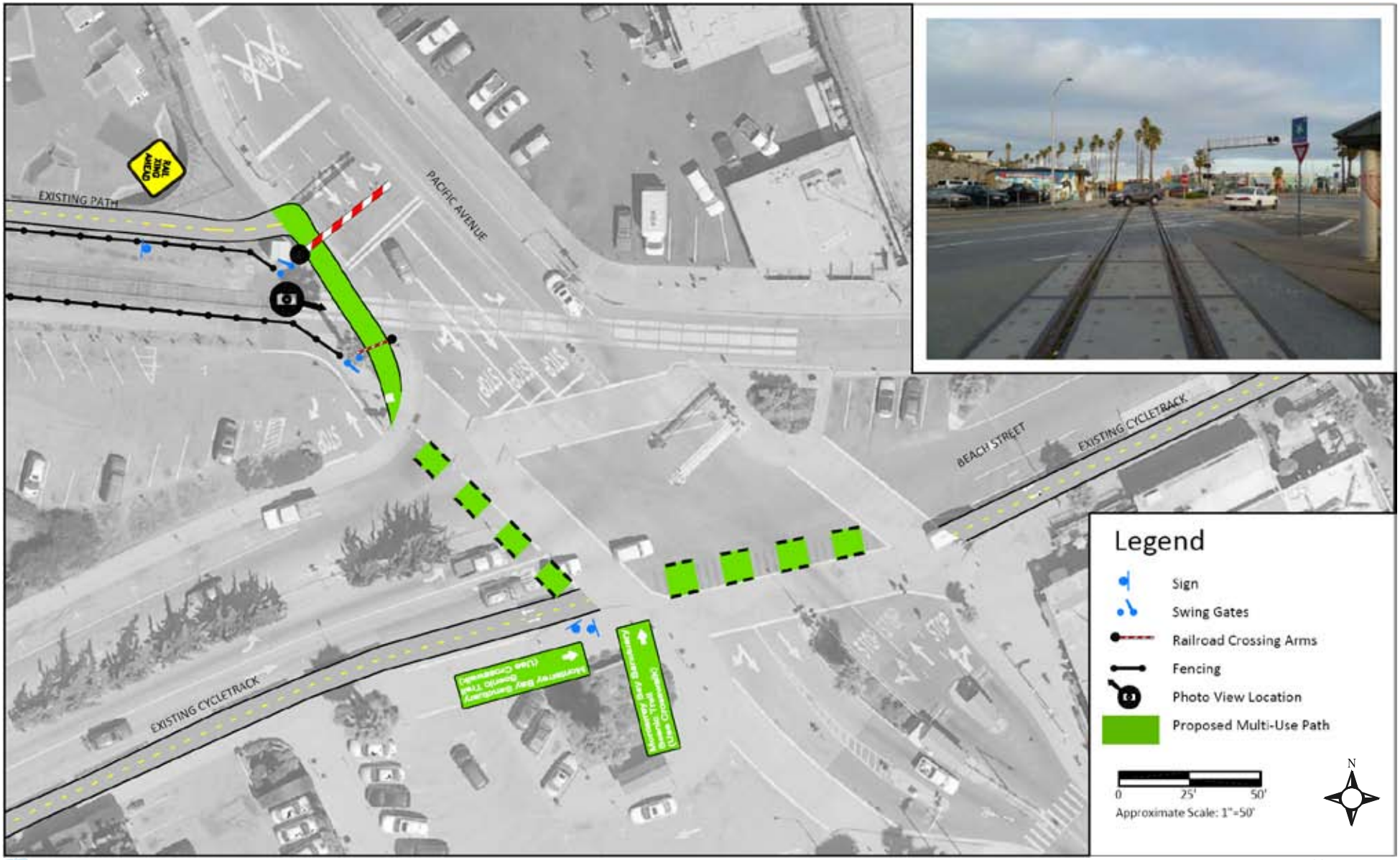


Figure 5-23 Crossing No. 41, Pacific Avenue - No Roundabout Option

Figure prepared by W-Trans

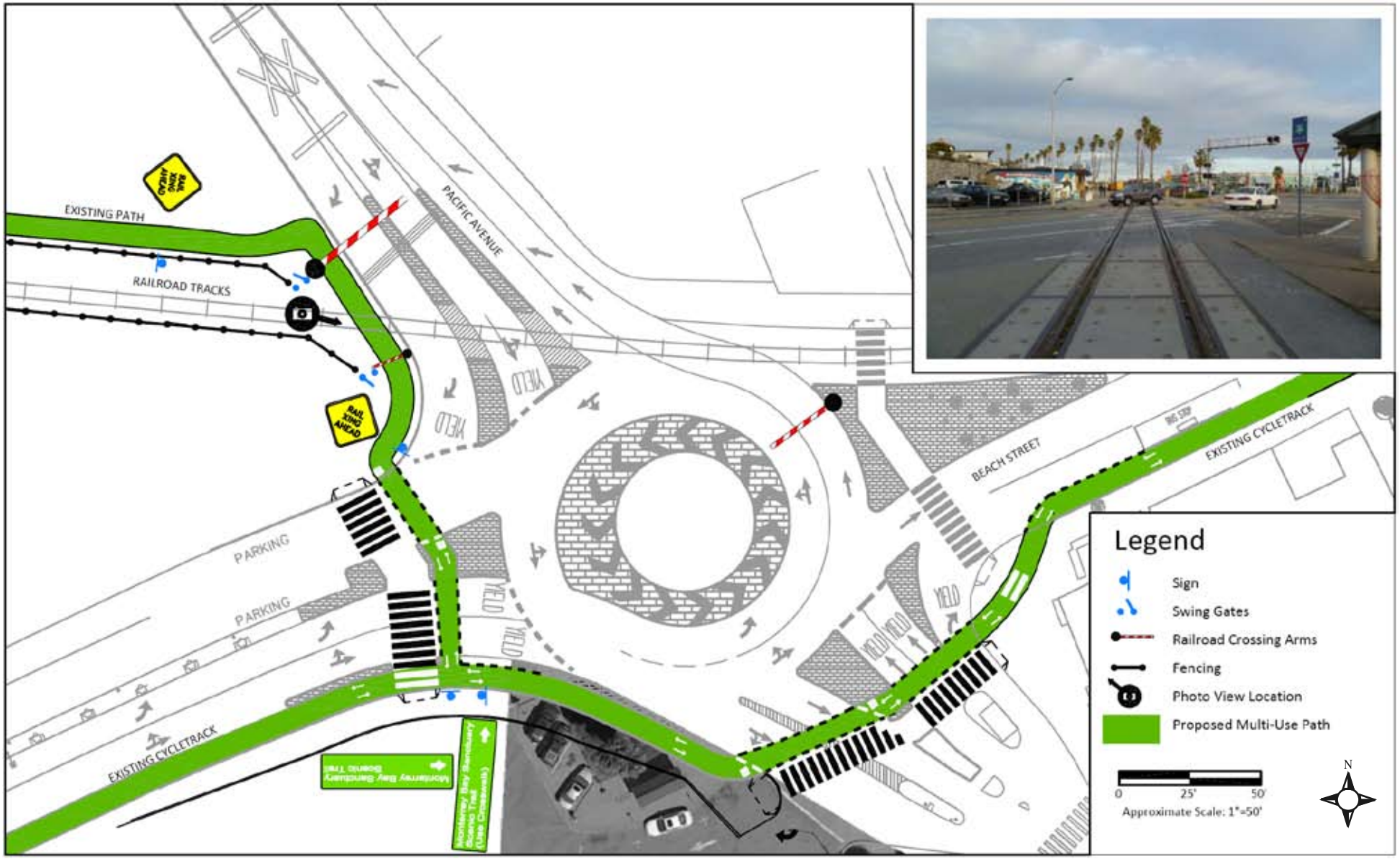


Figure 5-24 Crossing No. 41, Pacific Avenue

Figure prepared by W-Trans

Figure 5-25 Crossing No. 52, Seabright Avenue

Figure prepared by W-Trans

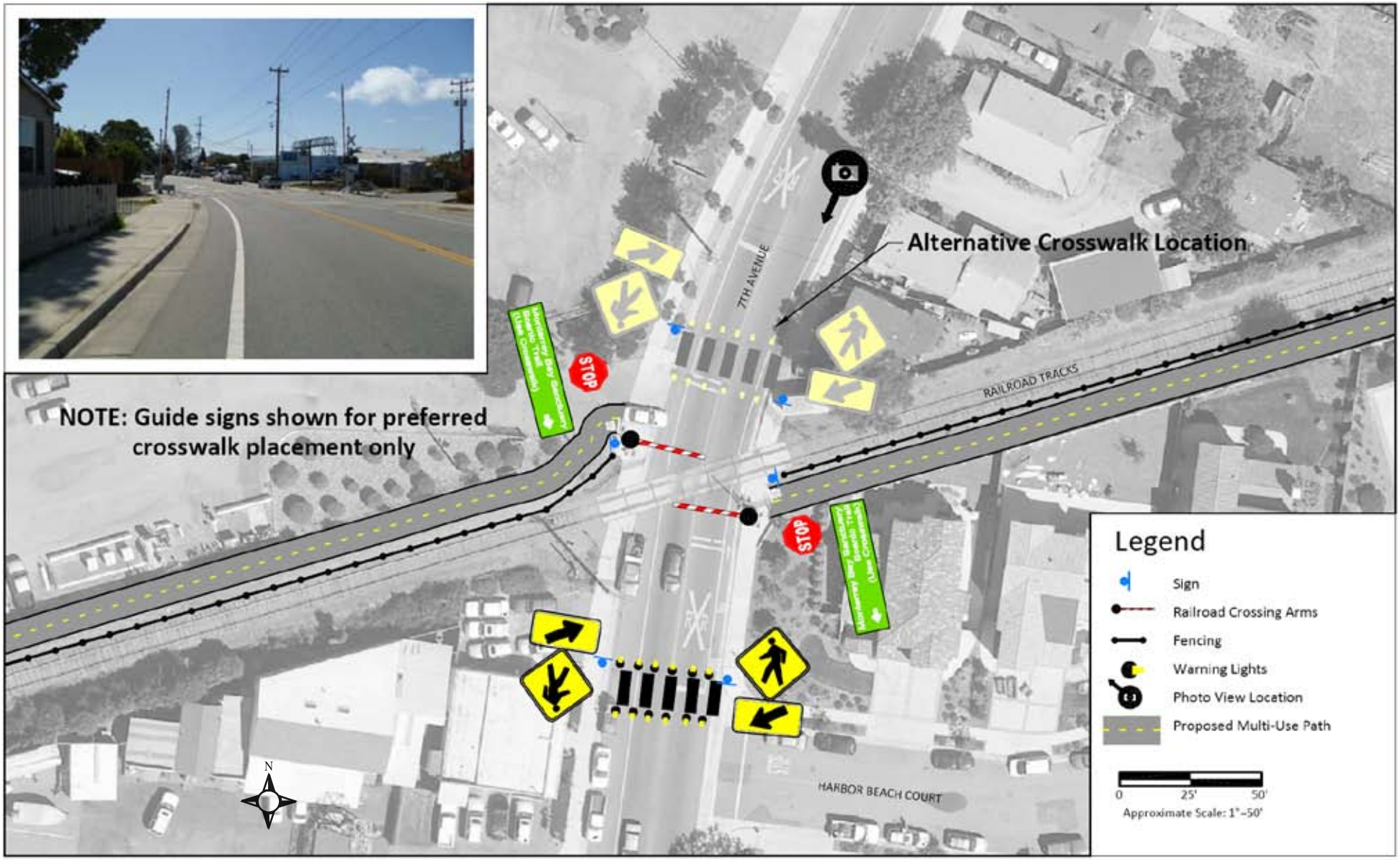


Figure 5-26 Crossing No. 53, 7th Avenue

Figure prepared by W-Trans

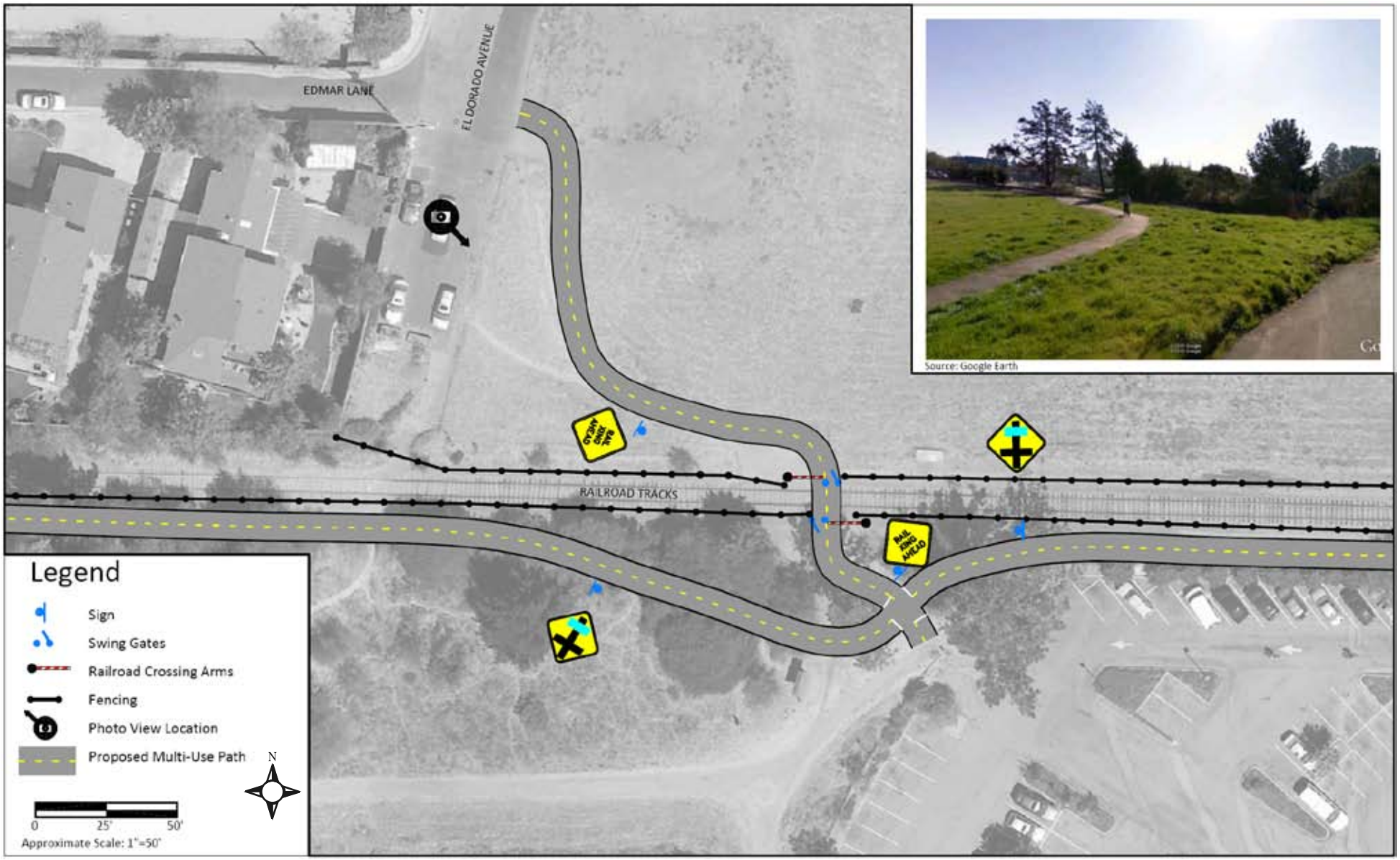


Figure 5-27 Crossing No. 54, El Dorado Avenue/Simkins Swim Center

Figure prepared by W-Trans

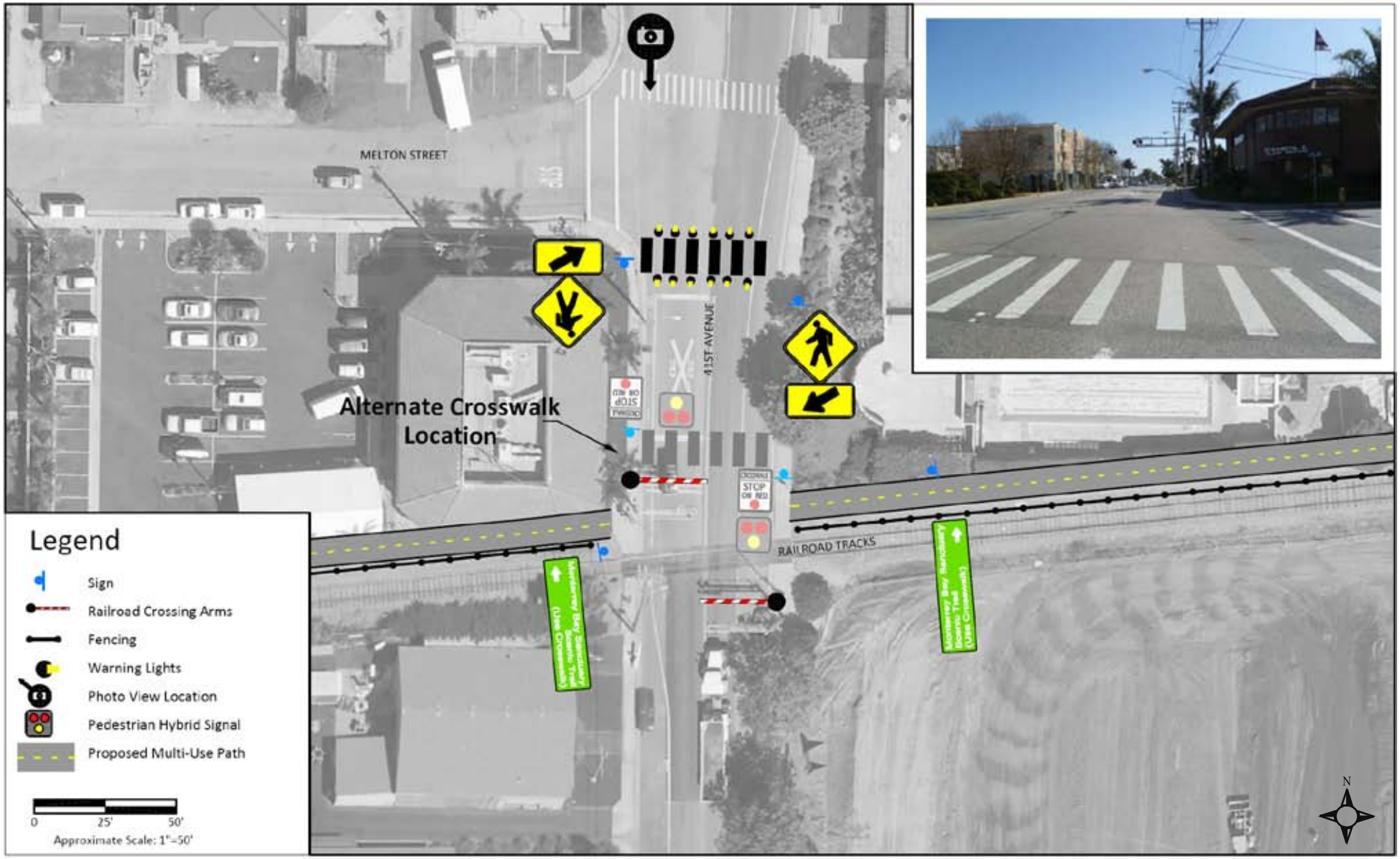


Figure 5-28 Crossing No. 58, 41st Avenue

Figure prepared by W-Trans

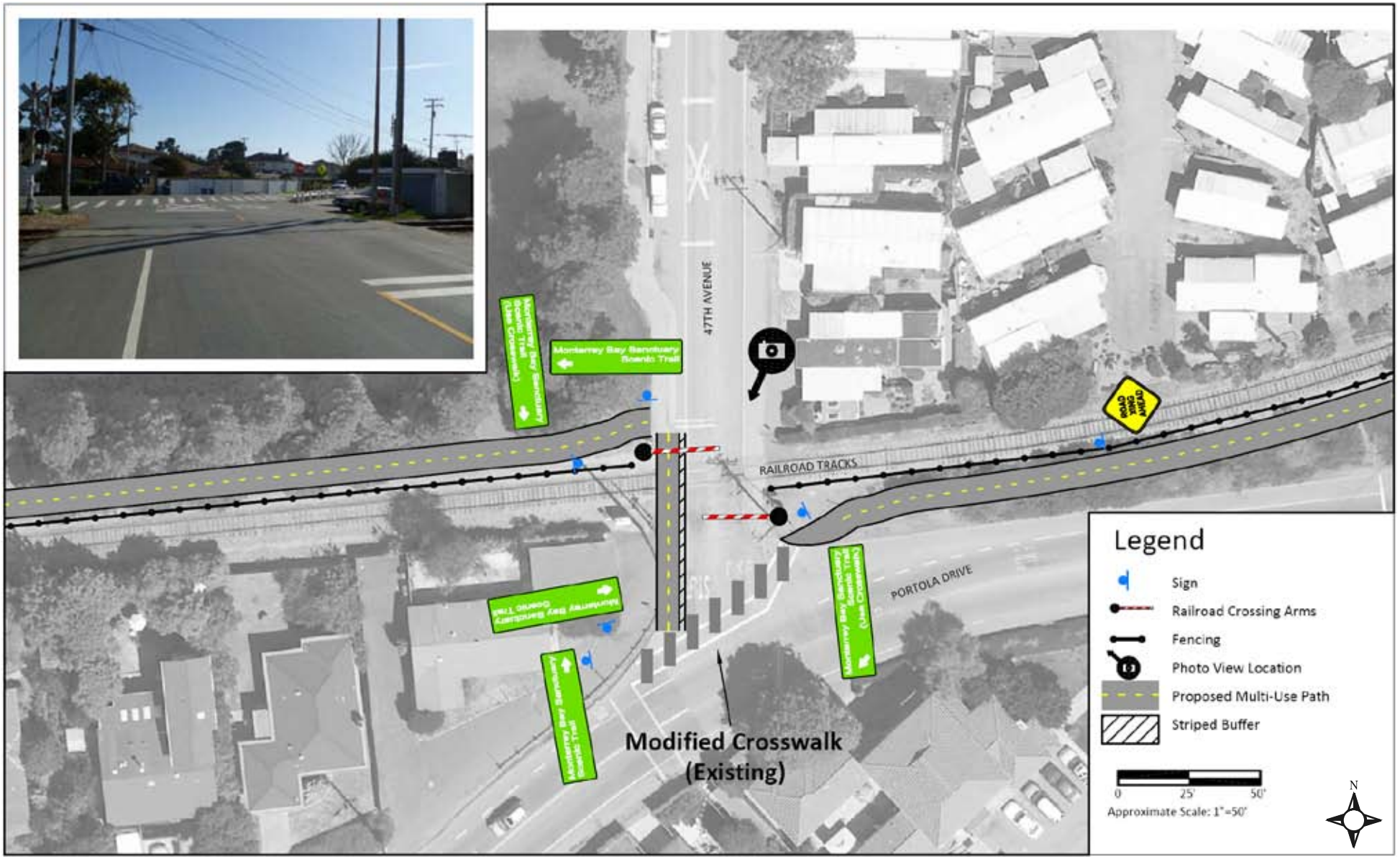


Figure 5-29 Crossing No. 59, 47th Avenue

Figure prepared by W-Trans

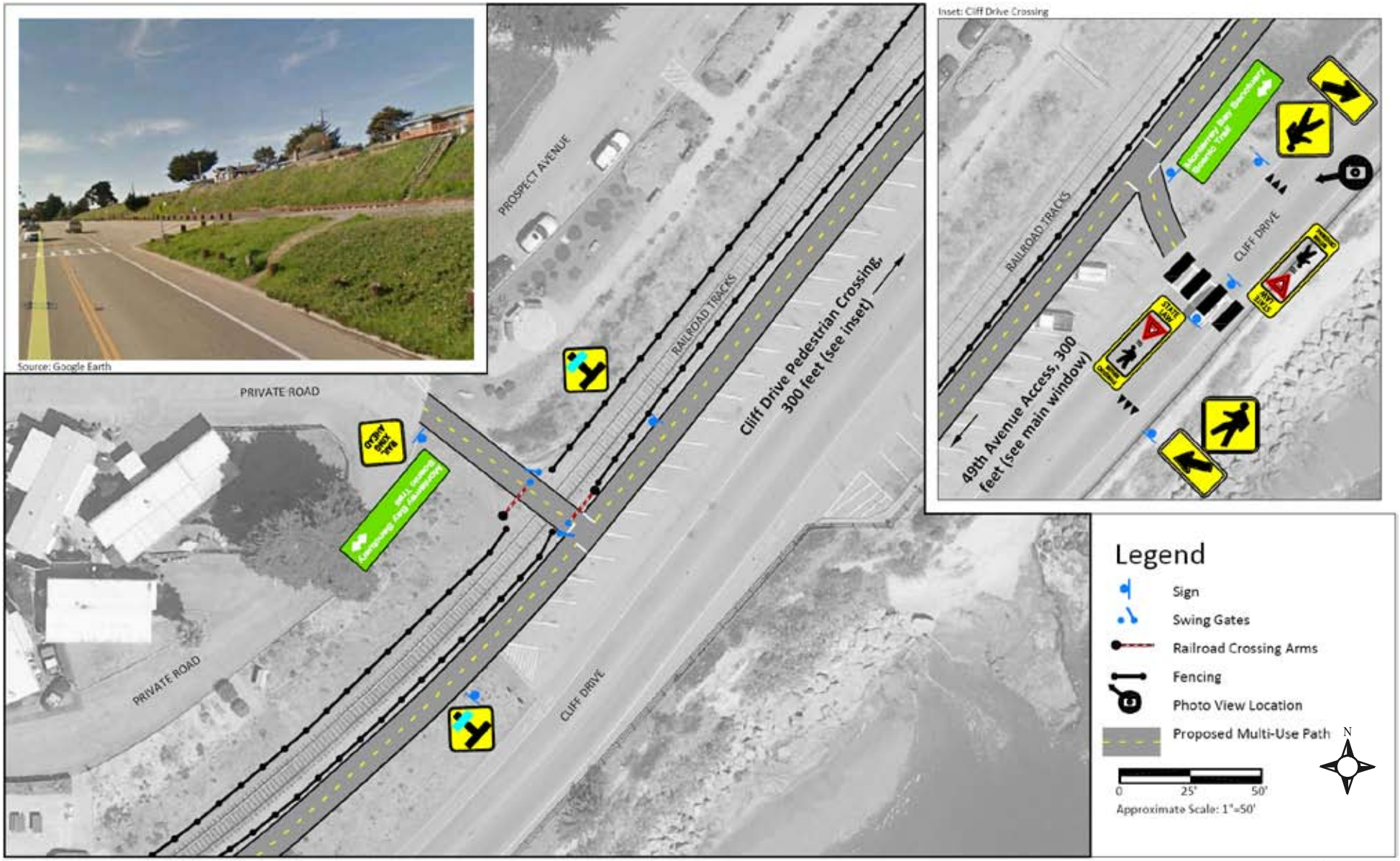


Figure 5-30 Crossing No. 60, 49th Avenue/Cliff Drive

Figure prepared by W-Trans

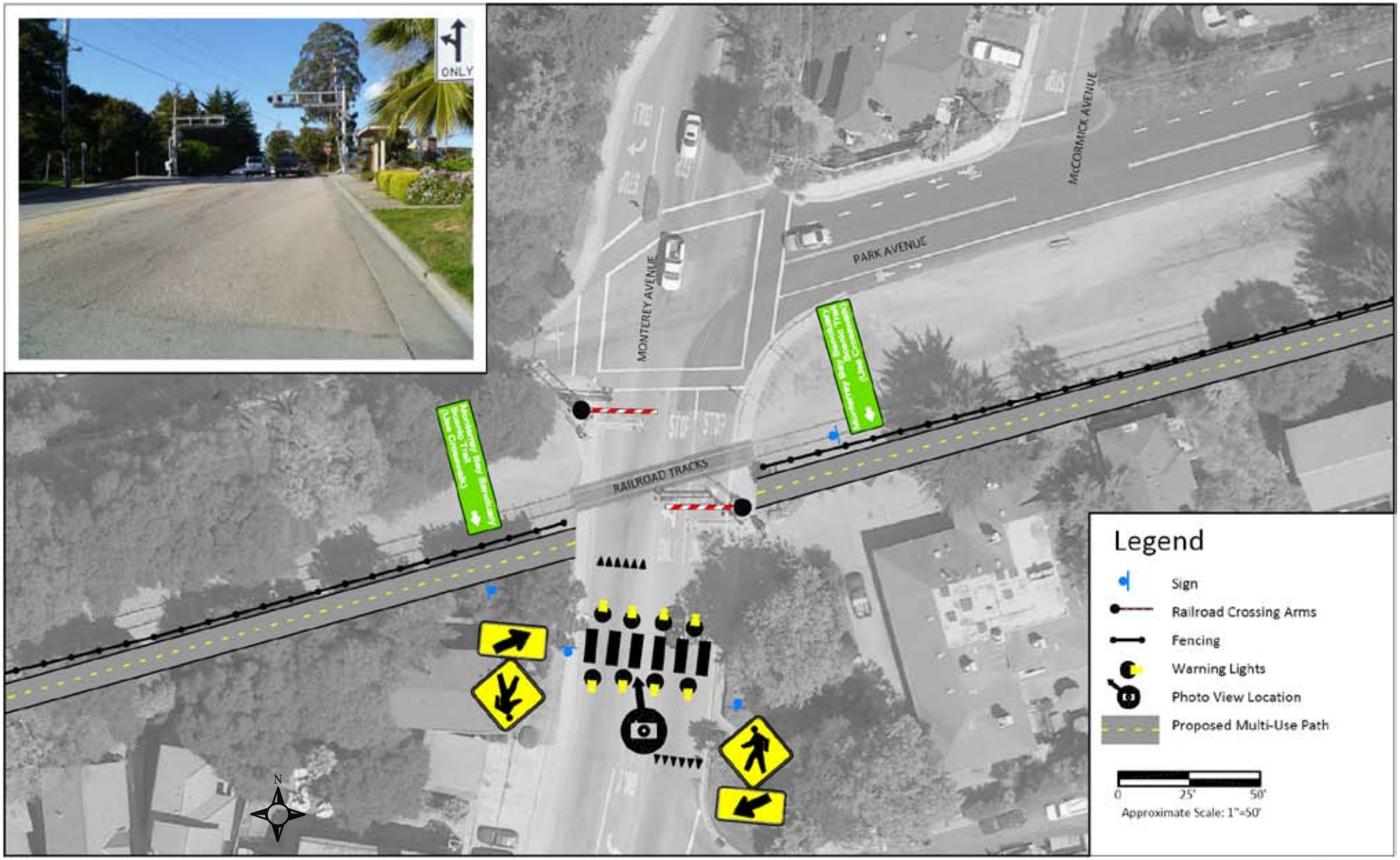


Figure 5-31 Crossing No. 61, Monterey Avenue

Figure prepared by W-Trans

Figure 5-32 Crossing No. 62, Grove Lane

Figure prepared by W-Trans

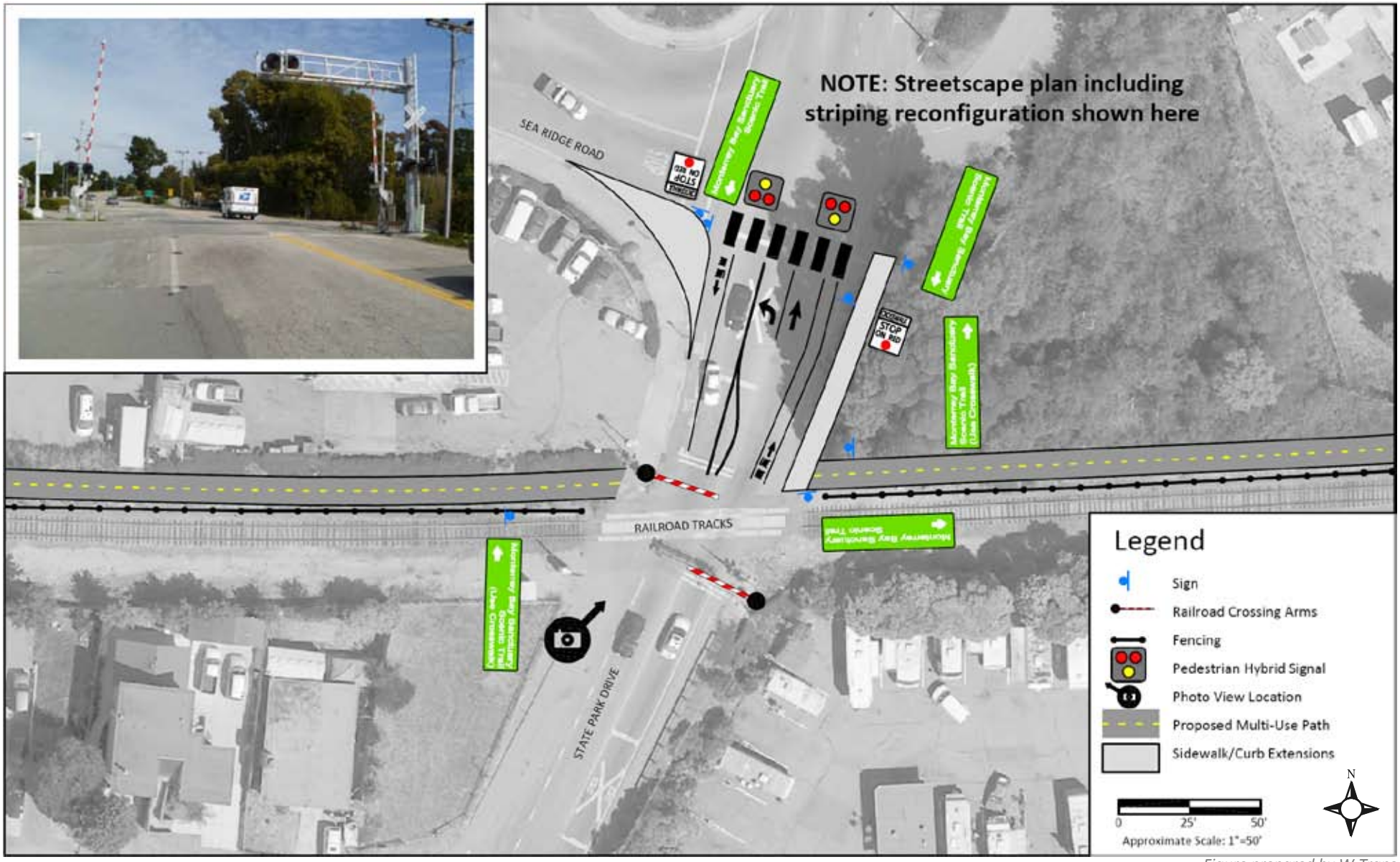


Figure 5-33 Crossing No. 66, State Park Drive

Figure prepared by W-Trans

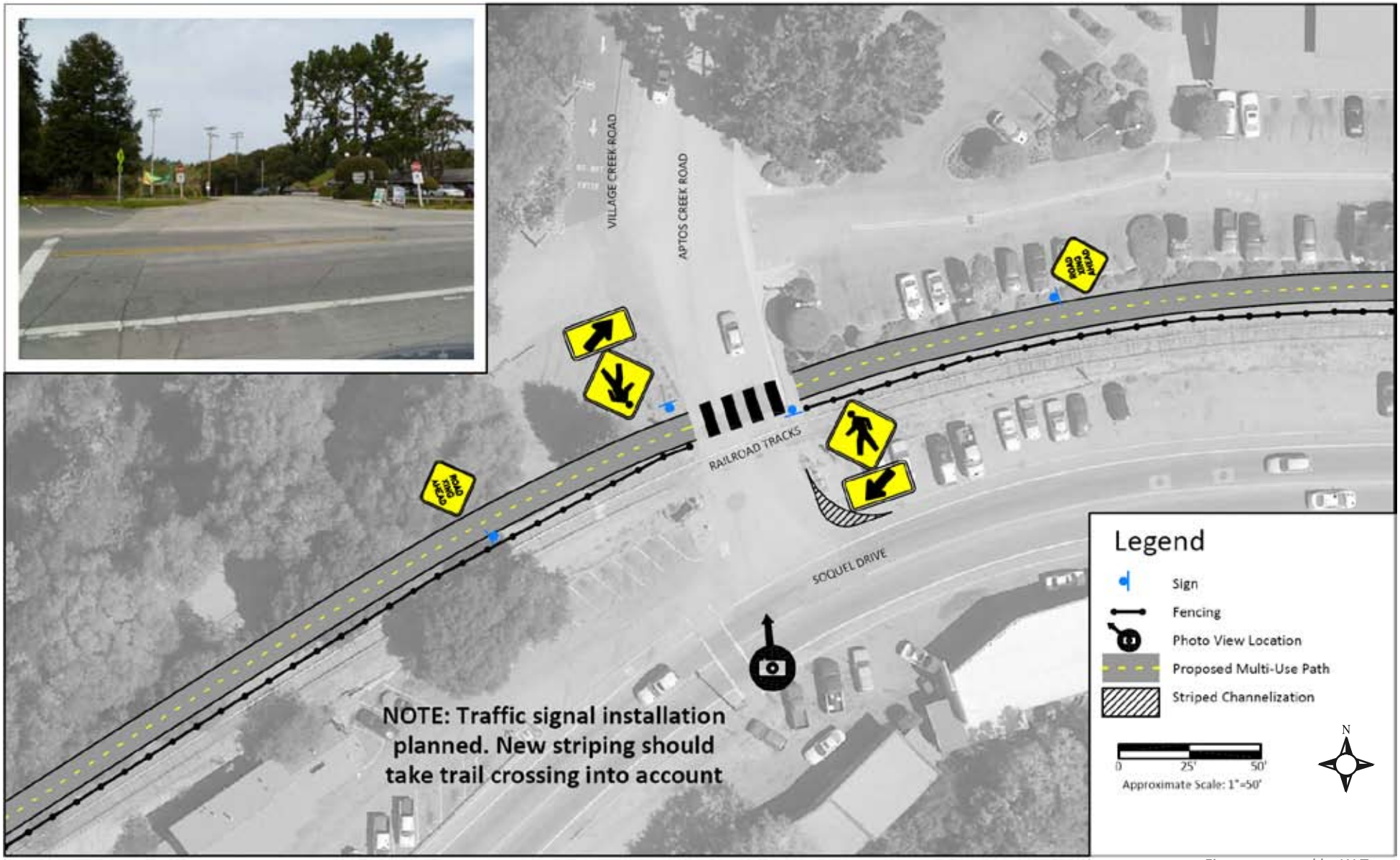


Figure 5-34 Crossing No. 67, Aptos Creek Road

Figure prepared by W-Trans

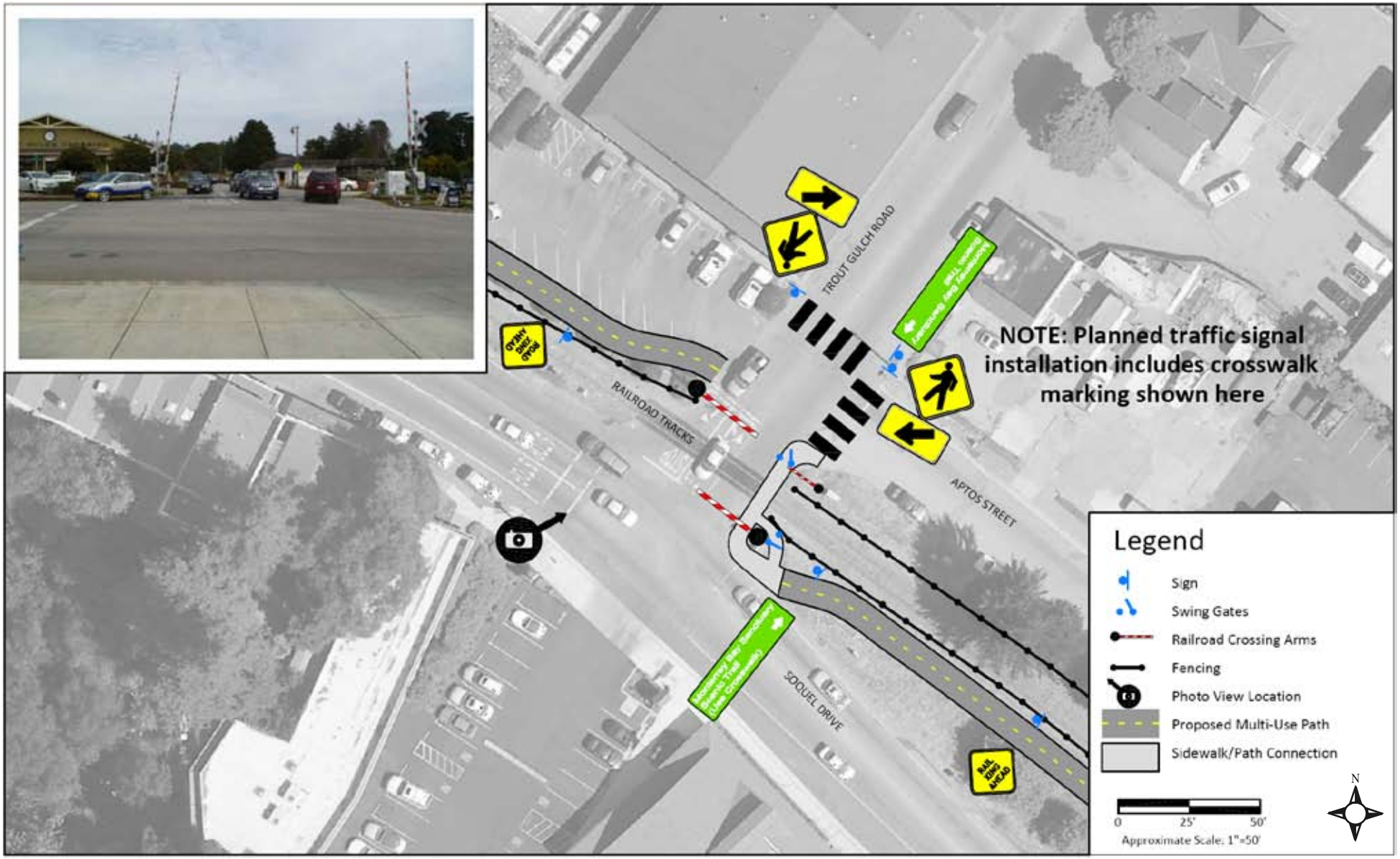


Figure 5-35 Crossing No. 69, Trout Gulch Road

Figure prepared by W-Trans

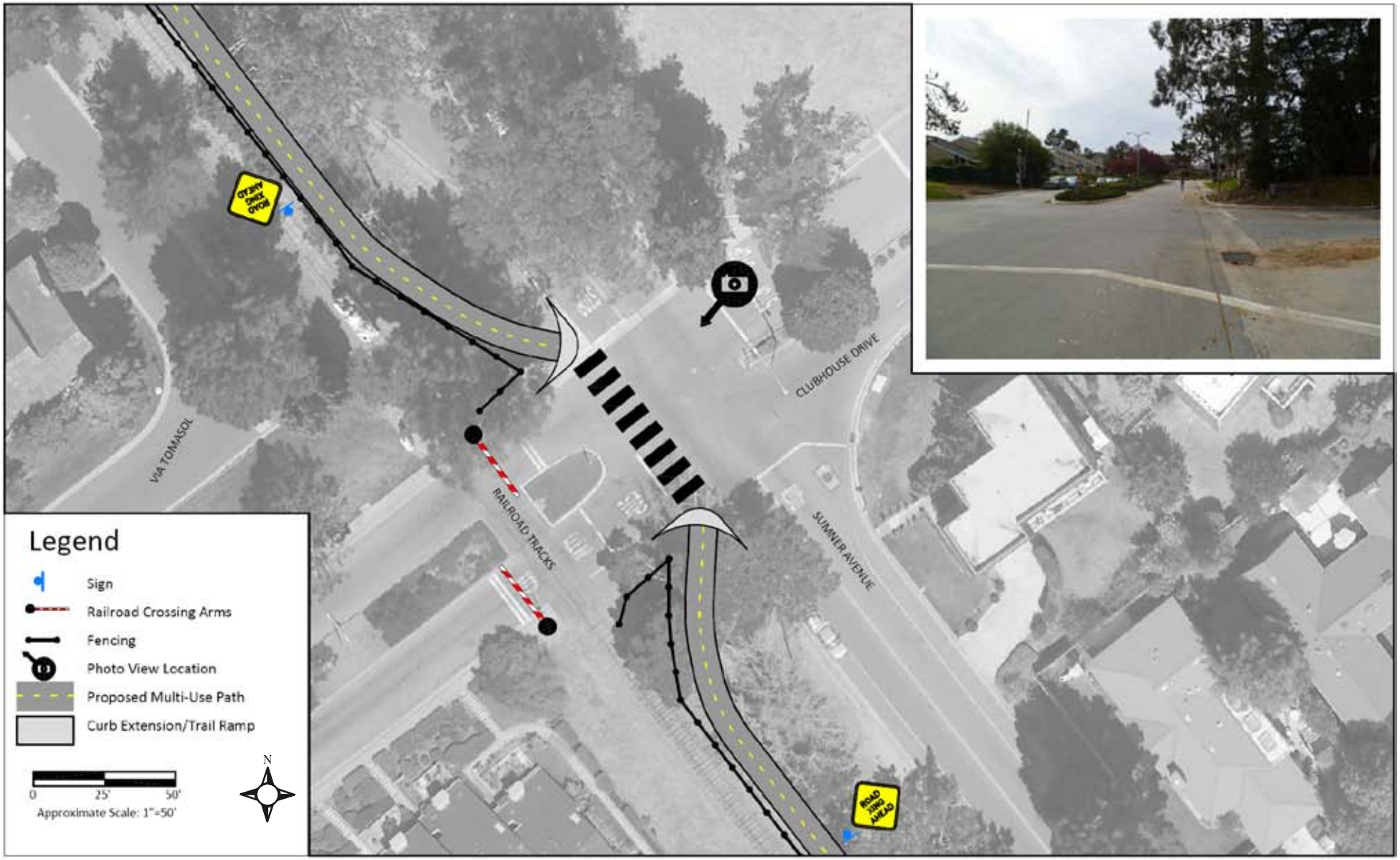


Figure 5-36 Crossing No. 70, Clubhouse Drive

Figure prepared by W-Trans

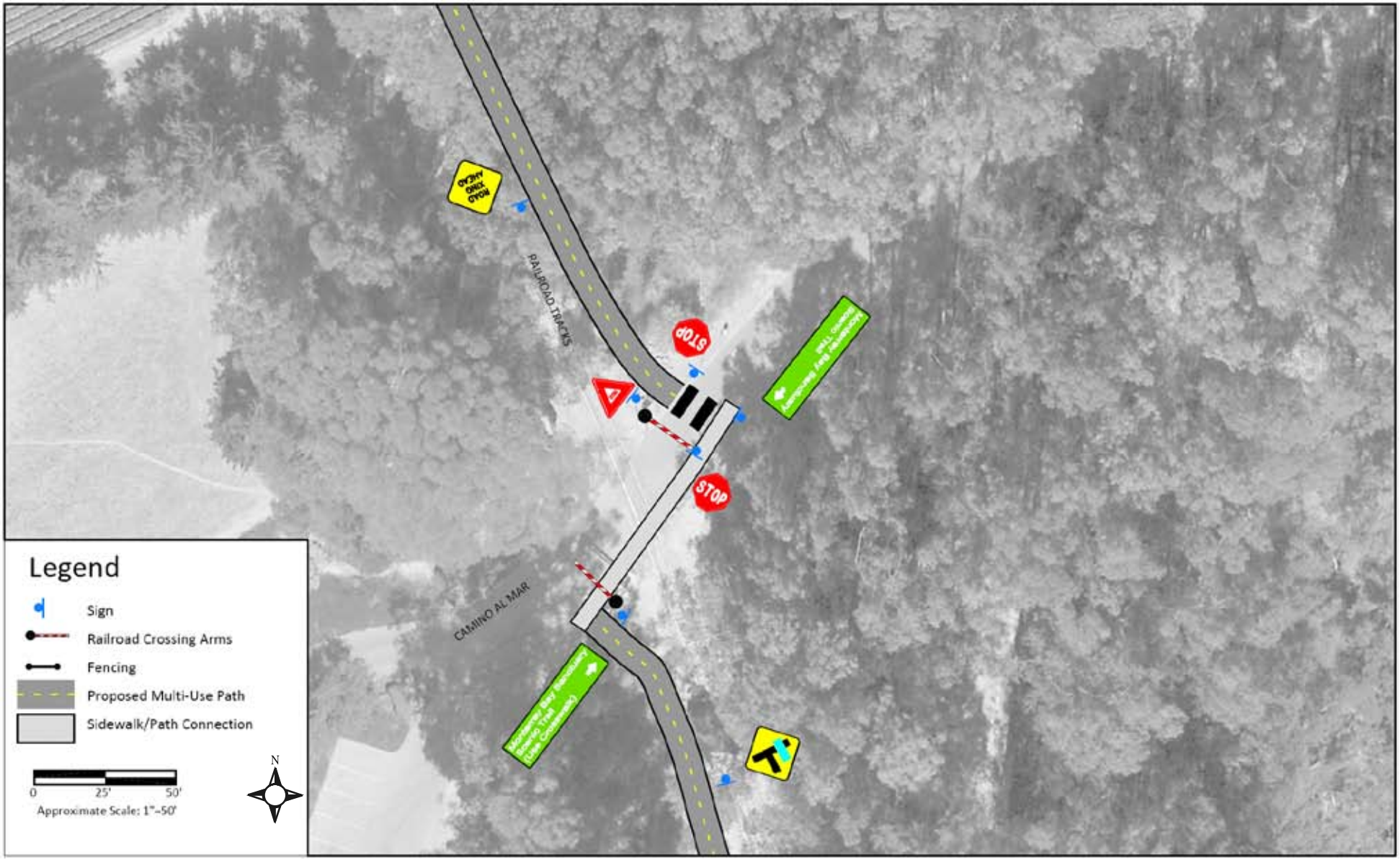


Figure 5-37 Crossing No. 75, Camino Al Mar

Figure prepared by W-Trans

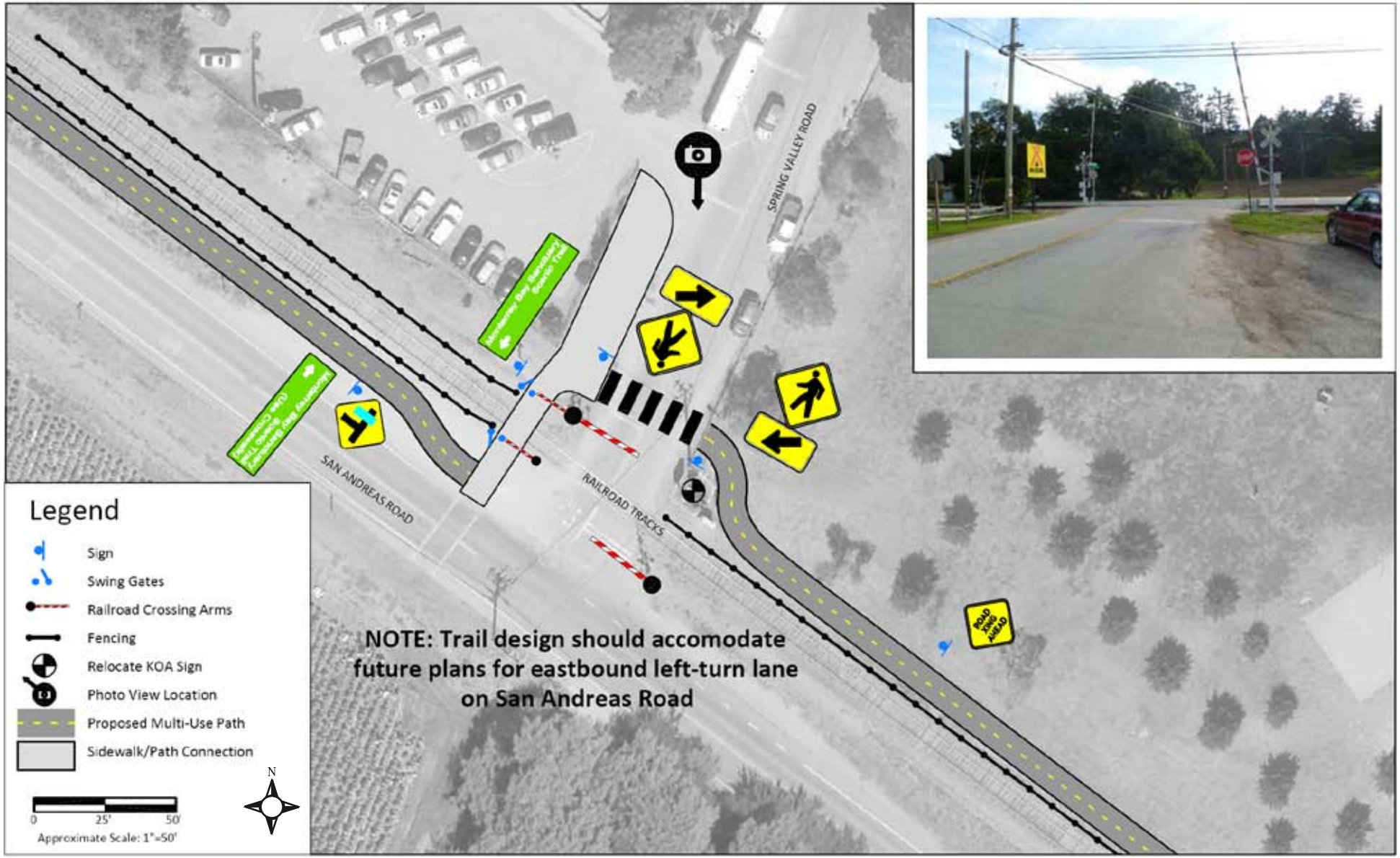


Figure 5-38 Crossing No. 77, Spring Valley Road

Figure prepared by W-Trans

Natural Bridges State Beach

Concept of concrete bench with MBSST logo

5.5 TRAIL AMENITIES AND FEATURES

In addition to user facilities at rest stops and staging areas, trail amenities in the form of benches, shade structures, informational signs and trash containers will be located along the trail in strategic locations. The design of these elements is intended to reflect an ocean theme. The use of wood, stone, wire fences, self weathering (rusted) steel, and other rustic materials will reinforce this image.

5.5.1 TRAIL FURNISHINGS

BENCHES AND SEATING AREAS

Benches for the trail system should be durable, capable of withstanding both the harsh coastal environment and the remote stretches of trail segments outside of the urban areas. The benches should be secured to their locations to avoid theft and or vandalism. Since the trail will be passing through multiple communities and governing agencies, each with its own character and setting, the bench style for the Coastal Rail Trail should be consistent rather than trying to conform to the bench standards of each local jurisdiction. Benches should be placed at a minimum every quarter to half mile to provide convenient and attractive resting places along each segment. Areas where the new trail connects with existing beach trailheads, rest stops, interpretive overlooks, or other existing park facilities may not need new benches. New trail rest areas and trailheads should first be evaluated for conformance with existing adjacent park furnishings before adding new benches. Existing adjacent park furnishings should override the implementation of new facilities if they are already present and in good condition. Each bench placement should be analyzed to avoid redundancy or clutter. Other alternatives to fabricated benches could include the use of large boulders for seating in more rural or natural settings. Benches should be clustered with trash receptacles and other key furnishing elements.

Existing concrete bench near the terminus of East Cliff Drive

TRASH RECEPTACLES

Trash receptacles should be placed in areas where there are benches and at all major trailhead locations. The trash receptacle unit should include one trash container and one recycle container. The containers shall include animal proof lids and the design, color and style shall stay consistent along the trail segments outside of existing agency's park and trail segments.

Concrete trash can

BIKE RACKS

Bike racks should be located at rest areas, existing and proposed trail heads, near transit stops, picnic sites, park sites, and commercial areas adjacent to the trail. Bike racks should be provided in conjunction with commercial, office and multi-family residential developments adjacent to the trail corridor both existing and proposed.

Typical bike rack found throughout Santa Cruz County

PICNIC AND SHADE SHELTERS

Shelters should be placed along the trail corridor where existing park facilities are farther than a quarter mile in distance. They should be conveniently located at trailhead parking areas, rest areas, scenic overlooks, and remote or exposed segments along the trail corridor. Because the trail passes through multiple community and park agency boundaries, the shelter locations should be carefully selected to work with existing park and trail facilities and avoid redundancy. Picnic and shade shelter design and style should be consistent along the trail corridor. Shelter design exceptions may occur when a proposed shelter location is adjacent to or within an agency jurisdiction that has an existing shelter in that site or within view of trail corridor's chosen location.

Picnic shelter with wave-style roof

BOLLARDS

The purpose of bollards is to keep unauthorized motorists off the path. Bollards should be removable for emergency and maintenance access, light in color and reflectorized for visibility, lit with solar-powered LED lights (where feasible), and between 36" tall and 46" tall. Bollards should be positioned at least 5 feet apart and include diversion striping on the pavement.

Metal bollard along multi-use path

Existing trail fencing and bollards near the Sanctuary Exploration Center

TRAIL FENCING

Fencing along the trail will vary depending on the location and agreements between adjacent land owners and the RTC. The use of fencing along the trail corridor should be used conservatively to maintain the open feel and views of the coastal environment. Where excess right-of-way permits, a landscaped buffer should be provided instead of fencing. Fences can be costly if installed unnecessarily and the long-term maintenance adds to long-term budget impacts. The fence designs proposed for the trail corridor are standards that can be applied to several scenarios. Fencing will typically be used for the following reasons: safety, security, trespass prevention, environmental impacts, and privacy. The following narrative describes the types of fencing at various locations.

WIRE SECURITY FENCE

Seventy-two (72) inch high woven-wire security fence with metal post (refer to Fig 5-4). This fence type provides a high level of trespass prevention and security. This fence also provides an opportunity for screening with vine plantings to soften the look of the fence and provide additional protection from train blown dust and debris.

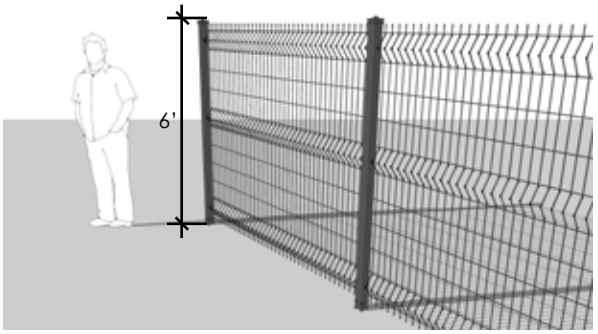


Figure 5-1 Wire security fence

- Urban and industrial areas
- Rail track and trail separator (where high number of illegal crossings are expected)
- Safety and security need

SMOOTH WIRE FENCE

Fifty-four (54) inch high 10-strand smooth wire fence with concrete post (refer to Fig 5-2). This fence type provides a level of trespass prevention and provides open visibility of surrounding landscape.

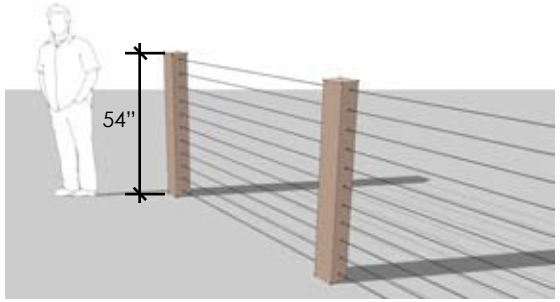


Figure 5-2 Smooth wire fence between rail and trail or between trail and agricultural land

- Rural and urban areas
- Agricultural land boundaries
- Rail track and trail separator (where trail is within 15 feet of rail tracks)
- Scenic areas and open space
- Environmentally sensitive sites

The fence will be used when required by either RTC or the adjacent land owner. The fence will be located at the right-of-way edge or a minimum of 2 feet from the outer most edge of the trail surface. The specific location of the trail fence will be determined at the time of the preliminary design and finalized in the construction documents for each implementation phase of the project. Where authorized private farm crossings exist or are planned, the implementing entity, with RTC approval, and the adjacent landowner will mutually determine the most appropriate method of a secured gated treatment or open fence segments for farm vehicular access and or public access to public lands.

CONCRETE SPLIT-RAIL FENCE

Forty-eight (48) inch high three-rail concrete split-rail fence (refer to Fig 5-3). This fence type provides low level of trespass prevention, some open visibility, boundary delineation, and parkland character.

- Urban areas and rural residential
- Open space and park lands

In urban areas, a fence may be used to separate the trail from adjacent property. The design and use of this fence is subject to the discretion of each implementing entity as approved by RTC. The style of the fence in urban areas shall reflect the design character established by local design plans. Fencing types may include wood, wood substitute, stone and wrought iron, wrought iron or other suitable materials excluding chain link materials.

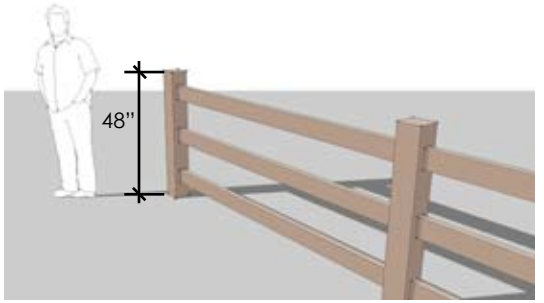


Figure 5-3 Concrete split rail fence between trail and rural residential parks, and open space

PRIVACY FENCE

Seventy-two (72) inch high concrete privacy fence with metal post (refer to Fig 5-4). This fence type provides some level of trespass prevention, security, and privacy for adjacent landowners. This fence also provides an opportunity for screening with vine plantings. The concrete components increase the life of the fence and reduces the long term maintenance cost.

- Urban and industrial areas
- Residential areas
- Safety and security need

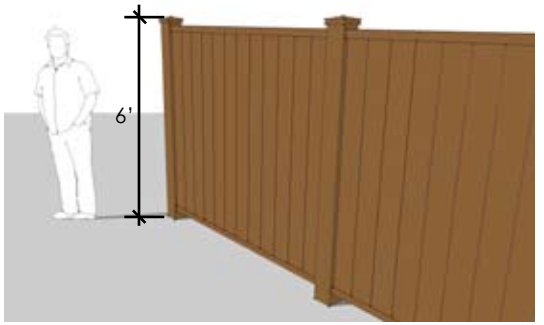


Figure 5-4 Privacy fence

5.5.2 UTILITIES AND LIGHTING

Surface and subsurface utilities are located within the railroad right of way and may impact the location and construction of the Coastal Rail Trail. Subsurface utilities and infrastructure must be identified during pre-construction activities. Utilities include active and abandoned railroad communications cable, signal and communication boxes, fiber-optic cable, water and sewer lines, and telephone lines. The Coastal Rail Trail will be designed to avoid having to move most active surface utilities, although utility poles no longer in use may be removed. The trail may be located directly over existing subsurface utilities assuming (a) adequate depth exists between the trail surface and utility to prevent damage, and (b) agreements can be reached with the utility owner regarding access for repairs and potential impact to the trail.

Portions of the trail may be lighted, especially where there is considerable evening pedestrian and bicycle commuter traffic. There will be some lighting benefit from existing light sources along adjacent roadways and at crossings. Dark sky compliant lighting should be used to illuminate the trail. Dark sky lighting must project light downward without releasing lighting upwards into the atmosphere or outward past the intended projected path.

Trail lighting that is Dark sky compliant due to downward facing light with shield

Seascape Park in Aptos, CA has the potential to incorporate additional staging area amenities

5.5.3 TRAIL ACCESS / STAGING AREAS

Twenty-two trail access and staging areas exist in close proximity to the trail alignment, for example, at Depot Park and at the Wilder Ranch State Park Visitor Center. Features include parking for vehicles and bicycles, phones, drinking water, trash receptacles, kiosks with traveler information, and other amenities. As future usage increases, additional staging areas may be warranted. A concept for future trail access/staging areas is identified on Figure 5-5. All new staging areas and retrofits shall be compliant with ADA standards (handicapped accessibility). Refer to Figure 5-5 for typical features.

PURPOSE AND CHARACTER

- Place to park vehicles and unload bikes
- Access from urban areas to trail
- Wide range of services for recreational users
- Tied to shared public used (i.e., train depots, parks, museums, civic uses, etc)

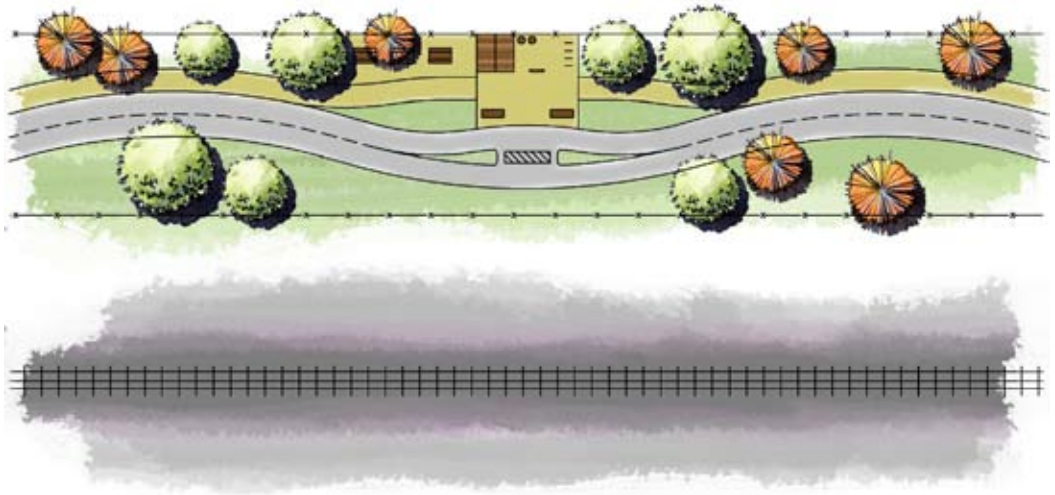
TABLE 5.2 - EXISTING/PLANNED TRAILHEAD/STAGING AREA AMENITIES

	Paved Parking Lot	Accessible Parking	Street Parking	Shelter	Overlook with Benches	Trash Cans	Bike Racks	Accessible Restroom	Drinking Water	Benches	Picnic Area	Other/Notes
Waddell Beach	X	X						X				
Greyhound Rock Beach	X	X					X	X				
Scott Creek Beach			X		X	X	X					
Davenport Beach Landing			X		X	X	X	X				
Davenport												Unpaved parking lot
Coast Dairies, Bonny Doon Beach	X					X						
Coast Dairies, Yellowbank Beach												Unpaved parking lot
Wilder Ranch State Park, 4 Mile Beach												Unpaved parking lot
Wilder Ranch State Park, Old Cove Landing	X	X	X				X	X	X			Trailer Parking
Natural Bridges State Beach	X	X										
Neary Lagoon Park - PLANNED												Existing boardwalk
Depot Park	X	X		X			X	X	X	X	X	Other amenities
Main Beach	X	X					X	X	X	X	X	Other park amenities
Santa Cruz Harbor	X	X					X	X	X	X	X	Other park amenities
Simpkins Swim Center	X	X		X			X	X	X	X	X	Other amenities
Jade Street Park at 47th St.	X	X					X	X	X	X		Other park amenities
New Brighton State Beach	X	X		X			X	X	X	X	X	Other amenities
Aptos Village	X	X					X					
Hidden Beach	X						X			X	X	Lawn area
Seascape Park	X	X			X		X	X	X	X	X	Lawn area, trails
Manresa State Beach	X	X			X		X	X	X	X	X	
Watsonville Slough Trails							X			X	X	Lawn area, trails
Walker St., Watsonville	X											

Figure 5-39 Trail Access/Staging Area Design Elements

DESIGN ELEMENTS

- Paved parking (aggregate base in sensitive areas)
- Information kiosk with a trail directory map / trail information
- Picnic tables
- Public phones
- Drinking fountains
- Trash cans
- Safety lighting
- Bike racks
- Shade and shelter
- Potential for commercial vending and service (food, bike support, equipment)
- Interpretive signs
- Food Kiosk
- Bike shop/station rental



Typical rest area design when located adjacent to the railroad corridor

REST AREAS

Facilities for comfort (benches, trash receptacles, shade and water), safety (phones and kiosks with traveler information), and interpretative information (historical, cultural, and educational information) should be developed along the trail. Rest areas should be located at places of interest and at regular intervals (approximately two to three miles apart).

DESIGN ELEMENTS:

- Trash cans
- Emergency phone
- Drinking water
- Shade element
- Directional signage/trail information
- Benches with backrest and armrest
- Grades that do not exceed 5 percent

Wilder Ranch parking lot, trail access, and staging area

Wilder Ranch restrooms

Depot Park parking lot, trail access, and staging area

5.5.4 UNIFORM SIGNING AND MARKING

Bike stop sign

Bike route signage on West Cliff Drive

Signage at Wilder Ranch

Uniform sign design and logo theme will be provided along the trail. Signing and marking will unify the trail design and provide functional information. Elements such as bollards to prevent unauthorized trail access, mile post markers to identify specific locations along the trail, directional signs to various places of interest and user services, informational and traffic control signs and a trail logo will all provide necessary information and help to unify the design.

Signs along the trail should be designed to meet all of the required and recommended signing and marking standards developed by Caltrans in Chapter 1000 of the Highway Design Manual. In addition, all signs and markings should conform to the standards developed in the Manual of Uniform Traffic Control Devices (MUTCD).

In general, all signs should be located at least three to four feet from the edge of the paved surface, have a minimum vertical clearance of eight and a half (8.5) feet when located above the trail surface and be a minimum of four feet above the trail surface when located on the side of the trail. All signs should be oriented so as not to confuse motorists. The designs (though not the size) of signs and markings should be the same as used for motor vehicles.

Directional signing may be useful for trail users and motorists alike. For motorists, a sign reading 'Coastal Rail Trail Xing' along with a trail emblem or logo helps both warn and promote use of the trail itself. For trail users, directional signs and street names at crossings help direct people to their destinations.

Other barrier types between the trail and private property may be used such as ditches, berms and/or vegetation. Recommended vegetation types should be low-water, low-maintenance varieties. Ditch or berm gradients should not exceed 2:1 slopes or be greater than ten feet in depth or height. Refer to Figure 5-6 for trail marking and sign examples.

5.5.5 COASTAL RAIL TRAIL SIGNAGE

A customized wayfinding signage program for the Coastal Rail Trail should be further developed to orient users, provide educational opportunities, and to unify the trail corridor. The design should mirror the MBSST sign program in terms of height, scale, and font type. However, the signs should differ from the MBSST in terms of colors and materials used. All trail signage should be identified with the MBSST logo. Conceptual illustrations of compatible signage types are provided below.

In addition, a Coastal Rail Trail logo should be created to enhance the identity of the rail trail. The logo may be a variation of the MBSST logo by keeping the same orientation, font, and use of black. The colors and central design should be modified in order to reflect a rail trail theme.

Santa Cruz Public Libraries

Seacliff Beach State Park with the cement ship, the Palo Alto, in the background (1930)

HISTORIC AND EDUCATIONAL THEMES

The MBSST offers a unique opportunity to physically connect the communities of Santa Cruz County to one another and create ties to its culture and history. In addition to the exhibit locations identified by the previously prepared MBSST Standards Manual, additional historic and educational exhibits (interpretive exhibits) will be placed along the trail at strategic locations offering a variety of information. For example, information concerning the history of railroads, lumber, beaches, and farming in the area can be portrayed. Educational exhibits describing the environment and natural resources should be developed to educate visitors and residents about current issues and stewardship. All of these topics will be presented in a cohesive design to help reinforce the continuity of trail design.

Interpretive Design Themes

- Monterey Bay National Marine Sanctuary
- Location specific flora and fauna
- Coastal-dependent industrial history
- Native American presence and culture
- Watershed and underwater geography
- Climate and habitat
- Railroad History
- Rivers, Estuaries, Beaches

Figure 5-40 Conceptual Signage for Coastal Rail Trail

Monterey Bay Sanctuary Scenic Trail interpretive signage installation at Lighthouse Point Park

SANCTUARY SCENIC TRAIL SIGNAGE

The RTC and the Santa Cruz County InterAgency Task Force secured funding from a Federal Transportation Enhancement Grant to develop conceptual designs for a trail logo, a wayfinding system to orient trail users, and an interpretation system to showcase distinct habitat areas, and illustrate themes and stories consistent with the conservation and education goals of the Monterey Bay National Marine Sanctuary. Through this process, a series of wayfinding and interpretive exhibits were designed to be distributed through a core 11-mile length of the Monterey Bay Sanctuary Scenic Trail. There are five types of signs and exhibits: trail markers, directional signs, orientation signs, minor interpretive exhibits and major interpretive exhibits. A handful of these signs have already been installed.

The Sanctuary Scenic Trail Standards Manual (June 2005) includes locations and design direction for trail signage and should be implemented where the proposed Monterey Bay Sanctuary Scenic Trail alignment intersects with the signage locations identified by the Standards Manual. As new trail signs are installed, they should incorporate directional information leading users to the Coastal Rail Trail and/or the California Coastal Trail where appropriate.

Figure 5-41 Directional and Interpretive Signs Identified by the Sanctuary Scenic Trail Standards Manual - June 2005 (Graphics by LSA)

COUNTYWIDE BICYCLE ROUTE SIGNAGE

In an effort to further increase bike ridership and provide a viable transportation alternative, the RTC is developing a Countywide Bicycle Route Signage Program. Way-finding signage for the current on-street network is thought to increase the number of bicyclists on the road, as well as improve bicyclists' visibility and safety. The exact sign type has not been agreed to yet but the mock-ups proposed (see image below) would fit in with exciting signage, would be easily integrated into the proposed sign types and is in compliance with the MUTCD.

MULTIPLE TRAIL DESIGNATIONS

In certain instances, the Coastal Rail Trail will include additional trail network alignments such as the California Coastal Trail, Monterey Bay Sanctuary Scenic Trail, and/or the Pacific Coast Bike Route. When this is the case, the application of the proper logo(s) should be applied to trail signage to inform the user of the multiple route status. A concept of a post with trail logos is illustrated below.

Possible Countywide Bicycle Route Signage

Post sign with multiple trail designations

California State Parks Logo

California Coastal Trail Logo

Typical Pacific Coast Bike Route sign

5.5.6 LANDSCAPE DESIGN

The landscaping treatment along the Monterey Bay Sanctuary Scenic Trail will vary along the corridor as it traverses from one region to another. The landscape treatment will be limited by availability of space in the trail corridor, narrow rights-of-way, railway operational clearance, agricultural operations, sensitive coastal bluffs, and other mitigating factors.

Currently there are existing segments of the MBSST corridor that follow highly urbanized areas with landscape treatments existing along street corridors, parks, adjacent open space, harbor edges, and beachfront areas. The landscape for new segments of the MBSST will vary with the setting and with the agency responsible for the design, implementation, and long-term maintenance. The landscape treatment will also vary by setting. The proposed trail corridor lies along one of the most beautiful coastlines in the world traversing many different environments ranging from intense popular urban areas to rural and native coastal edges. Landscape treatment in intense urbanized areas can include both native and non-native drought tolerant plant palettes. These urban areas offer a broader range of choices for plant species to be used in the landscape. However, areas where the trail is located in and/or adjacent to native landscape settings, or rural and agricultural lands, every effort should be taken to maintain native and indigenous plant species in the planting and restoration efforts. Plant palettes will be determined as part of the design phase for each segment in coordination with the implementing entity. Planting plans will also comply with environmental studies and recommendations concerning sensitive or critical native plant habitats. Other precautions should consist of the strict avoidance of invasive species being included in any planting plans.

Drought tolerant grasses used in median treatment

A combination of flowering shrubs and ground cover should be used at key areas

Drought tolerant succulents thrive in Santa Cruz County

5.5.7 DRAINAGE AND EROSION CONTROL

DRAINAGE IMPROVEMENTS DURING TRAIL CONSTRUCTION

Drainage improvements to accommodate the trail section will be made in conjunction with trail construction. Trail design will be engineered so as not to increase any historic run off onto a property. Drainage engineering will be coordinated with any adjacent and regional efforts that may be underway at the time to resolve historical problems to the greatest degree feasible. A combination of culverts, channelization, and improved bridge crossings will occur in conjunction with trail construction. Trail engineering will focus on methods to minimize siltation maintenance issues.

Sand Dune encroaching onto railroad tracks

CULVERTS

Culverts can be used in seasonal drainage ways or seeps along gullies and swales. Culverts should be sized to handle the high flow during seasonal rains. The culverts may consist of plastic or metal corrugated pipe. Trail approaches should be designed at a straight 90-degree angle. Culvert crossing width should match the trail approach width on both sides. Culvert faces should be concealed with native stone and channels downstream of culverts with rip-rap.

Exposed drainage infrastructure

SEA LEVEL RISE

Generally, the California Coastal Commission (CCC) requires new development to be setback from bluff edges so that development would be safe from bluff retreat for at least 100 years. However, the CCC does make exceptions to the setback requirements for recreational/trail projects.

The 100 year sea rise projection is unlikely to impact on-street trails. However, natural surface trails along coastal bluffs may be impacted and development of new trails should consider sea level rise impacts.

Example of a "universal access" trail (Bonnie Lewkowicz)

Walker and bicyclists sharing the trail

Bridges should be wide enough to allow for pedestrians and bicyclists to pass with ease

5.6 UNIVERSAL TRAIL DESIGN

"Accessibility" or "universal access" shall be considered in the decision-making processes including planning, design, construction, and management of the Monterey Bay Sanctuary Scenic Trail Network. Universal access includes design strategies that provide trail access to those with and without disabilities including families, the elderly and mobility impaired persons. At a minimum, current state and federal regulations concerning the Americans with Disabilities Act (ADA) shall be applied to provide access to a wide range of user capabilities where it is deemed appropriate and reasonable.

While trail designers shall refer to the federally mandated ADA guidelines, the following five design characteristics are typical of the types of challenges that must be overcome to ensure a universally accessible trail.

- Trail Grade
- Cross Slope
- Width
- Surface Type
- Obstacles

5.7 USER CONFLICT REDUCTION STRATEGIES

In essence, user conflicts are a result of success: they are indicative of a trail's popularity. Nonetheless, they can lead to safety problems. Trail planners can take preventative measures to anticipate heavy use and preclude user conflict in multiple-use trails permitting use by walkers, runners, bicyclists, etc. Potential trail conflicts are best minimized through design and setting the proper expectations which, in turn, comes from appropriate width, clear signage, and enforcement of behavior.

General tips for reducing the potential for conflicts include:

1. Involve all potential user groups in the planning process to raise issues and help address them
2. Design to minimize conflicts with separate trails or shoulders for pedestrian and equestrian use where possible, provide adequate width and sight lines, furnish turnouts at stopping points, etc.
3. Use clear signage or pavement markings to define etiquette and yielding protocol
4. Set expectations for multi-use
5. Enforcement of rules by volunteer trail patrols and/or a uniformed presence – especially when a trail is new to establish precedent and expectations

Spatial management is a system that designates different trails or spaces for particular uses: for instance, trail managers may assign one trail to cyclists and another trail to walkers. In addition, speed controls help curtail "speeding" cyclists on multi-use trails. A formal speed limit should be established only when all else fails; an effective speed limit requires consistent, ongoing enforcement, and it is unclear whether reducing the speed actually improves the real or perceived safety of the trail. The problem of excess speed might therefore be better addressed through design; for example, a granular stone surface will encourage slower speeds than a paved surface.

People pushing strollers are commonly found on multi-use trails

Trail etiquette sign example

Trail etiquette should be established at the beginning. Involving trail patrols and volunteer trail ambassadors is a great way to build community support and expectations on the trail. Encourage interaction between user groups with a campaign such as, “Just say hello.” Trail etiquette can be formalized into user rules and regulations. The regulations, developed in conjunction with trail user groups, should spell out the rules governing public conduct on the trail. Unless legally required, use terms such as “trail courtesy” or “visitor responsibilities” instead of “rules and regulations.” Visual and simple displays of expectations are preferred. Consider these courtesy advisories:

- Wheels yield to heels
- Be courteous to all trail users
- Travel at a reasonable speed in a consistent and predictable manner
- Always look ahead and behind before passing
- Pass slower traffic on their left; yield to oncoming traffic when passing
- Give a clear warning signal before passing – use voice signal, not horn or bell, when passing horses
- Keep all pets on a short leash
- Respect the rights of adjacent property owners
- Don’t be a litterbug
- Please clean up after your pets
- Move off the trail when stopped to allow others to pass
- Yield to other users when entering and crossing the trail
- Motorized vehicles are prohibited (except electric wheelchairs)
- Alcoholic beverages and illegal drugs are not permitted on the trail
- Firearms, fireworks, and fires are not permitted on the trail
- All trail users should use a light and reflectors after dusk and before dawn
- Travel no more than two abreast
- Be aware and courteous to others while using a cellular phone

5.8 DOGS ON TRAILS

The Monterey Bay Sanctuary Scenic Trail Network in Santa Cruz county traverses over 50 miles from the banks of the Pajaro River in the south up north to the San Mateo county line. The trail network will pass through several different city, county, and state properties, all with varying rules and regulations addressing dogs in the park lands and on trails.

One of the most popular trail activities today is people walking their dogs. For many people, a trail walk invariably means a walk with the dog. This has become an important activity for both the owner and the pet to enjoy the outdoors and get some exercise. For some trail users, this is an opportunity to let the dog run free in available open areas. Along multi-use trails, agency managers often post leash laws to help reinforce safety policies concerning dogs under reasonable leash constraints.

Wildlife habitat areas are especially sensitive to unleashed dogs. Trails near waterways, shorelines, riparian corridors, and potential nesting areas often include leash laws to prevent dogs from having contact with the wildlife. Dogs benefit from wearing a leash by being protected from rattlesnakes, ticks, traffic, trail user conflicts, and various other hazards and distractions.

As the popularity of dog walking continues to grow, so does the need to prevent dog waste from impacting the trail. Implementing entities should encourage pet waste removal through provisions of dog waste bag dispensers at trailheads. More remote sites or neighborhood access areas may include a simple regulation sign requiring pet owners to collect their pet waste both as a courtesy to other users and a management tool for habitat preservation.

The waste removal restrictions do not apply to service animals, as defined by the Federal Americans with Disabilities Act (ADA). The ADA defines a service animal as any guide dog, signal dog, or other animal individually trained to provide assistance to an individual with a disability.

Currently the California State Parks rules and regulations require dogs on leash within the park boundaries. California State Beach regulations require dogs be on a leash and allowed on paved trails only.

Other regulations for dogs on trails may include requests to have the pet up-to-date with all applicable vaccinations and a current license with the County Department of Animal Services. Some implementing entities may have their own animal care services or licensing.

Pet waste station

Dogs on leashes

Trail runner with dog on a leash

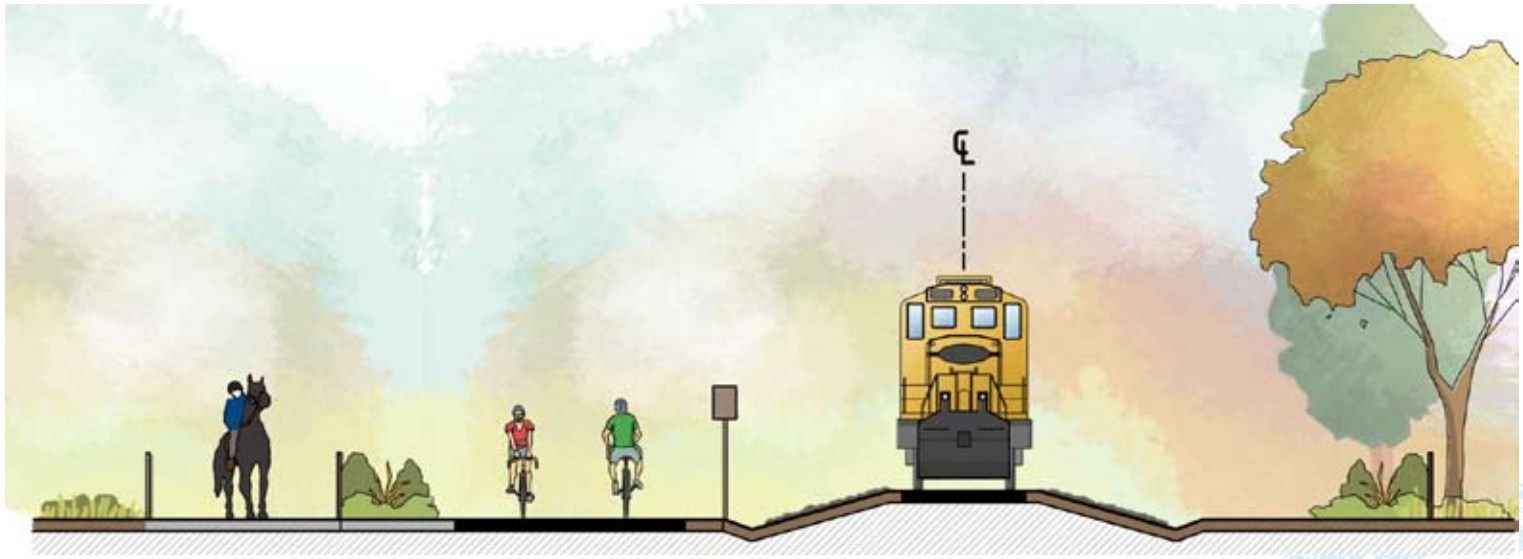
5.9 EQUESTRIANS ON TRAILS

Lack of equestrian experience near railroads, horses' instinctual flight behavior, and equestrians' general wariness of new and potentially challenging situations require specific design considerations when planning for equestrian use on multi-use paths. Some equestrian users advocate fences of sufficient height to prevent horses jumping them when startled or frightened; however, this concern must be balanced with the need for visibility of trains for both horses and riders. Horses that cannot see an oncoming or approaching train will experience greater fear and confusion than if they are able to see and identify the source of noise.

Trail width is an overriding design issue when providing equestrian use. Multi-use paths designed to accommodate equestrians should provide a separate unpaved pathway that is at least 8 feet wide and that has a vertical clearance of at least 10 feet. The equestrian trail should be separated a minimum of three feet (3') from the paved multi-use path.

Many horses are frightened by bridges and other elevated environments, particularly lattice or perforated bridges and trestles that allow the animal a view of the ground surface substantially below the bridge deck. Most horses are not accustomed to this environment and will respond unpredictably with potentially negative consequences. In Segment 5.3, the Old Dairy Gulch bridge crossing will require additional consideration when designing bridge improvements to incorporate equestrians.

Equestrian use is limited to the north coast area extending from Wilder Ranch to Davenport. Equestrians will utilize the existing facilities located in Wilder Ranch.



Equestrian trail adjacent to the Coastal Rail Trail

Equestrian trail opportunity north of Wilder Ranch

SECTION SIX CONTENTS

This section consists of matrices and tables designed to provide an objective process for the MBSST funding and development priorities. It describes the process by which points were assigned to each segment and includes a ranking matrix that tabulates the points earned by each segment. This information is then translated into a priority matrix that assigns each segment a Phase I, Phase II, or Phase III priority. Funding sources, administration and implementation strategies are also included.

SECTION SIX
PROJECT PRIORITIZATION AND COSTS

6.1 PROJECT PRIORITIZATION

The following information and tables are provided to aid the Santa Cruz County Regional Transportation Commission (RTC) in determining whether or not a project is ready for further development and implementation. The goal of Tables 6.1 through 6.10 is to objectively prioritize the order in which the Monterey Bay Sanctuary Scenic Trail (MBSST) segments should be developed. Actual implementation may be different due to new funding opportunities and public wishes which may change over time. Prioritization may also be impacted by implementing entities' interest in bringing the project to fruition. However, the RTC intends to use this prioritization mechanism as a general guideline by which to fund and implement each segment. Tables 6.2 through 6.9 evaluate a series of criteria developed to prioritize segments based on a point system. The segments that receive the most points are ones that serve a large number of activity centers, have minimal physical constraints, and fill in trail network gaps. These prioritization categories include:

"Actual implementation may be different due to new funding opportunities and public wishes which may change over time."

1. Proximity to Activity Centers - 10 points possible
2. Coastal Access Connectivity - 5 points possible
3. Trail Segment Cost - 5 points possible
4. Trail Segment Length - 5 points possible
5. Minimal or No Bridge Crossings - 5 points possible
6. Limited Right-Of-Way Constraints- 5 points possible
7. Gap Closures (and connections to existing and planned non-motorized facilities) - 5 points possible
8. Public Input - 5 points possible (forthcoming - after 2nd public workshop series)

These tables work in concert with Table 6.10 which applies the prioritization categories to each segment. There are a total of forty-five (45) possible points based on the eight (8) categories above. Each segment is further broken out into one of three Phasing Categories based on the percentage of total possible points it received, as shown in Table 6.1 below:

TABLE 6.1 - Phasing Categories Methodology

% of Available Points		Priority Phase
62%-100%	(28-45 points)	I
44%-61%	(20-27 points)	II
0%-43%	(0-19 points)	III

6.1.1 EVALUATION CRITERIA AND METHODOLOGY

PROXIMITY TO ACTIVITY CENTERS – 10 POINTS POSSIBLE

This category represents the number of local and regional activity centers within ¼ mile, ½ mile and 1 mile of the proposed trail alignment. Activity centers include such items as educational facilities, employment and retail/commercial centers, parks, beaches, and tourist destinations.

The activity centers were counted per trail segment and assigned a corresponding point total. They were also assigned a distance multiplier based on the distances mentioned above as centers located closer to the proposed trail alignment have a higher value to trail users.

The resulting Activity Center Type per segment matrix is shown in Table 3.1. The methodology for including the Activity Center data in the Prioritization Matrix is shown in Table 6.2 below.

TABLE 6.2 - Proximity to Activity Centers Methodology and Points

Segment	Distance From Trail Multiplier			Number of Activity Centers	Points
	1/4 mile	1/2 mile	1 mile		
Per Segment	1.5	1	0.5	0-5	1
				5.5-10	2
				10.5-15	3
				15.5-20	4
				20.5-25	5
				25.5-30	6
				30.5-35	7
				35.5-40	8
				40.5-45	8
				45.5+	10

COASTAL ACCESS CONNECTIVITY – 5 POINTS POSSIBLE

The Coastal Rail Trail comprises most of the proposed trail alignment. It is part of the larger MBSST Network through Santa Cruz County and its connectivity to coastal access and local beaches is vitally important. This category assigns higher value where there is more connectivity to these coastal resources and breaks down as follows:

TABLE 6.3 - Coastal Access Connectivity Methodology

Description	Points
Trail runs adjacent to beach/shoreline/coastal bluffs	5
Trail has three (3) or more direct coastal connections	3
Trail has one (1) or two (2) direct coastal connections	1
Trail does not directly connect to a coastal access point	0

TRAIL SEGMENT COST – 5 POINTS POSSIBLE

The cost of a trail segment project directly influences the ability to implement it and how limited funding should be prioritized. Each project was rated on a scale of 1 to 5 points for estimated cost of implementation as shown in Table 6.4 below.

TABLE 6.4 - Trail Segment Cost Methodology

Estimated Segment Cost	Points
$0 - $1,000,000	5
$1,000,000 - $2,500,000	4
$2,500,000 - $5,000,000	3
$5,000,000 - $7,500,000	2
$7,500,000 +	1

SEGMENT LENGTH – 5 POINTS POSSIBLE

Trail segment length represents the physical amount of trail that will be available for public use per project segment. Longer trail segments receive a higher point total and the assigned values are represented in Table 6.5 below.

TABLE 6.5 - Trail Segment Length Methodology

Segment Length in Miles	Points
0.00 - 1.00 Miles	1
1.01 - 2.00 Miles	2
2.01 - 3.00 Miles	3
3.01 - 4.00 Miles	4
4.01 - 5.00+ Miles	5

MINIMAL OR NO BRIDGE CROSSINGS – 5 POINTS POSSIBLE

Crossing an existing stream or highway via a new or modified bridge is a significant physical constraint in terms of construction cost, time, and permitting. There are several locations where the proposed trail alignment will need to utilize existing bridges or trestles to overcome existing obstacles. These crossings will need to be modified or built to accommodate the proposed trail; the corresponding cost and challenges associated with these efforts are reflected by the following assigned point scale:

TABLE 6.6 - Minimal or No Bridge Crossings Methodology

Description	Points
Proposed trail alignment encounters no bridge crossings	5
Proposed trail alignment encounters one (1) bridge crossing	3
Proposed trail alignment encounters two (2) or more bridge crossings	1

LIMITED RIGHT-OF-WAY (ROW) CONSTRAINTS – 5 POINTS POSSIBLE

This category represents the significance of physical and monetary constraints involved in constructing the proposed trail alignment through narrow right-of-way areas. The Coastal Rail Trail is the preferred alignment; however, a constrained railroad right-of-way area would necessitate re-aligning the railroad tracks to accommodate the proposed trail, or re-routing the trail around the constrained right-of-way area along existing streets.

In the Northern Reach, where the proposed trail alignment continues north beyond the railroad right-of-way, the Caltrans right-of-way along Highway 1 can accommodate the proposed trail without significant constraints. The difficulties involved with constrained right-of-ways are represented as follows:

TABLE 6.7 - Limited Right-of-Way (ROW) Constraints Methodology

Description	Points
Proposed trail alignment is in Caltrans ROW or existing railroad ROW that can accommodate the trail without altering/moving the railroad tracks	5
Requires re-routing proposed trail alignment along existing streets	3
Requires obtaining an easement for proposed trail alignment	1
Requires permitting and moving/re-aligning railroad tracks	0

A gap closure completes a trail segment to an activity center or between two existing trail facilities.

GAP CLOSURES (AND CONNECTIONS TO EXISTING AND PLANNED NON-MOTORIZED FACILITIES) – 5 POINTS POSSIBLE

This category evaluates a trail segment's ability to connect to existing trail systems or networks. Such connections provide the value-added benefit of expanding the continuity of the overall MBSST Network, increasing connectivity to destination areas and recreational uses, and potentially increasing public usage of the existing trails. The benefits of connecting to existing trails are reflected by the following point scale:

TABLE 6.8 - Gap Closures (and Connection to Non-Motorized Facilities) Methodology

Description	Points
Trail connects to three (3) or more existing non-motorized facilities	5
Trail connects to two (2) existing non-motorized facilities	3
Trail connects to one (1) existing non-motorized facility	1
Trail does not connect to any existing non-motorized facility	0

"Public input and participation is an important part of the prioritization process."

PUBLIC INPUT – 5 POINTS POSSIBLE

Public input and participation is an important part of the prioritization process. Community members involved at the public workshops and other outreach efforts represent potential trail users and concerned residents. Points reflecting their priorities are assigned to proposed trail segments by the following point scale:

TABLE 6.9 - Public Input Methodology

Description	Points
Forthcoming (Data to be obtained at Workshop Series #2)	5
	4
	3
	2
	1

6.2 PRIORITIZATION MATRIX AND PHASING

6.2.1 PROJECT PRIORITIZATION

Table 6.10 shows the scoring guide for each trail segment based on tabulating the applicable points from Tables 6.2 to 6.9. Each segment can earn a possible 45 points. Segments with the highest point totals are considered to be the most likely to be funded and implemented in Phase I. A detailed analysis of the project priority list is described in Section 6.3.

TABLE 6.10 - Project Prioritization Matrix

CATEGORY (WITH POINT TOTALS)	TRAIL ALIGNMENT SEGMENT																			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
SEGMENT LENGTH*	1.06 MI	4.77 MI	1.11 MI	3.64 MI	10.65 MI	1.49 MI	3.10 MI	0.77 MI	1.73 MI	1.50 MI	3.20 MI	1.14 MI	0.85 MI	1.17 MI	1.37 MI	2.66 MI	4.00 MI	4.01 MI	0.65 MI	0.74 MI
SEGMENT COST (IN MILLIONS)	$ 0.09	$ 0.25	$ 2.17	$ 2.69	$ 12.15	$ 4.01	$ 5.66	$ 1.73	$ 4.93	$ 7.12	$ 7.70	$ 9.77	$ 3.11	$ 2.13	$ 4.59	$ 3.82	$ 9.78	$ 2.57	$ 0.93	$ 2.69
Activity Centers	3	3	1	2	2	5	3	10	10	9	2	3	2	3	3	4	2	2	4	2
Coastal Access Connectivity	5	3	3	1	5	3	3	5	3	1	5	1	1	1	3	1	0	0	0	0
Segment Cost	5	5	4	3	1	3	2	4	3	2	1	1	3	4	3	3	1	3	5	3
Segment Length	2	5	2	4	5	2	4	1	2	2	4	2	1	2	2	3	4	5	1	1
Minimal or No Bridge Crossings	5	5	3	5	5	3	5	3	3	3	3	1	3	5	1	5	1	5	5	3
Limited ROW Constraints	0	0	1	3	5	5	5	3	5	0	1	1	3	3	3	3	3	3	1	3
Gap Closures	3	1	0	0	5	5	5	5	5	3	5	3	1	1	3	1	0	3	5	5
Public Input (Forthcoming)																				
Total Points (out of 45)	**23**	**22**	**14**	**18**	**28**	**26**	**27**	**31**	**31**	**20**	**21**	**12**	**14**	**19**	**18**	**20**	**11**	**21**	**21**	**17**

Note: *Segment Length refers to total combined length of Coastal Rail Trail and Coastal Trail alignments.

6.2.2 SEGMENT PRIORITY RANKING AND PHASING

Table 6.11 ranks the segments and places them into one of three phases. Phase I includes segments that earned 62% or more of the possible 45 points. Phase II includes segments that earned between 44% and 61% of total possible points. Phase III includes segments that earned less than 42% or less of the possible 45 points. Table 6.11 also includes a per segment cost and a phase cost.

TABLE 6.11 - Segment Priority Ranking and Phasing

ITEM	PRIORITY RANKING*																			
	1st	**2nd**	**3rd**	**4th**	**5th**	**6th**	**7th**	**8th**	**9th**	**10th**	**11th**	**12th**	**13th**	**14th**	**15th**	**16th**	**17th**	**18th**	**19th**	**20th**
Trail Segment	**8**	**9**	**5**	**7**	**6**	**1**	**2**	**19**	**18**	**11**	**16**	**10**	**14**	**4**	**15**	**20**	**3**	**13**	**12**	**17**
Total Points	31	31	28	27	26	23	22	21	21	21	20	20	19	18	18	17	14	14	12	11
% of Total Possible Points (40)	69%	69%	62%	60%	58%	51%	49%	47%	47%	47%	44%	44%	42%	40%	40%	38%	31%	31%	27%	24%
Phasing Priority	**PHASE I (62%-100%)**			**PHASE II (44% - 61%)**									**PHASE III (0%-43%)**							
SEGMENT COST (IN MILLIONS)	$ 1.73	$ 4.93	$ 12.15	$ 5.66	$ 4.01	$ 0.09	$ 0.25	$ 0.93	$ 2.57	$ 7.70	$ 3.82	$ 7.12	$ 2.13	$ 2.69	$ 4.59	$ 2.69	$ 2.17	$ 3.11	$ 9.77	$ 9.78
Phasing Total Cost	**$18,811,474**			**$32,165,322**									**$36,927,513**							

Note: *If two or more segments accumulate the same number of points, the segment with the least associated cost is given a higher priority.

6.3 PROJECT LIST

6.3.1 PHASE I PROJECTS - SHORT TERM 1 TO 5 YEARS

The trail segments identified as candidates for Phase I design and implementation are considered the most feasible for implementing within a short time frame. These segments provide gap closures to existing MBSST segments, provides access to numerous activity centers, connects to the coastal edge and beaches, and provides connectivity to other existing local and regional bikeway and pedestrian facilities. Phase I projects also fall within the railroad right-of-way corridor with minimal private land interference or significant environmental impacts. Equally important, these first phase segments, once implemented, provide stand-alone trail networks that provides regional connectivity until the later phases are negotiated, funded, designed and implemented.

TABLE 6.12 - Phase I Projects

Points	Segment	Length	Cost	Permits/ Approvals Required	Reach	Document Reference Page
31	8 - Santa Cruz Beach Boardwalk	0.77 miles	$1,731,300	TBD	Central	4-45 to 4-50
31	9 - Twin Lakes	1.73 miles	$4,932,886	TBD	Central	4-51 to 4-56
28	5 - Davenport and Wilder Ranch	10.65 miles	$12,147,288	TBD	Northern	4-25 to 4-34
	TOTALS	**13.15 miles**	**$18,811,474**			

PERMIT AND APPROVAL TYPES

A. Coastal Development Permit (CDP)

B. Section 404 permit - U.S. Army Corps of Engineers Permit (USACE)

C. Section 1602 permit - CDFG - California Department of Fish and Game (CDFG)

D. Caltrans Encroachment Permit

E. Approval by Federal Railroad Administration

F. Approval by Regional Water Quality Control Board

G. Approval by U.S. Fish and Wildlife Service

6.3.2 PHASE II PROJECTS - MID TERM 5 TO 10 YEARS

Phase II projects require a bit more lead time to resolving physical design constraints, ROW conflicts, bridge crossings, and other budgetary challenges. These segments tend to be located in difficult and narrow terrain. Following the first phase of implementation, Phase II will more likely be gap closures trail segments helping to elevate their importance for funding.

TABLE 6.13 - Phase II Projects

Points	Segment	Length	Cost	Permits Required	Reach	Document Reference Page
27	7 - Coastal Santa Cruz	3.10 miles	$5,659,147	TBD	Northern/Central	4-39 to 4-44
26	6 - Wilder Ranch Trailhead/Shaffer Road	1.49 miles	$4,014,601	TBD	Northern	4-35 to 4-38
23	1 - Waddell Bluffs	1.06 miles	$91,930	TBD	Northern	4-5 to 4-8
22	2 - Greyhound Rock-Cal Poly Bluffs	4.77 miles	$253,779	TBD	Northern	4-9 to 4-14
21	19 - Walker St/Watsonville	0.65 miles	$929,885	TBD	Watsonville	4-103 to 4-106
21	18 - Watsonville Open Space Trails	4.01 miles	$2,570,995	TBD	Watsonville	4-99 to 4-102
21	11 - Capitola-Sea Cliff	3.20 miles	$7,699,660	TBD	Central	4-61 to 4-66
20	16 - Ellicott Slough	2.66 miles	$3,823,795	TBD	Watsonville	4-89 to 4-92
20	10 - Live Oak/Jade St Park	1.50 miles	$7,121,530	TBD	Central	4-57 to 4-60
	TOTALS	**22.44 miles**	**$32,165,322**			

PERMIT AND APPROVAL TYPES

A. Coastal Development Permit (CDP)
B. Section 404 permit - U.S. Army Corps of Engineers Permit (USACE)
C. Section 1600 permit - CDFG - California Department of Fish and Game (CDFG)
D. Approval by Caltrans
E. Approval by Federal Railroad Administration
F. Approval by Regional Water Quality Control Board
G. Approval by U.S. Fish and Wildlife Service

6.3.3 PHASE III PROJECTS - LONG TERM 10 TO 15 YEARS

The Phase III segments are the most challenged trail corridors in the network. These segments are given lower priority ratings due to influences such as; high cost to construct, difficult or numerous rail crossings, narrow right-of-way, minimal access to greater population, and other limiting factors. Segments that fall under Phase III will require alternate route connection to existing and proposed on-street facilities until these segments are implemented. The design and implementation of the segments in Phase III are considered the long term rang projects with forecasted design and construction from 10 to 15 years and potentially further out depending on constraints.

TABLE 6.14 - Phase III Projects

Points	Segment	Length	Cost	Permits Required	Reach	Document Reference Page
19	14 - Seascape	1.17	$2,127,904	TBD	Watsonville	4-79 to 4-82
18	4 - Davenport Landing/ End of Railroad Tracks	3.64	$2,690,751	TBD	Northern	4-21 to 4-24
18	15 - Manresa State Beach	1.37	$4,592,440	TBD	Watsonville	4-83 to 4-88
17	20 - Pajaro River	0.74	$2,688,822	TBD	Watsonville	4-107 to 4-112
14	3 - Upper Coast Dairies at Scott Creek	1.11	$2,169,084	TBD	Northern	4-15 to 4-20
14	13 - Rio Del Mar-Hidden Beach	0.85	$3,108,249	TBD	Watsonville	4-73 to 4-78
12	12 - Aptos Village	1.14	$9,767,577	TBD	Central/Watsonville	4-67 to 4-72
11	17 - Gallighan Slough	4.00	$9,782686	TBD	Watsonville	4-93 to 4-98
	TOTALS	**14.02 miles**	**$36,927,513**			

PERMIT AND APPROVAL TYPES

A. Coastal Development Permit (CDP)

B. Section 404 permit - U.S. Army Corps of Engineers Permit (USACE)

C. Section 1600 permit - CDFG - California Department of Fish and Game (CDFG)

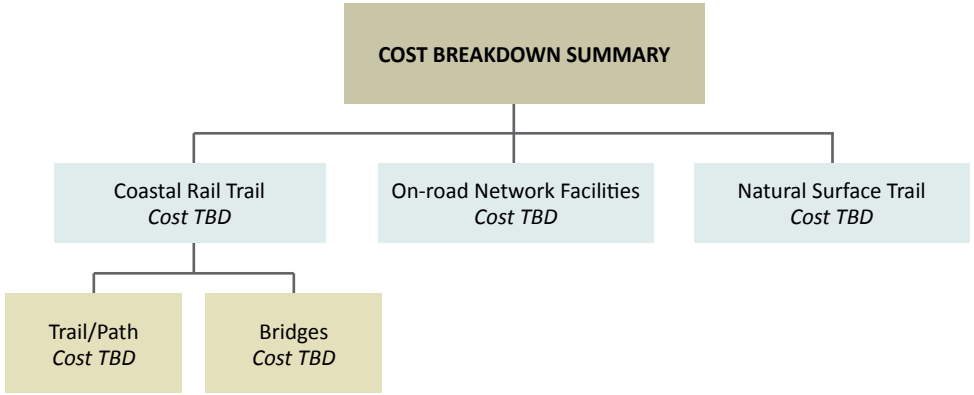
D. Approval by Caltrans

E. Approval by Federal Railroad Administration

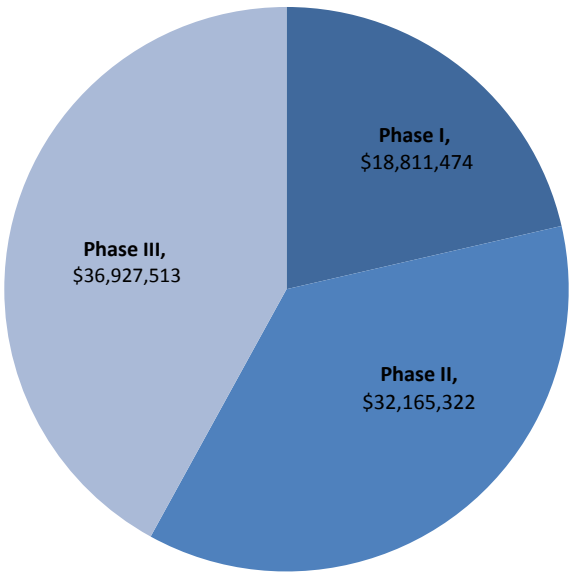
F. Approval by Regional Water Quality Control Board

G. Approval by U.S. Fish and Wildlife Service

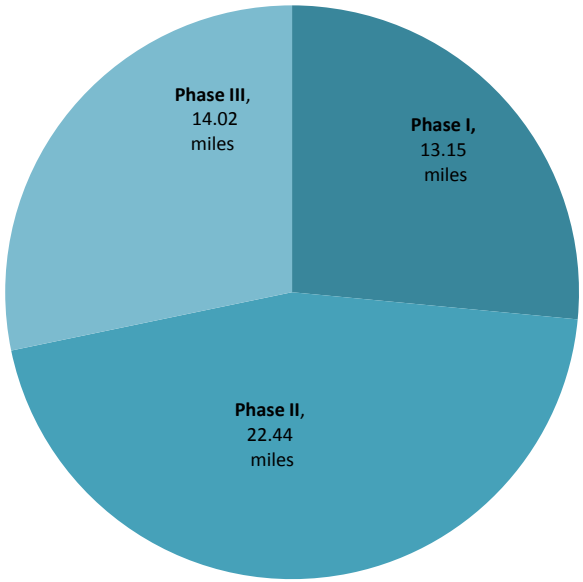
Trail facilities serve mobility and access needs and encourage non-motorized active transportation



Summary of cost by trail facility type



Cost per phase



Miles per phase

6.4 FUNDING TABLE

Table 6-14 compiles the funding sources and their relevant information into a matrix format for easy review and comparison of the source requirements such as matching requirements.

TABLE 6.15 - Funding Opportunities

Funding Source	Application Deadline	Administering Agency	Match Required	Maximum Grant	Eligible Applicants	Comments
FEDERAL						
Federal Lands Highway Funds	Varies	Federal Highway Administration (FHWA)	None	N/A	Federal and Native American land managers	Project must be identified in a plan adopted by a state or Metropolitan Planning Organization
Highway Safety Improvement Program	October	Caltrans	None	$900,000	Agency that assumes responsibility for a publicly-owned roadway	Highway safety improvement projects benefiting publicly-owned bicycle and pedestrian trails and pathways
Land and Water Conservation Fund	May	National Parks Service	50%	$3.5m	Cities, counties, or district authorized to acquire, develop, operate, and maintain park and recreation facilities	No more than 25% of the grant may be spent on non-construction costs, $3.5 million was the maximum grant awarded for FY2009
Recreational Trails Program	October	FHWA	12%	$234,000	Public agencies, non-profit organizations managing public lands	Maximum amount of funds allowed for each project is 88% of total project cost. Applicant is responsible for obtaining match amount of at least 12% of the total project cost, $234,000 was maximum grant awarded recently

TABLE 6.15 - Funding Opportunities

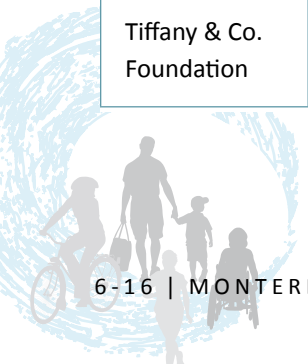
Funding Source	Application Deadline	Administering Agency	Match Required	Maximum Grant	Eligible Applicants	Comments
Rivers, Trails and Conservation Assistance	August	National Park Service (NPS)	None	N/A	State or local agency, tribe; non-profit organization or citizens' group; federal agencies, including NPS, may apply with non-federal partner	Projects demonstrating tangible conservation and recreational results in the near future
Transportation, Community and System Preservation Program	Varies	FHWA	20%	$974,000	States, MPOs, local governments, tribes	Intended to integrate transit systems and preserve communities. FHWA does not provide a maximum grant award. $974,000 was the maximum grant awarded in FY2010
STATE						
Bicycle Transportation Account	December	Caltrans	10%	$1.2M	Public agencies with a Caltrans approved bicycle plan	Projects must be identified in a Caltrans approved bicycle plan
California Coastal Conservancy	None	California State Coastal Conservancy	None	Varies	Public agencies and non-profits with purposes consistent with California Code Division 21	Trails with statewide significance (California Coastal Trail)
California Conservation Corps	None	California Conservation Corps (CCC)	N/A	N/A	Public land managers	CCC provides labor assistance for maintaining trails
Community-Based Transportation Planning Program	April	Caltrans	10%	$300,000	Public agencies, transit agencies, tribes, non-profits	Purpose is to fund integrated transportation and land use planning

TABLE 6.15 - Funding Opportunities

Funding Source	Application Deadline	Administering Agency	Match Required	Maximum Grant	Eligible Applicants	Comments
Environmental Enhancement Program	November	Caltrans	None	$350,000	Public agencies, non-profits	Project must be directly or indirectly related to mitigating the environmental impact of existing transportation facility
Habitat Conservation Funds	October	California Dept. of Parks and Recreation	50%	None	Public agencies	Grant award may also include habitat restoration near trails
Statewide Park and Community Revitalization Program	March	California State Parks	None	$5.0M	Cities, counties, districts and Joint Powers Authorities	Projects must be in the most undeserved communities in California and part of a development project
Wildlife Conservation Board Public Access Program	Continuous	Wildlife Conservation Boar	None	$250,000	Public agencies, non-profits	The state must have a proprietary interest in the project
River Parkways Program	Fall	Resources Agency	None		Governments, non-profits, community organizations	

TABLE 6.15 - Funding Opportunities

Funding Source	Application Deadline	Administering Agency	Match Required	Maximum Grant	Eligible Applicants	Comments
LOCAL						
AB 2766	June	Monterey Bay Unified Air Pollution Control Dist.	None	$200,000 - $400,000	Public agencies located within Monterey County, Santa Cruz County, and/or San Benito County	Collection of an additional $4 in motor vehicle registration fees to fund various air pollution reduction efforts
Transportation Development Act (TDA)						
General Fund					City of Capitola, City of Santa Cruz	Funds are likely to be spent on maintenance of existing facilities
Gas Tax						Funds are likely to be spent on maintenance of existing facilities
Development Impact Fees	N/A	Public land owners	N/A	N/A	N/A	Local land owners can require developers to construct trails as part of developments
NON-TRADITIONAL						
State Administered Community Block Grant	Continuous	Housing and Urban Development	N/A	N/A		
American Greenways Program	June	The Conservation Fund	None	$1,200	Non-profit organizations and public agencies	Purpose is to stimulate trail and greenway planning
Bikes Belong	Continuous	Bikes Belong	None	$10,000	Non-profit organizations and public agencies	Grants may be used for facility implementation and advocacy efforts
Tiffany & Co. Foundation	Continuous	Tiffany & Co. Foundation	None	N/A	Non-profit organizations	Supports the enhancement of urban environments through revitalization and creation of green spaces.



6.5 PERMITS AND APPROVALS

Typically each segment or combination of segments that is pursued as a project will involve obtaining several permits and agreements. This section summarizes the types of permits and the basic process for each.

COASTAL DEVELOPMENT PERMIT – SANTA CRUZ COUNTY OR COASTAL COMMISSION

Nearly any kind of improvement – even signs, requires a Coastal Development Permit (CDP). Signs and other rudimentary improvements can be approved administratively, but the projects contained in the Master Plan are significant and will require a full permit and hearing.

Santa Cruz County will handle the majority of CDP applications, but the Coastal Commission itself will hear appeals of a locally-approved CDP. The legal standard of review includes the public access and recreation policies contained in Chapter 3 of the California Coastal Act.

U.S. ARMY CORPS OF ENGINEERS (USACE) PERMIT

A Section 404 Permit application to the USACE for placement of fill, including consultation with the U.S. Fish and Wildlife Service, may be required to satisfy the requirements of Section 404(b)(1) of the Clean Water Act (CWA).

A Jurisdictional Delineation Report, or wetland delineation is part of the technical studies required in any location where there is potential for wetlands to occur. This maps and obtains USACE concurrence on jurisdictional "Waters of the U.S.," including wetlands (if present), and/or "Waters of the State".

STREAMBED ALTERATION AGREEMENT – CALIFORNIA DEPARTMENT OF FISH AND GAME (CDFG)

A Section 1602 Lake or Streambed Notification/Application for a Streambed Alteration Agreement will need to be submitted to CDFG for any work that may impact a stream or related riparian habitat.

CALTRANS ENCROACHMENT PERMIT - CALTRANS OR SANTA CRUZ COUNTY

Where the project involves work or permanent improvements within the State highway right-of-way or County road right-of-way an encroachment permit from Caltrans or the County will be required. This typically requires a maintenance agreement with either a public agency or a non-profit organization to ensure that the MBSST facilities in the highway right-of-way will be adequately maintained.

FEDERAL RAILROAD ADMINISTRATION APPROVAL - FORTHCOMING

SECTION 401 WATER QUALITY CERTIFICATION - REGIONAL WATER QUALITY CONTROL BOARD (RWQCB)

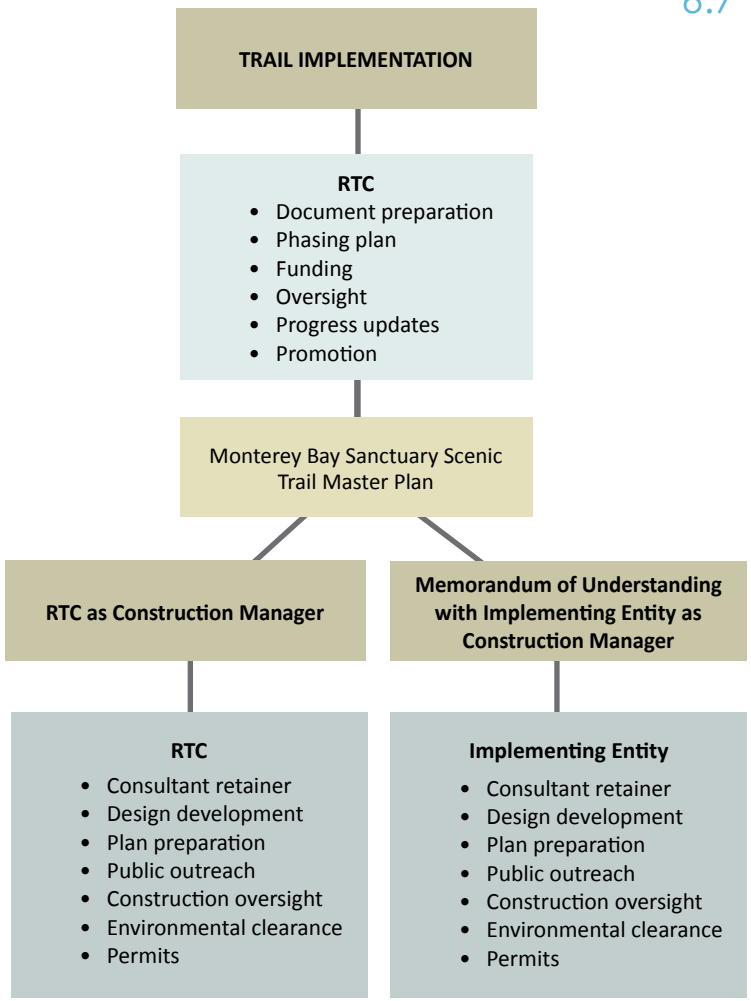
Many MBSST projects will be required to prepare a RWQCB CWA Section 401 Water Quality Certification (WQC) notification/application to the local RWQCB, which may include a Storm Water Pollution Prevention Plan (SWPPP). The issuance of the WQC is necessary prior to the issuance of an USACE CWA Section 404(b)(1) permit.

6.6 ADMINISTRATION

Administration of the Coastal Rail Trail will involve both the RTC and the implementing entities. The RTC will remain the property owner and will continue to provide regional policy oversight for the corridor and coordination with rail operator. The RTC staff will provide a forum for public input throughout the trail development process, augmenting public input in the local planning and design process.

As owner of the trail corridor, the RTC will continue to provide regional policy and oversight for the MBSST

6.7 TRAIL IMPLEMENTATION



An implementing entity is defined as a city, county, RTC, State Park, or other body

In regards to trail network improvements, the main role of the RTC is to provide ongoing coordination services and funding for implementation of the Trail. The RTC will take the lead in preparing a memorandum of understanding (MOU) between itself and implementing entities to clarify roles, responsibilities for design, development, construction, monitoring, and maintenance of the Trail. The RTC may itself act as a project manager.

The following describes the RTC's implementation responsibilities in greater detail:

- Phasing - Using Section 6.3 as a guide, the RTC will coordinate with implementing entities to identify segments that are to be implemented.
- Funding - Upon identification of a segment, the RTC will organize a funding strategy to design, construct, and maintain the segment. RTC staff will assist implementing entities in developing fundable projects, matching projects with funding sources, and helping to complete competitive funding applications. In some cases, RTC may act as the project sponsor or cosponsor.
- Progress - Through board presentations, website notifications, and other venues, the RTC will provide regular updates to the public regarding the status of the trail development.
- Oversight - The RTC will work closely with implementing entities, planning, parks, and public works staff to implement trail segments.
- Coordination - Finally, should the RTC incur additional operating expenses to coordinate implementation, maintenance, operation and liability of the trail through agreements with implementing entities, funding will need to be identified.

The following describes implementing entities' responsibilities in greater detail:

- Once the segment as been identified and funded, the RTC and/or implementing entities may employ in-house staff or retain a qualified bicycle and pedestrian trail planning consultant to design the trail construction documents. After review by the RTC's advisory committees and implementing entities, boards and committees, the RTC will review and approve of all trail designs submitted by the implementing entities.
- In conjunction with implementing entities and/or trail planning consultant, a series of workshops should be conducted to introduce the project to the public and to identify any new information not included in this master plan.
- Implementing entities will be responsible for overseeing any necessary environmental clearance. The implementing entities will obtain the necessary planning, environmental, and development permits.
- The RTC may oversee project construction in consultation with the implementing entity and/or trail planning consultant.

6.8 TRAIL IMPLEMENTATION OVER JURISDICTIONAL BOUNDARIES

The 20 trail alignment segments incorporate logical start and end points based on physical and/or geographical features. In some instances, it was necessary to extend the segment across the jurisdictional boundary to the next significant physical feature. The RTC owns the approximately 32 mile long Santa Cruz Branch Railroad corridor right-of-way, allowing the RTC to act as the primary developer of the trail.

The RTC intends to work closely with the City of Santa Cruz, Santa Cruz County, City of Capitola, City of Watsonville, and State Parks where the segment crosses jurisdictional boundaries or when the segment is located solely within their jurisdiction.

The RTC owns the approximately 32 mile long Santa Cruz Branch Railroad corridor right-of-way, allowing the RTC to act as the primary developer of the trail.

SECTION SEVEN CONTENTS

This section addresses the strategies the Santa Cruz County Regional Transportation Commission could employ to manage, operate, and maintain portions of the project over time, working towards the completion of the trail network.

SECTION SEVEN
OPERATION AND MAINTENANCE

7.1 OPERATIONS AND MAINTENANCE

The overall goal of the operations and maintenance (O&M) plan is to ensure that the Monterey Bay Sanctuary Scenic Trail (MBSST) is operated in an efficient and safe manner for trail users and adjacent uses. As such, this O&M Plan identifies the responsibilities, tasks, procedures, estimated operations and trail maintenance costs and other aspects related to the management of the trail. The RTC may adopt modified or additional policies as future conditions warrant.

The O&M Plan for the MBSST is an important component that will help ensure that safe and productive public facilities are retained over the next several decades. The O&M Plan is intended to provide key considerations required to operate and maintain the trail facilities and help minimize potential liability considerations associated with the multi-use path facilities. The O&M Plan program addresses specific strategies to guide the implementing entities to ensure that adequate standards are accounted for to protect the RTC's investment for the MBSST project as well as the users of the trail system.

7.1.1 OPERATIONS

Operational activities associated with the MBSST facilities will consist primarily of developing regulatory information to define the rules and regulations of the facilities, methods for documenting and monitoring trail accidents, and establishing security measures aimed at reducing any negative activities along the trail facilities.

Developing specific rules and regulations for the multi-use MBSST facilities are an important consideration in reducing potential conflicts along the trail. In addition, the need to monitor collisions, including the collision type, and identification of primary causes of collisions and then following through and rectifying any physical deficiencies associated with conflict points must be the responsibility of the implementing entities. Law enforcement and/or Fire should be responsible for collecting collision information and identifying causes that may have contributed to the collision and documenting this information appropriately.

Implementing entities should be given responsibility for identifying and improving physical or operational conditions that may have contributed to any conflict along the trail. In addition, the implementing entity typically should be responsible for warning users of any problems and obstructions as well as to close the trail when conditions warrant. Educational materials, trailhead kiosks, signage, and promotional events should also be considered as tools to inform trail users and reduce the potential for collisions.

Pavement markings will need to be re-applied on a periodic basis

Signs should be kept clear of stickers and graffiti

Vegetation will need to be pruned to a minimum vertical clearance of 10 feet

Trail maintenance will include removing sand from paved surfaces

Litter receptacles should be emptied on a regular basis

Example of root intrusion on paved trail surface

7.1.2 MAINTENANCE

A comprehensive maintenance program of the MBSST should be considered an ongoing and long-term investment designed to protect the resources of the County. There are several maintenance activities that should be considered. As defined in the O&M Plan, each activity has an estimated frequency schedule that should be initiated and refined and a primary agency that is charged with leading the maintenance activity. Many of the maintenance activities defined in the O&M Plan are dependent on the final design and implementation of the trail amenities, materials, degree of landscape improvements, and amount of support infrastructure that is developed along the trail.

The following list indicates general maintenance activities anticipated for the MBSST:

- Shoulder and grass mowing
- Prune and remove fallen trees
- Trash disposal
- Pavement sealing, repaving and pothole repairs
- Bollard replacement
- Irrigate plants
- Graffiti removal
- Fountain and restroom cleaning and repair
- Pavement sweeping and marking replacement
- Weed control
- Tree, shrub and grass trimming and fertilization
- Sign replacement and repair
- Fence and barrier repair and replacement
- Clean drainage system
- Maintain irrigation lines and replace sprinklers
- Lighting replacement and repair
- Maintain furniture
- Maintain emergency telephones
- Bridge inspection

7.1.3 SAFETY

MBSST user safety is considered a significant element in the O&M Plan. The MBSST system can expect trail user conflicts to occur even though the trail network is an ideal urban trail corridor with a pre-existing defined rail corridor right-of-way, a limited number of street intersection crossings (many of which are low traffic volume neighborhood streets), and adequate easement width to ensure open and visual connectivity. The fact that the trail will include a two-way multi-use pathway designed to separate trail users from vehicular traffic is exceptional. However, conflicts between different trail users may still occur. Specific safety concerns are addressed in various sections throughout the Master Plan.

Safety fence in need of repair

7.2 TRAIL OPERATION AND MANAGEMENT

While the implementing entities are primarily responsible for the management of the trail facilities, there should be one contact point (the Trail Manager) that will be made available to the general public.

While the implementing entities are primarily responsible for the management of the trail facilities, there should be one contact point (the Trail Manager) that will be made available to the general public within their jurisdictions for general inquiries and management. The RTC board should work to identify the agency most appropriate to house a Trail Management Program and how to fund a Trail Manager, Trail Ranger, and/or an adopt-a-trail coordinator position. The Trail Manager will ensure that each element described in the O&M Plan is completed.

7.2.1 TRAIL MANAGEMENT RESPONSIBILITIES

Identify the agency most appropriate to house a Trail Management Program and how to fund a Trail Manager, Trail Ranger, and/or an adopt-a-trail coordinator position.

The following list represents the major tasks that may be the responsibility of the Trail Manager for trail management:

- Coordinate development of the MBSST
- Organize, coordinate, and implement trail operations plan
- Implement maintenance plan and assure adequate funding
- Obtain bids and manage contracts for maintenance and improvements
- Monitor security and safety of the trail through routine inspections
- Oversee maintenance and rehabilitation efforts
- Manage and respond to issues and incidents
- Act as the local trail spokesperson with the public, including elected officials, and respond to the issues and concerns raised by trail users
- Develop and manage an emergency response system in coordination with local fire and police
- Respond to direction regarding development and construction of the project and ongoing maintenance

7.2.2 LIABILITY AND INDEMNIFICATION

In general, liability risks for neighbors of multi-use paths are well protected and probably reduced from current levels by the recreational use statute and other statutes. Assuming the MBSST is designed, built, and operated to meet applicable laws and regulations, the liability risks will be significantly reduced. However, there is always the potential condition of liability for implementing entities that owns and operates public use facilities such as a multi-use pathway system. To minimize this risk, the implementing agency should adhere to the risk management strategies identified in Section 7.2.5. Implementing entities should consider obtaining insurance to provide the necessary liability protection.

7.2.3 INSURANCE

It is assumed that the trail will be covered under existing insurance policies of implementing entities or the RTC. This will be verified for each segment as implementation arrangements are made. There is typically no additional premium cost associated with the operation and maintenance of a trail. However, while insurance may cover costs associated with lawsuits, it neither prevents suits nor minimizes the risk of court judgments that can cost the implementing entity a considerable sum of money. In some cases, a property owner who has granted property use to an implementing entity for a trail may require an additional insurance policy covering potential lawsuits.

7.2.4 GOVERNMENTAL TORT CLAIMS ACT

In order to encourage the development of trails, California has legislation related to civil lawsuits that establish the limits of government liability for injuries to persons or damage to property resulting from the acts or omissions of government officials. Government Code § 831.4 provides protection against claims made against public entities for injury on trails. It states:

"A public entity, public employee, or a grantor of a public easement to a public entity for any of the following purposes, is not liable for an injury caused by the conditions of:

(a) Any unpaved road which provides access to fishing, hunting, camping, hiking, riding, including animal and all types of vehicular riding, water sports, recreational or scenic areas and which is not (1) a street or highway, or (2) a county, state or federal highway, or (3) a public street or highway of a joint highway district, boulevard district, bridge and highway district or similar district formed for the improvement or building of public streets or highways.

(b) Any trail used for the above purposes.

(c) Any paved trail, walkway or sidewalk on an easement of way which has been granted to a public entity, so long as such public entity shall reasonably attempt to provide adequate warnings of the existence of any condition of the paved trail, walkway, path or sidewalk which constitutes a hazard to health or safety. Warnings required by this subdivision shall only be required where pathways are paved, and such requirement shall not be construed to be a standard of care for any unpaved pathway or roads."

Trail/road surveillance camera

Automated information kiosk concept

7.2.5 RISK MANAGEMENT STRATEGIES

To minimize liability, it is critical to adhere to all applicable laws and regulations. The design standards for the MBSST project should be consistent with the Caltrans Highway Design Manual and the AASHTO Guide for the Development of Bicycle Facilities. Other practical measures include the following:

- Post and enforce trail regulations
- Post warning signs for known hazards that are not easily identified
- Prepare a trail maintenance plan and keep accurate maintenance records
- Inspect the trail for hazards
- Evaluate hazards and maintenance problems reported by trail users and address with appropriate measures
- Ensure the provision of adequate emergency access points to the trail
- Accommodate emergency vehicles when the trail is more than 500' from public roads
- Illuminate entry points and street-grade crossings
- Trim vegetation to maximize visibility and utility
- Provide bicycle racks at key destination points that allow for both frame and wheels to be locked, consider bicycle lockers at key inter-modal locations and/or destination sites
- Provide the County Fire and law enforcement with a map of the MBSST system, along with access points and keys or combinations to gates and bollards
- Enforce speed limits and other rules of the road
- Plant or modify landscaping so as to reduce the possibility of "hiding" places for illegal activities
- Incorporate screen landscaping such as climbing vines adjacent to private fencing.
- Choose trees that avoid excessive leaf litter, minimize root invasion, are of an evergreen variety and are planted a minimum of 10 feet from residential property lines where possible
- Maintain shrubs below 3 feet in height where law enforcement requires visual access adjacent to public streets

7.2.6 PRIVATE PARTY PROTECTION

While the Coastal Rail Trail will be located along an existing publicly owned right-of-way corridor, a number of private properties are located directly adjacent to the proposed MBSST right-of-way. Neighbor concerns regarding path location near their properties typically include a loss of visual privacy and concerns about increased crime, vandalism, noise, and fire. Criminal activity is not likely to occur along a path that is well planned, designed, operated, maintained, and as a result, well used.

Privacy fencing may be incorporated into the trail to screen or separate private property from users of the right-of-way. Property owners should be permitted to install gates leading directly onto the path, if desired.

7.2.7 EMERGENCY VEHICLE ACCESS

The Trail Manager shall be responsible for observing trail operations to ensure the trail can accommodate all emergency (police and fire) vehicles that might need to get on the trail. If removable bollards are installed, the Trail Manager shall ensure that all appropriate agencies have the keys for access. The MBSST itself is generally accessible from adjacent public rights-of-way. However, where it is not, a minimum 10 feet of pathway clearance and 12 feet of vertical clearance should be provided.

7.3 TRAIL AND RAIL OPERATION INTERFACE

7.3.1 DESIGN

There are few universally accepted national standards or guidelines to dictate trails facility design adjacent to active railroad tracks, therefore trail designers should work closely with the railroad operator and maintenance staff to achieve a suitable design. Well-designed trails can meet the operational requirements of railroads, often providing benefits in the form of reduced trespassing and dumping. However, a poorly designed trail will compromise safety and function for both trail users and the railroad.

7.3.2 SETBACK DISTANCE

The term “setback” refers to the distance between the edge of a paved multi-use path and the centerline of the closest active railroad track. Although paved multi-use paths currently are operating throughout the United States along train corridors of varying types, speeds, and frequencies, there is no consensus on an appropriate setback recommendation. Therefore, it is up to the rail operator and trail designer to come to an agreement based on the following factors:

- Type, speed, and frequency of trains in the corridor
- Separation technique
- Topography
- Sight distance
- Maintenance requirements
- Historical problems

Based on discussions with Santa Cruz and Monterey Bay Railway (a subsidiary of Iowa Pacific Holdings) and the understanding that every trail segment is different, the setback distance should be determined on a case-by-case basis. The minimum setback distance ranges from eight feet and six inches (8’ and 6”) to twenty-five feet (25 ft), depending on the circumstances. In many cases, additional setback distance may be recommended. The lower setback distances may be acceptable to the railroad operator or agency and design team in such cases as constrained areas, along relatively low speed and frequency lines, and in areas with a history of trespassing where a trail might help alleviate a current problem. The presence of vertical separation or techniques such as fencing or walls also may allow for a narrower setback.

7.4 TRAIL AND AGRICULTURAL OPERATION INTERFACE

From the onset of the MBSST trail planning process, a key focus was to accurately identify and resolve agricultural land use compatibility issues. Several methods of information collection and issue resolution relating to agricultural operations were employed during the trail planning process. Adjacency issues faced by the agricultural community are addressed through preventative design measures presented below. Some of the proposed measures are design related and others are operational in nature (a function of the on going management of the trail).

7.4.1 PESTICIDE SPRAYING AND BURN ACTIVITY

Notices Posted

- Trail entrances will be posted with notices of on-going agricultural activities stating that the trail user agrees to using the trail at his/her own risk
- Trail users will be advised that agricultural operations will be occurring and may include pesticide spraying, agricultural dust and debris, and burning activities in accordance with State and local laws and ordinances
- Notices will state that the trail may be subject to closure without notice to accommodate such activities

Ability for Trail Closures

- The trail will be designed with the ability for its physical closure (of isolated segments) in the event it becomes necessary to facilitate permitted spraying
- Notification to the Trail Manager of impending spraying activity will be the responsibility of the agricultural operators

The Santa Cruz County Agricultural Commissioner's office is responsible for issuing pesticide spraying permits and regulating the use of pesticides and other agricultural chemicals. The implementing entity will work with the Agricultural Commission's office to minimize impacts to agricultural operators because of the development of the adjacent trail as long as pesticides and other agricultural chemicals are applied in compliance with the label, worker safety requirements, weather conditions, drift restrictions, and all other safety requirements as required by federal, state and local laws.

7.5 TRAIL ADJACENT TO RESIDENTIAL PROPERTY OWNERS

7.5.1 FACILITATE COMMUNICATION WITH ADJACENT PROPERTY OWNERS

The Trail Manager will provide adjacent property owners with contact information for each jurisdiction and the departments that handle routine trail maintenance. Adjacent property owners will also be informed of any changes in trail operations and any major trail rehabilitation or expansion projects.

7.5.2 RESPOND TO ADJACENT PROPERTY OWNER CONCERNS

Adjacent property owners should be treated like clients. Responding effectively to problems they identify lets them know that they are important to the successful operation of the Trail.

7.5.3 KEEP THE TRAIL WELL MAINTAINED

A well-maintained trail is probably the best thing an agency can do to keep adjacent property owners happy. The local agency shall pay close attention to the operation of driveways that cross the trail to access property and make sure to keep landscaping in those areas well trimmed to prevent any safety problems from developing. Remove any graffiti as quickly as possible.

7.5.4 DEVELOPMENTS ON ADJACENT PROPERTIES

Changes in land use adjacent to the Trail can have a significant impact on the quality of the trail experience. Incompatible uses can create safety hazards, complicate operations, and seriously tarnish the aesthetic and recreational appeal of a trail. Land use can be controlled so long as it is consistent with existing zoning laws. The key is to:

- Ensure that the County and City Planning Departments keep the Trail Manager informed of land-use and building permit applications.
- Work with developers early in the planning process to make sure the interface between development and the trail is appropriately designed.

7.6 OPERATING RESPONSIBILITIES AND PROCEDURES

The Trail Manager will coordinate with each department, organization, or person who will be responsible for each of the activities involved in operating and maintaining the trail. This includes documents for landscape maintenance and scheduling, sweeping crews for routine trail surface cleaning, traffic operations division for sign replacement and intersection traffic control, and the police and fire departments for developing emergency response procedures. The following topics address specific operating procedures and responsibilities.

7.6.1 DEVELOPING TRAIL USE REGULATIONS

The purpose of trail regulations is to promote user safety and enhance the enjoyment of all users. It is imperative that before the MBSST is opened, it includes posted trail use regulations at trailheads and key access points. Trail maps and informational materials should include these regulations as well. Establishing that the trail facility is a regulated environment like other public parks and rights-of-way is critical.

Below are recommended trail regulations for adoption and enforcement by the implementing entity:

- Hours of use: dawn to dusk where lighting cannot be installed
- Motor vehicles, except service or emergency vehicles, are prohibited
- Power assisted devices such as wheelchairs are allowed
- Electric bikes and segways are permitted unless prohibited by local ordinance
- Skateboards are allowed
- In-line skates are allowed
- Horses are only permitted on Segments 5.1, 5.2, and 5.3 or on state park property where expressly allowed
- Keep to the right except when passing
- Yield to on-coming traffic when passing
- Bicycles always yield to pedestrians
- Give a vocal warning when passing
- Pets must always be on a leash no more than 6 feet in length
- Dog owners must clean up after their dogs
- Travel no more than two abreast
- Littering prohibited
- No amplified sound i.e. portable “boom boxes” (except with permit for special events)

Security patrol on bikes

Emergency call station

- Alcoholic beverages are not permitted on the trail
- Do not wander off trail onto adjacent properties
- Do not stand in middle of trail when stopped
- 15 mph speed limit
- 10 mph speed limit in special zones of convergence i.e. bridge crossings, and staging areas
- Trail users yield to maintenance vehicles
- Trail regulations should conform to existing implementing entity and State regulations, ordinances, and laws
- Be alert and attentive
- Electric bikes and segways allowed where local ordinances so indicate

7.6.2 SIGNAGE

Installing key regulatory signs at regular intervals along the trail will help users internalize the rules. This would include “Bicyclists Yield to Pedestrians,” “Pass on the Left,” “Slower Traffic Stay Right,” and speed limits. Enforcement by repetition may be the most inexpensive and effective kind. Refer to the MBSST Master Plan and Manual of Uniform Traffic Control Devices (MUTCD) for appropriate signage, markings, and locations.

7.6.3 MBSST TRAIL PATROLS

The Trail Manager may wish to consider either professional or volunteer trail patrols to augment police patrol for the MBSST. As a rule of thumb, a multi-use trail will require one dedicated person-hour per day for every five miles of actively used trail, and 0.5 person-hours per day for every five miles of low-use trail. This figure is likely to vary seasonally and by day of week.

7.6.4 MBSST TRAIL CLOSURES

The MBSST, or sections of the trail, may be closed from time to time during periodic maintenance of the trail. Users must be warned of impending trail closures, and given adequate detour information to bypass the closed or unfinished section of trail.

The policy for the procedures that will be followed prior to the trail closing, including a variety of means to inform the public, are listed below:

- The Trail Manager will make every effort to provide at least 48 hours advance notice to the affected agencies to post signs at all trail entrances on the impacted segments to be closed indicating the duration of the closure, doing everything possible to keep the public informed, and make every effort to keep the closure period as short as possible
- The local agency will physically close off the trail that is being closed with barriers, and post “Trail Closed” signs
- The local agency will provide “Detour” signs where trail users can reasonably be re-routed to other routes. If no reasonable alternate routes are available, the trail should have an “End Trail” sign and provide access to the street and sidewalk system
- Where re-paving is not 100% complete, provide warning signs for bicyclists to slow down or dismount where needed

Seacliff Beach Pier and the Palo Alto Cement Ship in Aptos. This two mile, sandy beach includes camping, swimming, fishing, bicycling, roller blading, and many other recreational activities.

7.7 TRAIL MAINTENANCE PLAN

Proper maintenance of the trail is of the utmost importance for the productive use of the facility and the protection of the financial investment the RTC, implementing entities and the public have made in the MBSST. The following is a list of trail maintenance activities to supplement existing local practices.

TABLE 7.1 - Trail Maintenance Activities and Frequencies

Item	Estimated Frequency
Shoulder and grass mowing	As needed
Removal of fallen trees	As needed
Trash disposal	Weekly
Fill potholes	As needed
Bollard replacement	As needed
Irrigate/water plants*	Weekly - monthly, as needed
Fountain cleaning and repair	Monthly, repairs as needed
Pavement sweeping	Monthly - annually, as needed
Weed control	Monthly - as needed
Tree, shrub, & grass trimming/fertilization	5 months - 1 year
Sign replacement/repair	1-3 years
Repaint pavement markings	1-3 years
Fence/barrier repair/replacement	Immediate
Clean drainage system	1 year
Maintain irrigation lines/replace sprinklers	1 year
Lighting repair/replacement	As needed
Maintain furniture	1 year
Maintain emergency telephones	As needed
Pavement sealing/repaving	30-40 years

*If feasible, the County should use low water use and low maintenance plant materials for the MBSST.

Many of these maintenance items are dependent on the type and amount of landscaping and supporting infrastructure that is developed along the trail. It is recommended that the Trail Manager coordinate maintenance activities so as to minimize impacts to trail users and to maximize cost efficiencies.

7.8 ADMINISTRATION AND COST

Funding for operating and maintenance of the MBSST, including related administrative costs, will most likely need to be programmed annually through local jurisdictions or implementing agencies general fund.

The MBSST will have specific administrative, legal, operations, and management costs associated with ongoing maintenance and operation cost. Funding for operating and maintenance of the MBSST, including related administrative costs, will most likely need to be programmed annually through local jurisdictions or implementing agencies general fund. Additional sources of operation and maintenance funding may be provided through lease agreements for communications infrastructure, vendors etc.

7.8.1 ADMINISTRATIVE COSTS

The trail management responsibility will be placed with a senior staff person in the agency identified by the RTC with dedicated funding. This Trail Manager has widespread responsibility, ranging from managing and monitoring maintenance activities, coordinating with adjacent property owners, responding to and monitoring reported problems, maintaining records, managing a budget, pursuing outside funding sources, and coordinating with other cities along the trail. It is projected that this responsibility would take up to 10% to 30% of a full time employee's time at a fee of $10,000 to $30,000 annually. Funding for this proposition would need to be identified.

7.8.2 MAINTENANCE COSTS

The estimated annual cost for maintenance of the Trail as described in Table 7.1 will be approximately $6,000 -$10,000 per mile per year. This depends on the intensity of design amenities and frequency of operation and maintenance that is provided. There are likely to be economies of scale when the trail is 100% complete and based on the length of the facility.

Implementing agencies will be responsible for any structure, culvert, or natural condition within its easement, regardless of whether it is a pre-existing condition or not. Existing bridge structures along the trail shall be modified in such a way to provide safe access for trail users, yet minimize the historic integrity of the bridges as defined.

7.8.3 OPERATIONS AND MAINTENANCE COST SAVING OPTIONS

- Share maintenance equipment with local schools and other City and County parks
- Create an Adopt-a-Trail program
- Involve local non-profit groups in a volunteer patrol program

7.8.4 LEGAL COSTS

While liability is not expected to be a significant problem based on research of existing similar trails, there may be additional legal costs in the form of insurance premiums, litigation, and settlements. For the purposes of this trail, it is recommended that the implementing agencies use the same legal cost factor that it uses for any new facility such as a park or school, either on an acreage basis or user-day basis.

7.9 IMPLEMENTATION MEMORANDUM OF UNDERSTANDING

RTC acquired the title to the railroad right-of-way corridor from the Union Pacific Railroad. RTC's primary obligation and responsibility, as the property owner, through the use of state funds, is to maintain a right-of-way for existing and future rail service. Because there is wide community interest in also using the railroad right-of-way-for a bicycle and pedestrian trail, the RTC will also use the right-of-way to provide such a trail. The RTC may implement and maintain the trail but it may also do so through arrangements with entities interested in implementing the trail. The arrangements could be formalized through memoranda of understanding (MOU). The MOU's should identify a bicycle and pedestrian path as a future use of the right-of-way, and also address issues such as finances, administrative structure, maintenance, encroachment permits, leases, licenses, and easements, and other appropriate items. The MOU's would serve as the underlying legal framework to help guide the development and management of the bicycle and pedestrian trail along the railroad right-of-way.

The RTC may implement and maintain the trail but it may also do so through arrangements with entities interested in implementing the trail. The arrangements could be formalized through memoranda of understanding (MOU).

APPENDIX A

Opportunity and Constraint Maps

SHEET 1

OPPORTUNITY SUMMARY

- Connects to Waddell Beach and Big Basin Redwoods State Park
- Connection to San Mateo County
- Visitor use facilities at Waddell Beach; potential for hostel or other low-cost accommodations inland from Highway 1
- Regional connection to Skyline to the Sea Trail
- Adjacent to and part of the Pacific Coast Bike Route corridor
- Geologic and natural interpretive opportunities
- Alternatives for future replacement of outmoded Waddell Creek Highway 1 bridge may include modest inland realignment, and present opportunities for stream channel restoration, pedestrian and bike highway undercrossings for safe inland connections to and from Waddell Beach, and safe north-south bicycle and pedestrian crossings of Waddell Creek
- Repurpose existing Highway 1 bridges for multi-use trail crossings of Waddell Creek and Scott Creek, if feasible and consistent with wetland restoration goals

CONSTRAINT SUMMARY

- Geological hazard exposure to users on Highway 1 along Waddell Bluff formation
- High liquefaction potential at Waddell Creek crossing, also early sea level rise and shoreline erosion impacts
- Trail limited to narrow roadway corridor north of Waddell Creek Beach
- Narrow Highway 1 bridge crossing at Waddell Creek, no alternative for bicyclists
- Coordination with Caltrans for right-of-way use
- No railroad corridor available for shared trail use in this reach
- South of Waddell Beach, beach route exposed to high tide, storm waves and tsunami hazards
- Environmentally Sensitive Habitat Areas (ESHA's): Monterey pine forest, dune habitats, steelhead stream, high value wetlands
- Hazardous surface crossing of Highway 1 at Waddell Beach; pedestrians must dodge speeding motor traffic to access inland areas of Big Basin Redwoods Specific Plan

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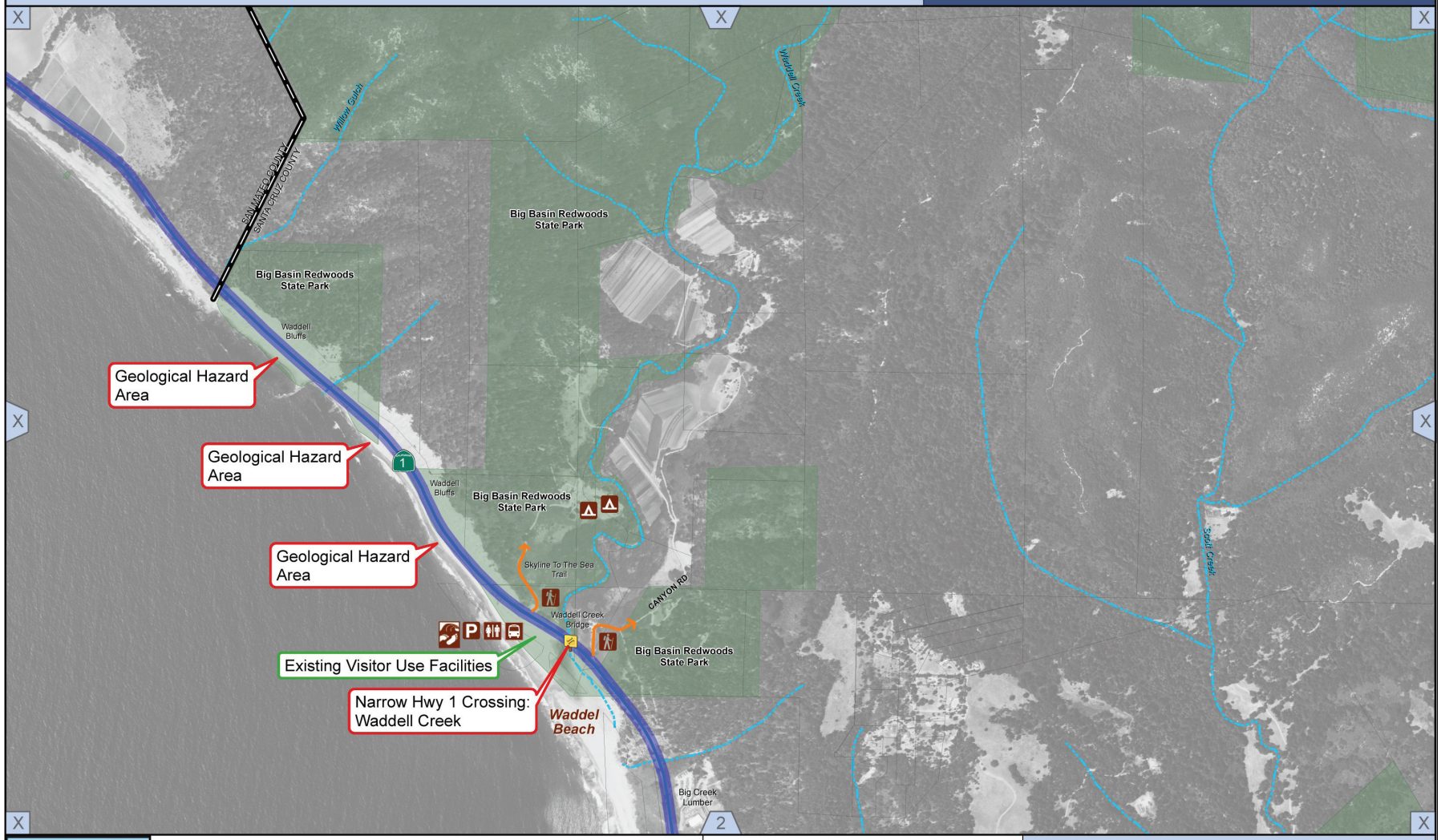
Opportunities and Constraints
Northern Reach



MONTEREY BAY SANCTUARY SCENIC TRAIL

LEGEND

Route Designations
- Previous MBSST* Core Alignment
- Pacific Coast Bike Route (PCBR)
- MBSST and PCBR Combined

Trail Alignments
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- Class II - Proposed
- Class III - Proposed
- Unpaved Trails - Proposed
- Pajaro River Trails - Proposed
- Class I - Existing
- Class II - Existing
- Class III - Existing
- Unpaved Trails - Existing

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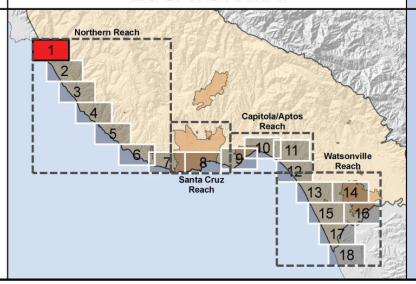
Geographic Elements
- County Boundary
- School Location
- City Limits
- Assessors Parcels
- Parcels With Recorded Access
- Streams
- Protected Public Areas in Fee
- Connection to Regional Trail System
- Constraint
- Opportunity

Transportation Features
- RR Centerline
- RR Crossings
- RR Width-Constrained Area
- Milepost Markers
- Public Parking
- Bus Stop
- Hwy 1 Bridge Crossing
- Coastal Access
- RR Bridge Crossing

Existing Corridor Amenities
- Connection to Existing Trail
- Campground
- Restroom
- Barrier Free Facilities

LOCATOR MAP



SOURCE AND REFERENCE DATA

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1 in = 500 ft

Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet
Projection: Lambert Conformal Conic
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6) Hillshade NED data from CaSIL

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SHEET 2

OPPORTUNITY SUMMARY

- Connects to multiple beaches
- Connects Waddell Beach to Scott Creek Beach and multiple beach and public facilities in between
- Existing visitor use facilities at several of the public beaches along this segment
- Adjacent to and part of the Pacific Coast Bike Route corridor
- Good coastal scenic overlook areas
- Slight realignment of Highway 1 (where eroding bluffs impinge on highway ROW) would allow space for roadside path and/or Class II shoulder improvements

CONSTRAINT SUMMARY

- Geological hazard at several spots on the west side of Highway 1
- Federal Emergency Management Agency (FEMA) flood zone and tsunami hazard along shoreline at Waddell Beach, Greyhound Rock and Scott Creek Beach
- Trail options limited to narrow roadway corridor and coastal edge southwards from Pelican Rock, unless agreement secured with Cal Poly-Swanton
- Coordination with Caltrans for right-of-way use
- Cost of Highway 1 Bridge replacement needed to accommodate bike and pedestrian facilities

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Opportunities and Constraints
Northern Reach

MONTEREY BAY SANCTUARY SCENIC TRAIL

LEGEND

Route Designations
- Previous MBSST* Core Alignment
- Pacific Coast Bike Route (PCBR)
- MBSST and PCBR Combined

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- Class III - Proposed
- Unpaved Trails - Proposed
- Pajaro River Trails - Proposed
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- Class III - Existing
- Unpaved Trails - Existing

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Geographic Elements
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- City Limits
- Assessors Parcels
- Parcels With Recorded Access
- Streams
- Protected Public Areas in Fee
- Connection to Regional Trail System
- Constraint
- Opportunity

Transportation Features
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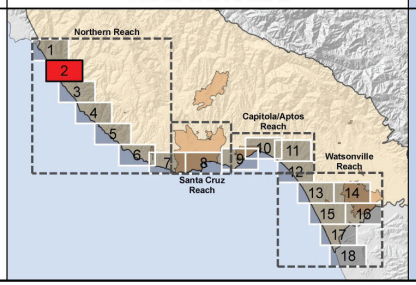
- RR Crossings
- RR Width-Constrained Area
- Milepost Markers
- Public Parking
- Bus Stop
- Hwy 1 Bridge Crossing
- Coastal Access
- RR Bridge Crossing

Existing Corridor Amenities
- Connection to Existing Trail
- Campground
- Restroom
- Barrier Free Facilities

LOCATOR MAP



SOURCE AND REFERENCE DATA

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SHEET 3

OPPORTUNITY SUMMARY

- Coastal trail continuity southward from Scott Creek Beach
- Connection to existing visitor use facilities at Davenport Landing Beach
- Adjacent to and part of the Pacific Coast Bike Route corridor
- Abandoned railroad fill through wetlands east of Highway 1 could provide excellent interpretive and connector trails, subject to Cal Poly-Swanton agreement
- Repurpose existing Highway 1 bridges for multi-use trail crossings of Waddell Creek and Scott Creek, if feasible and consistent with wetland restoration goals
- If replacement of Scott Creek Highway 1 bridge entails an inland realignment, opportunities for wetland and stream channel restoration will be possible - and any retained segments of the existing highway alignment could be repurposed for coastal access

CONSTRAINT SUMMARY

- Narrow highway 1 bridge at Scott Creek
- Coordination with Caltrans for right-of-way use
- No railroad corridor available for shared trail use in this reach; former Ocean Shore railroad ROW controlled by Cal Poly east of Highway 1
- No railroad corridor available for shared trail use in this reach
- High level of engineering for trail grade
- Narrow existing Highway 1 bridges with no bike and pedestrian facilities
- Possible small creek crossings
- ESHA's: high quality wetlands, steelhead stream, snowy plover nesting
- North of Scott Cree, trail options limited to Highway 1 ROW - unless agreement can be secured with Cal Poly-Swanton

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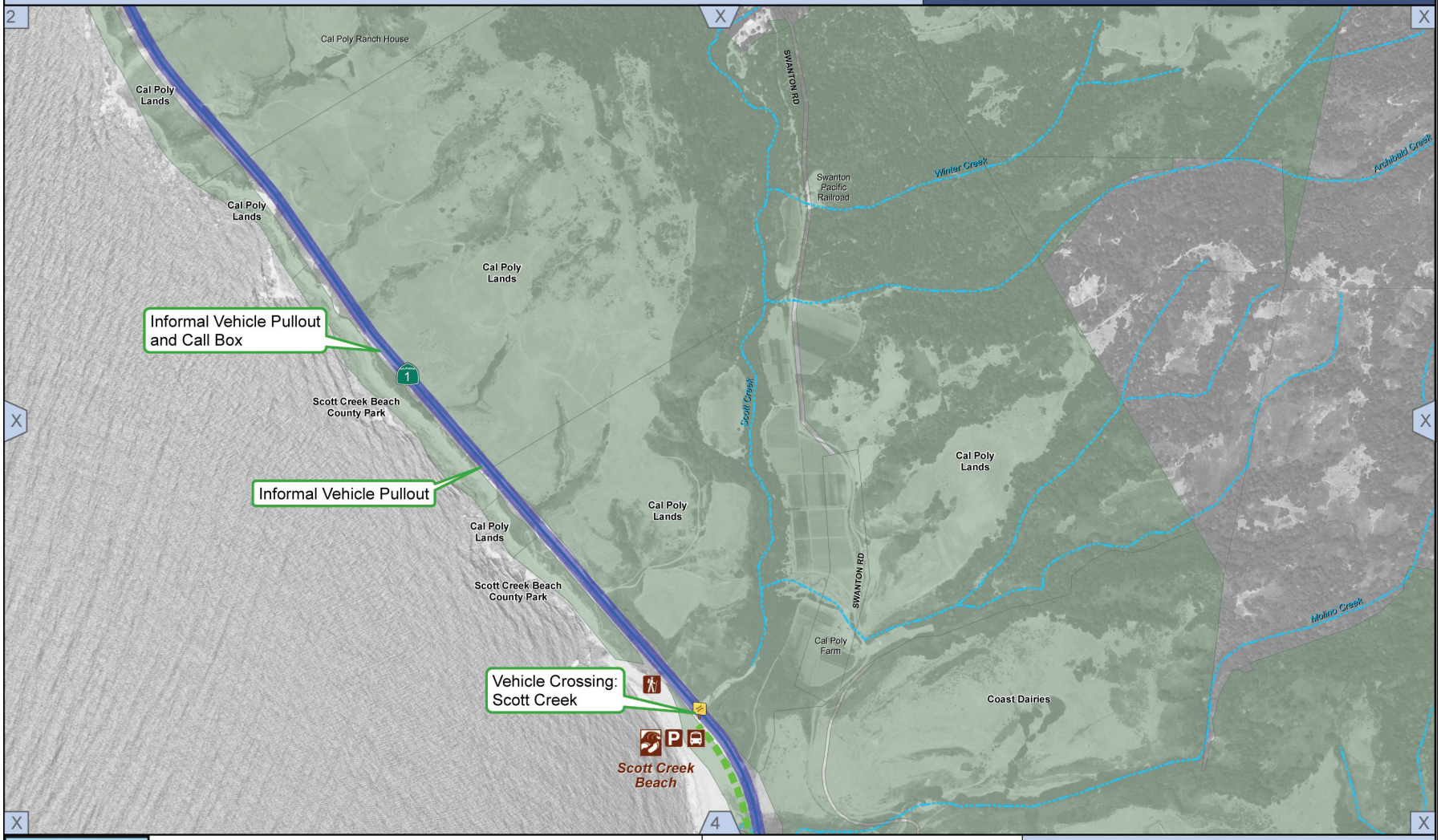
Opportunities and Constraints
Northern Reach



LEGEND

Route Designations
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- MBSST and PCBR Combined

Trail Alignments
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- Class III - Proposed
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- Pajaro River Trails - Proposed
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- Class II - Existing
- Class III - Existing
- Unpaved Trails - Existing

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Geographic Elements
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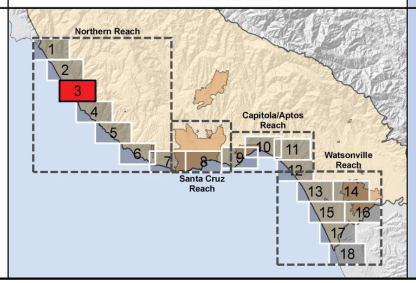
- School Location
- City Limits
- Assessors Parcels
- Parcels With Recorded Access
- Streams
- Protected Public Areas in Fee
- Connection to Regional Trail System
- Constraint
- Opportunity

Transportation Features
- RR Centerline
- RR Crossings
- RR Width-Constrained Area
- Milepost Markers
- Public Parking
- Bus Stop
- Hwy 1 Bridge Crossing
- Coastal Access
- RR Bridge Crossing

Existing Corridor Amenities
- Connection to Existing Trail
- Campground
- Restroom
- Barrier Free Facilities

LOCATOR MAP



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SHEET 4

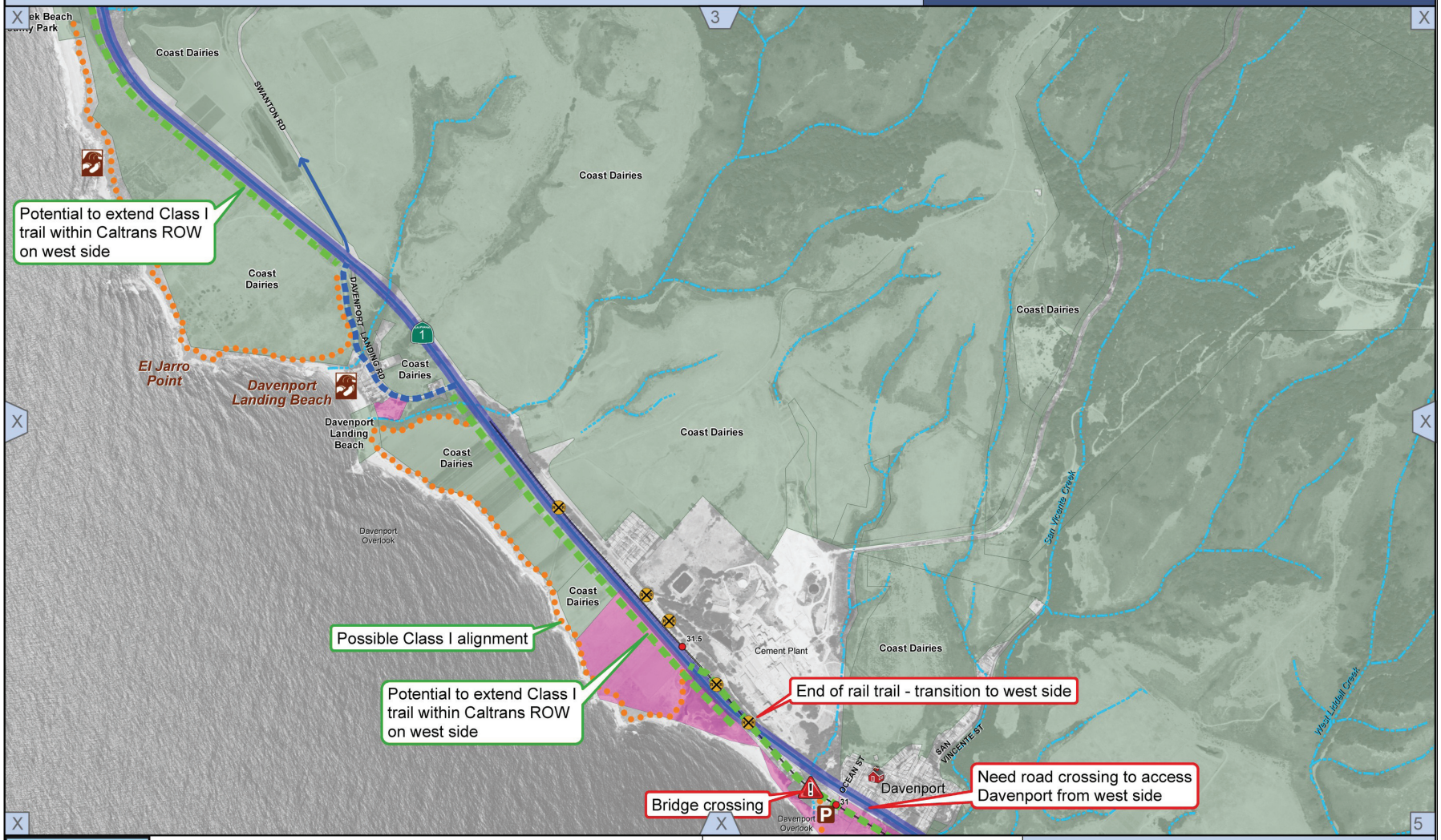
OPPORTUNITY SUMMARY

- Coastal trail connection from Davenport Landing Beach to Town of Davenport
- Connection to existing visitor use facilities at Davenport Landing Beach
- Adjacent to and part of the Pacific Coast Bike Route corridor
- Trail intersection crossing of Highway 1 at Davenport Landing Road; topography suitable for future pedestrian and bike undercrossings to low-use Cement Plant Road (a potential alternative to west side Class I construction)
- North begin/end point of coastal rail trail corridor.
- Trail crossing of Highway 1 at existing signalized railroad highway crossing; opportunity for pedestrian/bike undercrossing connnection(s) to commercial area of Davenport on inland side of Highway 1
- Good coastal scenic overlook areas along bluff top especially El Jarro Point
- Connection to northern most end of railroad corridor
- Potential alternatives for replacement of Scott Creek Highway 1 bridge include inland realignment, northward from vicinity of Swanton Road; would offer potential for repurposing highway surface as extension of MBSST Class I bike path
- Existing parking area a good potential interim end for off-highway bike trail if coupled with pedestrian undercrossing to Davenport businesses

CONSTRAINT SUMMARY

- FEMA flood zone and tsunami hazard along shoreline at Davenport Landing Beach
- Non-controlled pedestrian/bike crossing of Highway 1 and Davenport Landing Road intersection; would require pedestrian and bike undercrossing if connecting to Cement Plant Road
- Coordination with Caltrans for right-of-way use and highway crossing(s)
- Possible small creek crossings
- Need modified signal railroad crossing of Highway 1 at the cement Plant site to accommodate trail users, unless pedestrian and bike undercrossings can be installed
- On-street bike and pedestrian facilities along Davenport Landing Road
- Coordination with Cement Plant land owner for adjacent trail alignments east side of Highway 1

Opportunities and Constraints
Northern Reach



MONTEREY BAY SANCTUARY SCENIC TRAIL

LEGEND

Route Designations
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- Pacific Coast Bike Route (PCBR)
- MBSST and PCBR Combined

Trail Alignments
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- Unpaved Trails - Proposed
- Pajaro River Trails - Proposed
- Class I - Existing
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Geographic Elements
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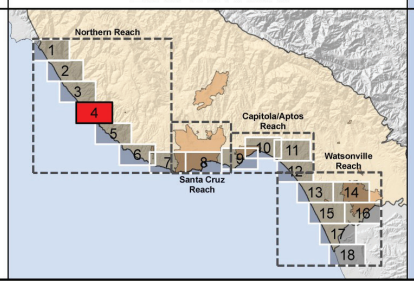
- Parcels With Recorded Access
- Streams
- Protected Public Areas in Fee
- Connection to Regional Trail System
- Constraint
- Opportunity

Transportation Features
- RR Centerline
- RR Crossings
- RR Width-Constrained Area
- Milepost Markers
- Public Parking
- Bus Stop
- Hwy 1 Bridge Crossing
- Coastal Access
- RR Bridge Crossing

Existing Corridor Amenities
- Connection to Existing Trail
- Campground
- Restroom
- Barrier Free Facilities

LOCATOR MAP



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SHEET 5

OPPORTUNITY SUMMARY

- Coastal trail along west rail ROW from Davenport to Wilder Ranch State Park
- Connection to existing coastal bluff top trails and public beaches
- Adjacent to and multiple connection points to the Pacific Coast Bike Route corridor
- Good coastal scenic overlook areas along bluff top
- Trail signalized intersection crossing of Highway 1 at Davenport; topography suitable for future pedestrian and bike undercrossings at north and south extremities of commercial district
- Connects the existing MBSST from the City of Santa Cruz to Davenport with a Class I facility extending from Shaffer Road to the Cement Plant north of Davenport

CONSTRAINT SUMMARY

- Coordination with Caltrans, State Parks, Agricultural Operators, and Rail Agency
- Several narrow segments and culvert crossings along the rail ROW
- Long segment lengths
- Multiple agriculture operations access roads

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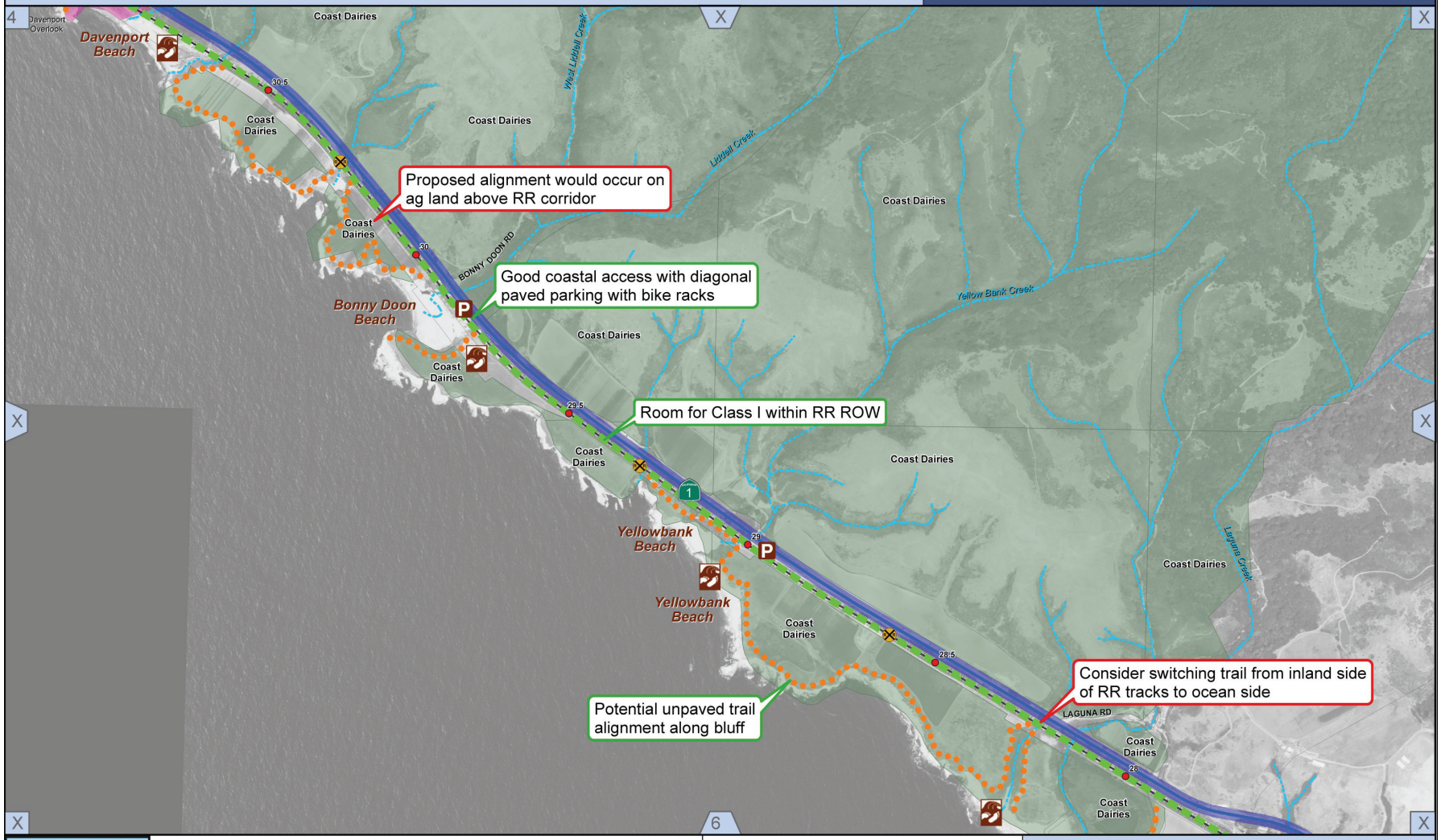
Opportunities and Constraints
Northern Reach



MONTEREY BAY SANCTUARY SCENIC TRAIL

LEGEND

Route Designations
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- Pacific Coast Bike Route (PCBR)
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Trail Alignments
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- Class I - Existing
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Geographic Elements
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- Constraint
- Opportunity

Transportation Features
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- RR Crossings
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- RR Bridge Crossing

Existing Corridor Amenities
- Connection to Existing Trail
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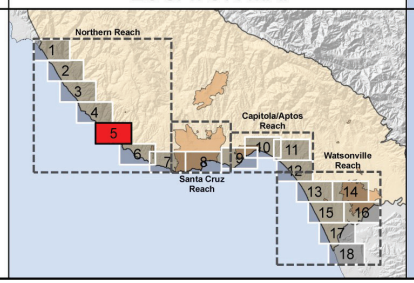
LOCATOR MAP



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SHEET 6

OPPORTUNITY SUMMARY

- Provides continuous connection of the trail along the west side of the rail corridor
- Connection from northern most end of railroad corridor to existing Class I trail in Wilder Ranch State Beach.
- Existing tunnel under Highway 1 provides connection to inland areas of Wilder Ranch Specific Plan (near Baldwin Creek)
- Continue unpaved trail back to railroad ROW for loop trail to San Hill Bluff

CONSTRAINT SUMMARY

- Existing marsh trail seasonal foot bridge

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Opportunities and Constraints
Northern Reach

LEGEND

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- Constraint
- Opportunity

Transportation Features
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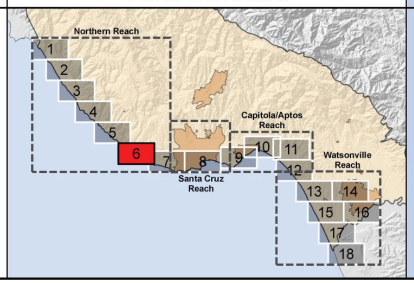
LOCATOR MAP



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SHEET 7

OPPORTUNITY SUMMARY

- Compound connectivity to residential, schools, employment centers, museums, beaches, and other visitor and resident destination areas
- Segment connection creates multiple bike and pedestrian loop systems along the corridor
- Adjacent and within ¼-mile walking distance to high residential population, three schools, for off-street multi-use access to existing coastal trail system
- Regional commuter gap closure for north side of Santa Cruz
- Off-street connection to multiple recreation areas and provides safer universal access
- Connection to Wilder Ranch State Park trail network, interpretive areas, and beaches
- Connection to Pacific Coast Bike Route corridor
- Creates Class I loop within Wilder Ranch State Beach for alternate coastal access, if Class I completed along the railroad ROW between Wilder Ranch and Antonelli Pond
- Cost of a new pedestrian bridge crossing adjacent to the existing rail trestle bridge crossing of Antonelli Pond
- Duplication of parallel trail alignment with the existing Class I facility in Wilder Ranch
- Potential improved connections between Wilder Ranch Specific Plan and Natural Bridges State Beach, Inc. via potential future path connecting railroad ROW, across inland extremity of University of California Santa Cruz (UCSC) Terrace Point area to Delaware Avenue; and, from Antonelli Pond path to Delaware Avenue Trailhead in Natural Bridges State Beach
- Potential shoreline route between Natural Bridges State Beach and Terrace Point blufftop trail, if stairs installed (security gate may be needed for night closure, per UCSC requirements)

CONSTRAINT SUMMARY

- Crossing of Moore Creek and or rail trestle bridge retrofit to accommodate bike and pedestrian lateral access
- Fifteen (15) rail track at-grade street crossings
- Need permit from CUP for new pedestrian at-grade crossing of Shaffer Road
- Need three (3) trail at-grade rail track crossings
- Up coast from Natural Bridges State Beach, a vertical cliff approximately 15-20 feet high prevents connection between informal shoreline path and Terrace Point loop trail

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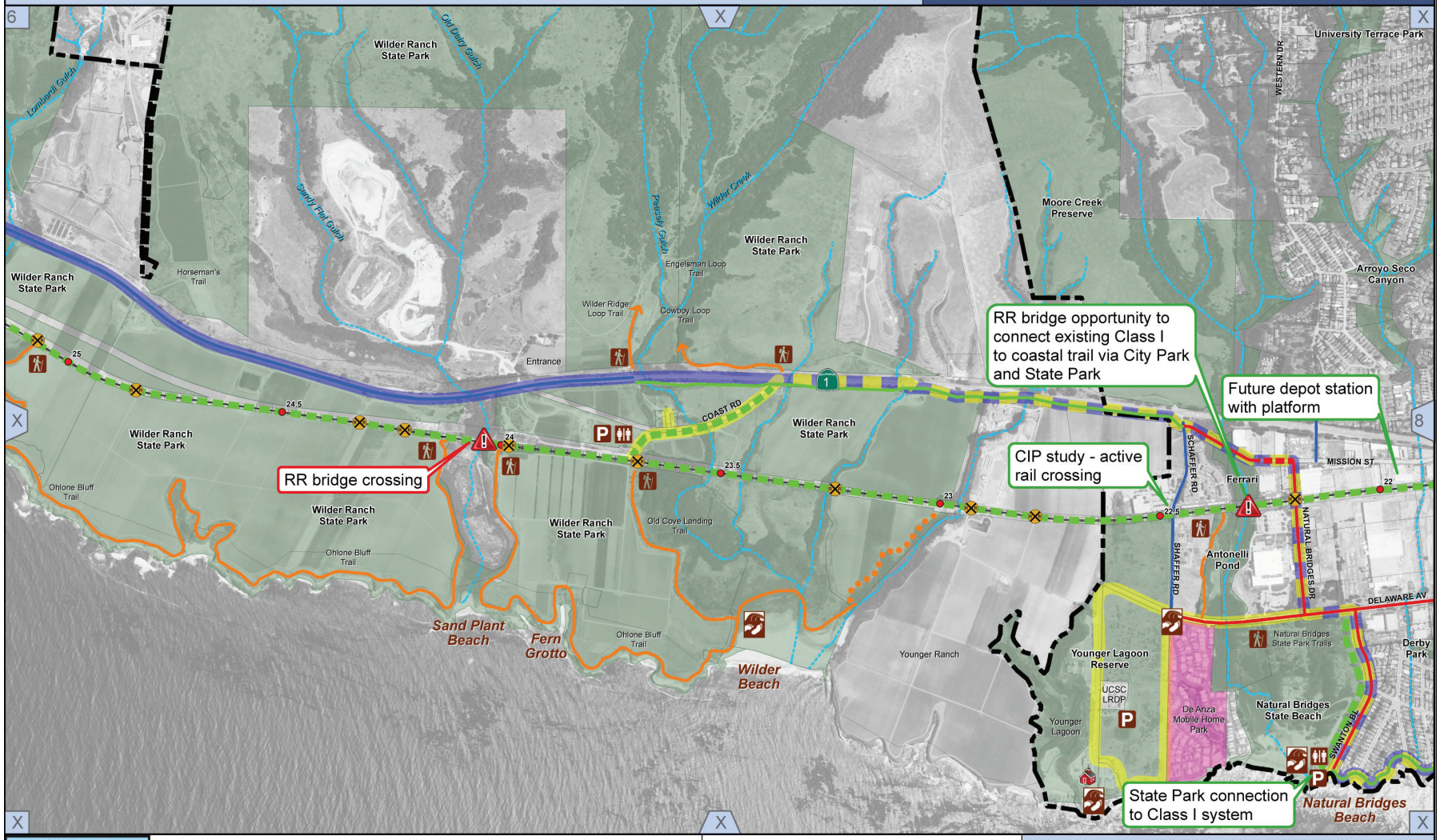
Opportunities and Constraints
Northern Reach/Central Reach



LEGEND

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Existing Corridor Amenities
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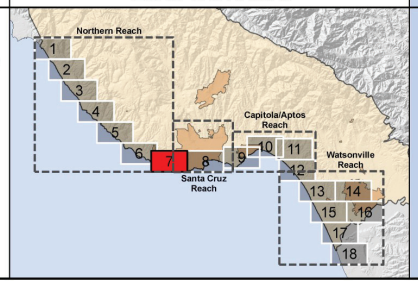
- Restroom
- Barrier Free Facilities

LOCATOR MAP



SOURCE AND REFERENCE DATA

Date: 1/17/2012

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1 in = 500 ft

Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
Units: Foot US

Sources:
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SHEET 8

OPPORTUNITY SUMMARY

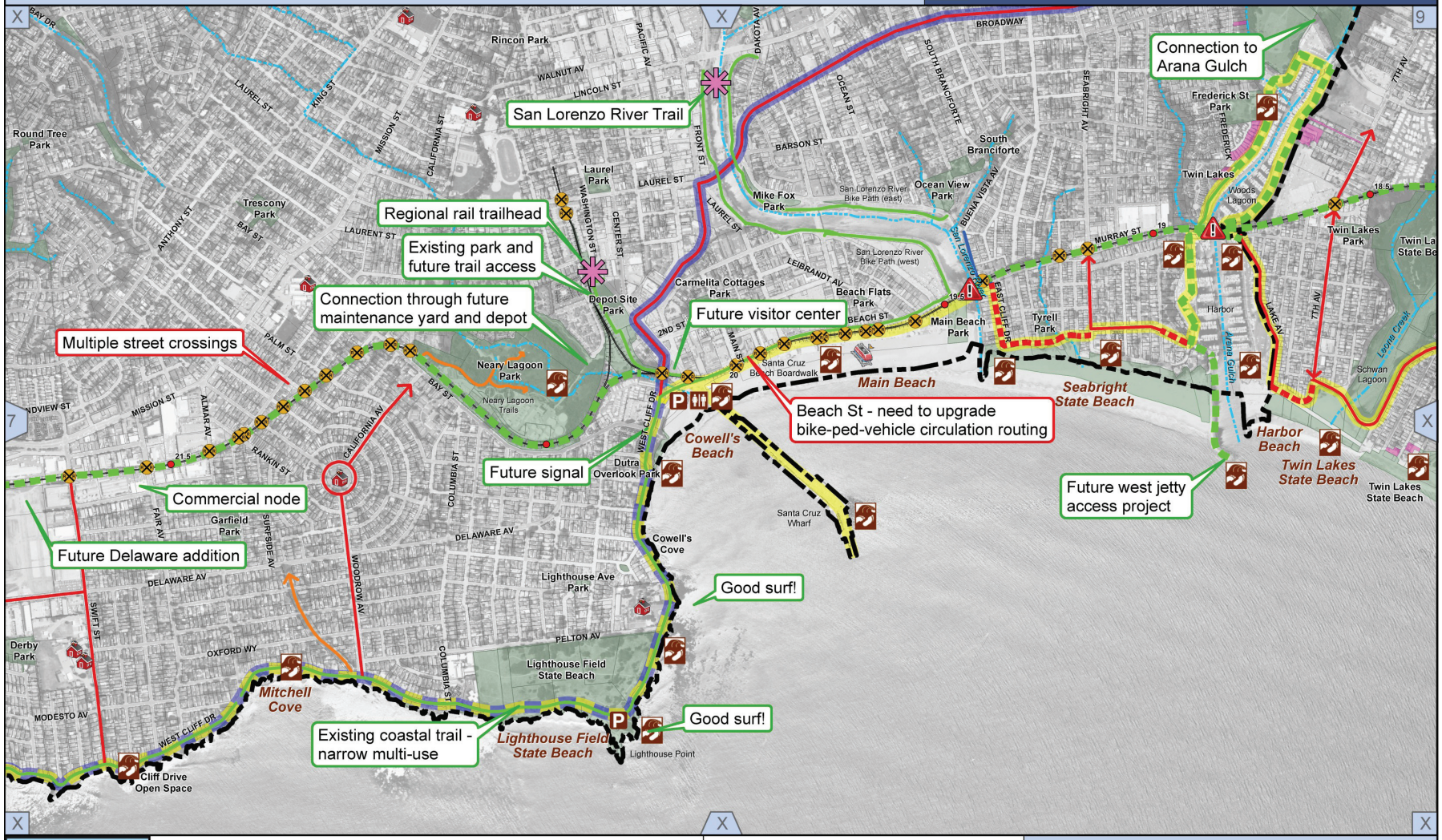
- Link to existing rail trail and park facilities at Depot Park
- Part of the Monterey Bay Sanctuary Scenic rail corridor; direct access to new Monterey Bay National Marion Sactuary Exploration Center and municipal wharf
- Compound connectivity to residential, schools, employment centers, museums, beaches, and other visitor destination areas
- Segment connection creates multiple bike and pedestrian loop systems along the corridor
- Adjacent and within ¼-mile walking distance to high residential population, schools, for off-street multi-use access to existing coastal trail system and beaches
- Connection to Pacific Coast Bike Route corridor
- Complete clifftop path between San Lorenzo River and Harbor, incorporating sidewalk segments along East Cliff Drive
- Upgrade operating schedule for Harbor shuttle, as alternative water crossing mode

CONSTRAINT SUMMARY

- Current crossing of West Cliff Drive and Beach Street intersect is unsafe for pedestrians and bikes
- Awkward crossing angle of the bike trail and railroad tracks on Beach Street
- Bike access to rail trestle crossing of San Lorenzo River is unclear
- Rail steel truss bridge at mouth of San Lorenzo River needs retrofit or new separate pedestrian/bike bridge crossing
- Crossing of Woods Lagoon bridge retrofit to accommodate bike and pedestrian lateral access
- Very narrow rail corridor immediately east of 7th Avenue

SCCRTC | Monterey Bay Sanctuary Scenic Trail Master Plan

Opportunities and Constraints
Central Reach



LEGEND

Route Designations
- Previous MBSST* Core Alignment
- Pacific Coast Bike Route (PCBR)
- MBSST and PCBR Combined

Trail Alignments
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- Class II - Proposed
- Class III - Proposed
- Unpaved Trails - Proposed
- Pajaro River Trails - Proposed
- Class I - Existing
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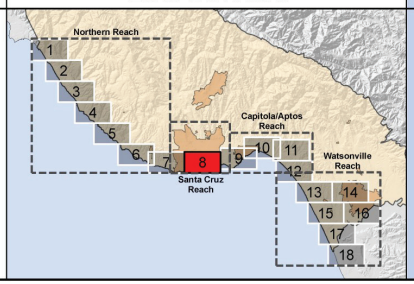
*MBSST refers to the Sanctuary Scenic Trail: Standards Manual document from 2005

Geographic Elements
- County Boundary
- School Location
- City Limits
- Assessors Parcels
- Parcels With Recorded Access
- Streams
- Protected Public Areas in Fee
- Connection to Regional Trail System
- Constraint
- Opportunity

Transportation Features
- RR Centerline
- RR Crossings
- RR Width-Constrained Area
- Milepost Markers
- Public Parking
- Bus Stop
- Hwy 1 Bridge Crossing
- Coastal Access
- RR Bridge Crossing

Existing Corridor Amenities
- Connection to Existing Trail
- Campground
- Restroom
- Barrier Free Facilities

LOCATOR MAP



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SHEET 9

OPPORTUNITY SUMMARY

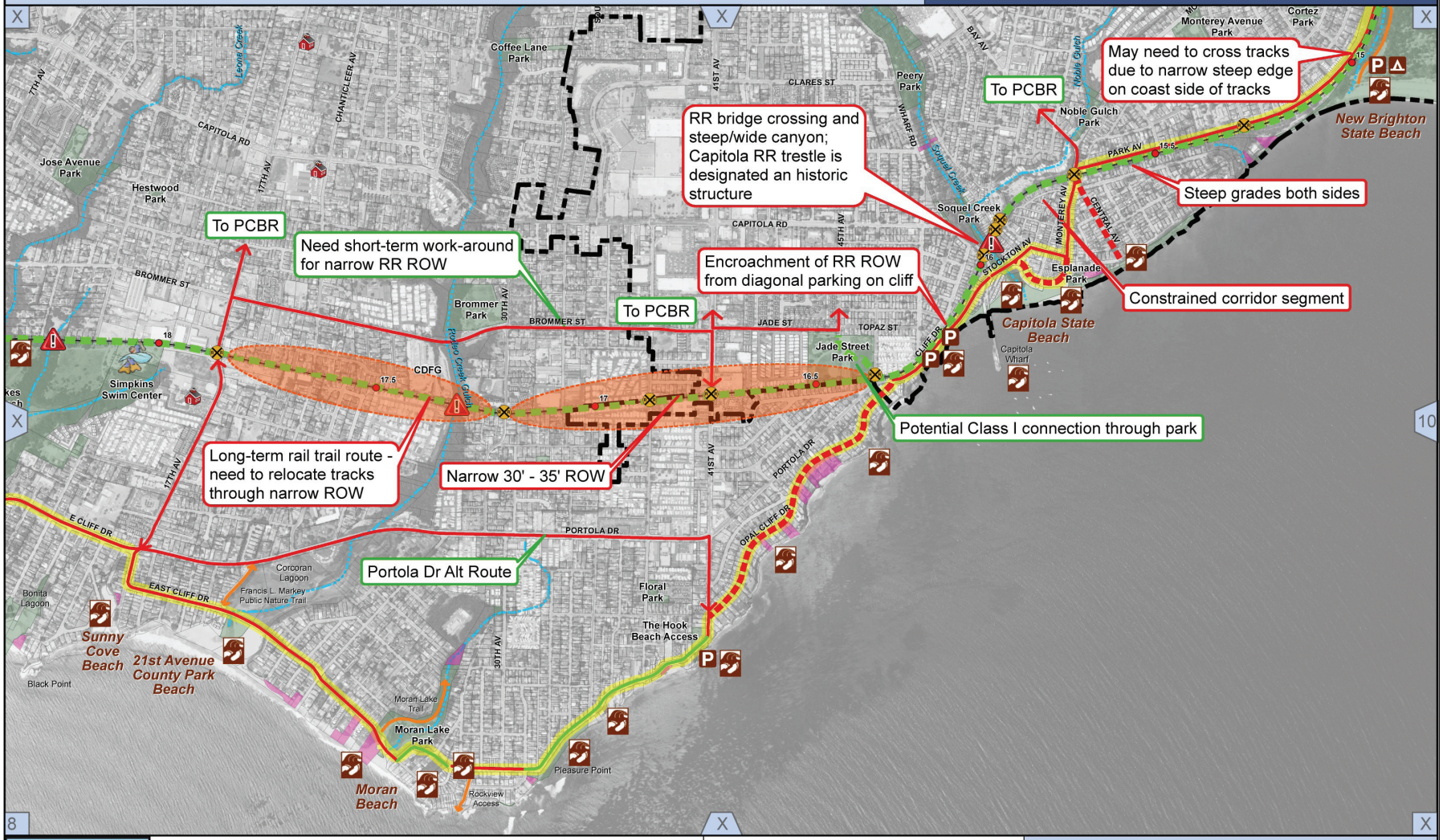
- Link to existing trails and park facilities at Twin Lakes Park and Simpkins Family Swim Center
- Compound connectivity to residential, schools, employment centers, beaches, and other destination areas
- Segment connection creates multiple bike and pedestrian loop systems along the corridor
- Trail adjacent and within ¼-mile walking distance to high residential population, schools, for off-street multi-use access to existing coastal trail system
- Regional commuter gap closure for south side of Santa Cruz and connection to Capitola
- Off-street connection to multiple recreation areas and provides safer universal access
- Existing Cliff Avenue staircase, paved paths and low-use residential streets could be linked to provide continuous blufftop walking route from Capitola Beach to New Brighton State Beach (via Grand Avenue and El Salto Drive or Escalona Drive)

CONSTRAINT SUMMARY

- Crossing of Soquel Creek Lagoon bridge retrofit to accommodate bike and pedestrian lateral access
- Multiple street crossings some signalized some un-signalized
- Narrow railroad corridor especially in Live Oak neighborhood
- Need permit from CUP for new pedestrian at-grade crossing at El Dorado Avenue near Simpkins Swim Center
- Need one (1) new trail at-grade rail track crossing at Seabright Avenue
- Existing blufftop path in eastern portion of Capitola provides some of the very best Monterey Bay views, but is truncated at Hollister Avenue by cliff erosion; down coast connection needed

SCCRTC | Monterey Bay Sanctuary Scenic Trail Master Plan

Opportunities and Constraints
Central Reach



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Existing Corridor Amenities
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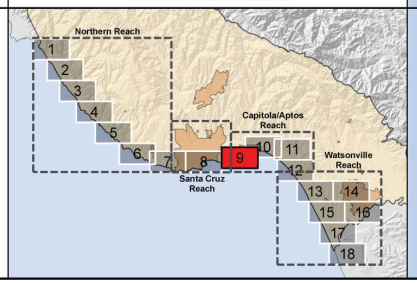

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SHEET: 9 of 18

SHEET 10

OPPORTUNITY SUMMARY

- Compound connectivity to residential, schools, employment centers, New Brighton State Beach, and existing bike and pedestrian facilities
- Segment connection creates off-street alternative bike and pedestrian access through Downtown Capitola, beaches, and existing Coastal Trail Facilities
- Adjacent and within ¼-mile walking distance to high residential population, schools, off-street multi-use access to existing coastal trail system
- Regional commuter gap closure for south side of Santa Cruz and northwest Capitola
- Off-street connection to multiple recreation areas and provides safer universal access
- Connects residential areas and schools to Simpkins Swim Center and Twin Lakes State Beach
- Connection to Capitola City Beach and Wharf
- Future connection opportunity to Cabrillo College and residential areas northeast of Highway 1 via pedestrian/bike undercrossing(s) at Highway 1
- Trail would travel through historic district
- Connection to existing trail system leading to Potbelly Beach through south unit of New Brighton State Beach
- Safer alternative to using McGregor Drive for pedestrians and bikes; MBSST Core Alignment can be realigned seaward
- Good paved blufftop path
- Existing blufftop trail can be linked for continuous California Coastal Trail (CCT) path from Seacliff State Beach main parking area to Rio Del Mar Beach

CONSTRAINT SUMMARY

- Cost of moving rail track to accommodate the trail within the rail right-of-way
- Narrow corridor
- Cost of Soquel Creek rail trestle bridge retrofit or replacement
- Trail would travel through historic district in Downtown Capitola
- Two additional rail bridge crossings in New Brighton State Beach, one over State Beach parking lot access road at Tannery Gulch and one at Borregas Creek
- Negotiate two new California Public Utilities Commsision (CPUC) rail crossings
- Long segment with many crossings and other physical constraints

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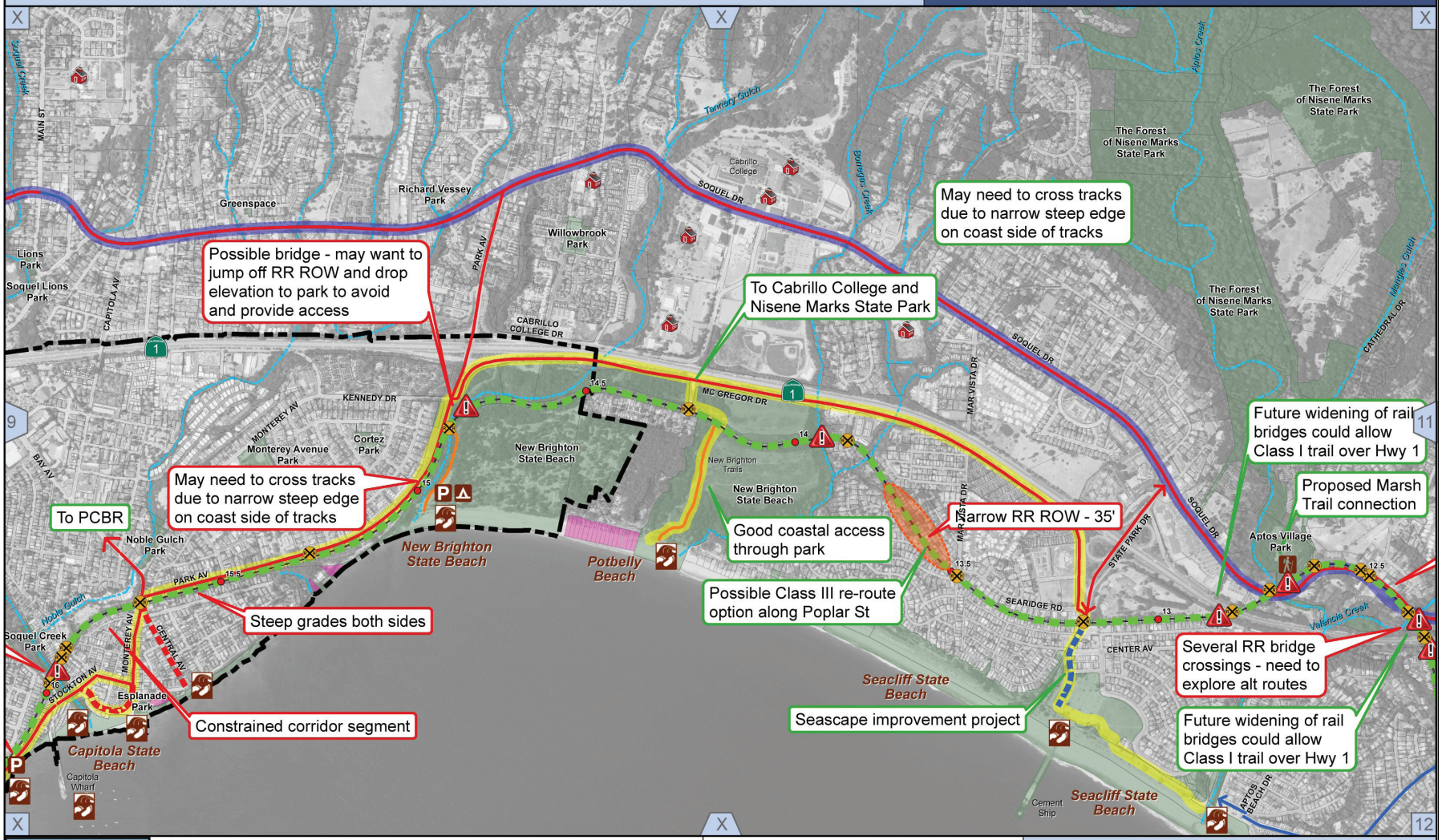
Opportunities and Constraints
Central Reach



LEGEND

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- Parcels With Recorded Access
- Streams
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- Connection to Regional Trail System
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- Opportunity

Transportation Features
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Existing Corridor Amenities
- Connection to Existing Trail
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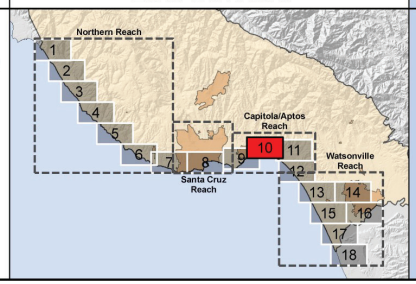
LOCATOR MAP



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SHEET 11

OPPORTUNITY SUMMARY

- Compound connectivity to residential, schools, employment centers, New Brighton State Beach, and existing bike and pedestrian facilities
- Segment connection creates off-street alternative bike and pedestrian access west across State Highway 1 from Aptos Village to beaches, and existing Coastal Trail Facilities
- Future connection opportunity to Cabrillo Collage and residential areas northeast of Highway 1
- Connection to trail system at Nisene Marks State Park and on to Bay Area Ridge Trail, potentially via Aptos Village Park
- Safer alternative to using Soquel Drive for pedestrians and bikes

CONSTRAINT SUMMARY

- Cost of 4 bridge retrofit or replacements
- Coordination with CALTRANS for right-of-way encroachment
- Riparian corridor crossings (Aptos Creek, twice)
- Trail bridge crossing needed at Rodeo Creek Gulch
- Two intersection treatments for trail crossing rail tracks, one at 17th Street and one at 47th Street
- Ramp access from Rio Del Mar Blvd to access rail below grade crossing of Rio Del Mar Blvd
- May have private property boundary conflicts along the trapezoidal segment south of Rio Del Mar Blvd bridge

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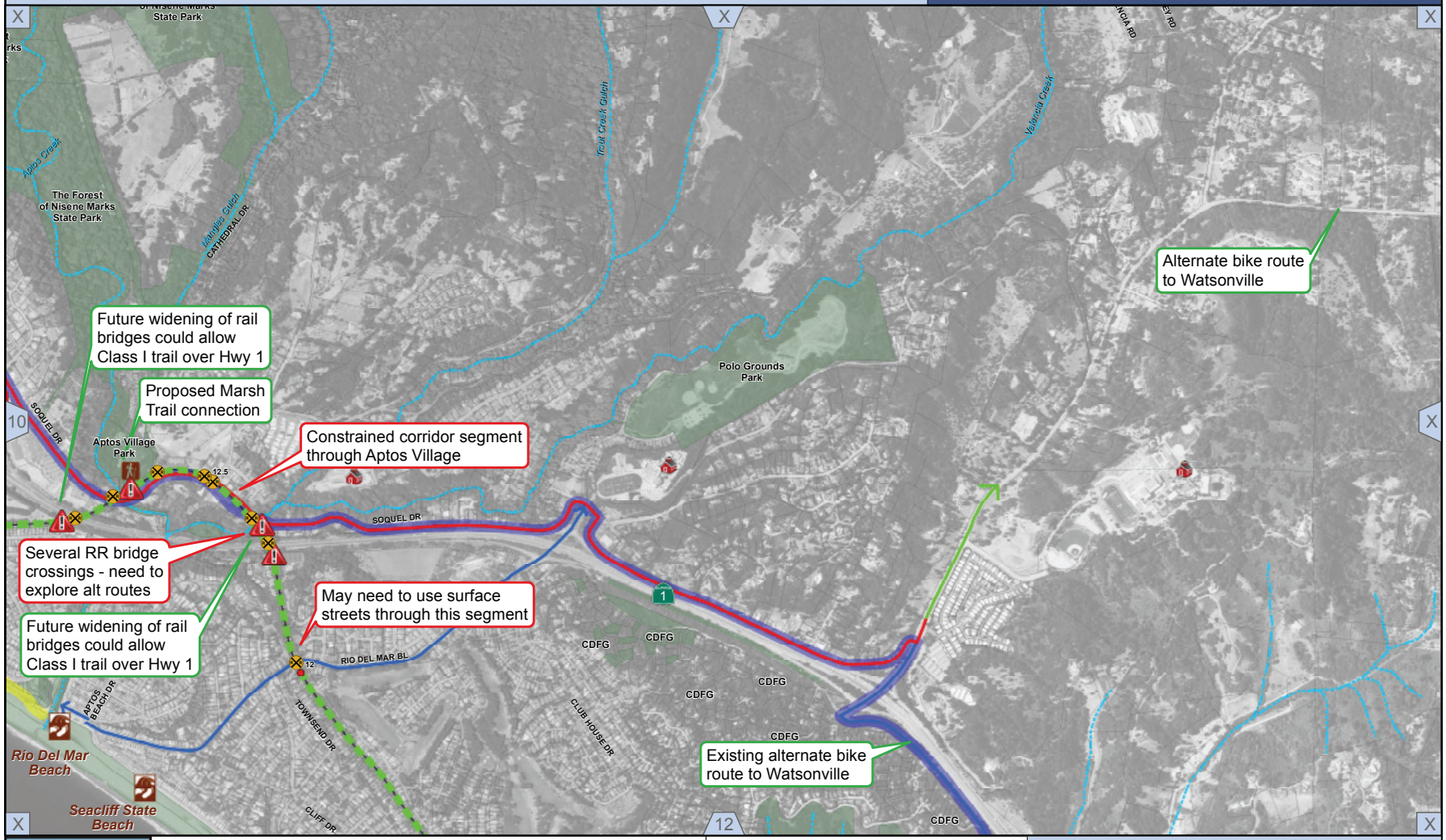
Opportunities and Constraints
Central Reach



LEGEND

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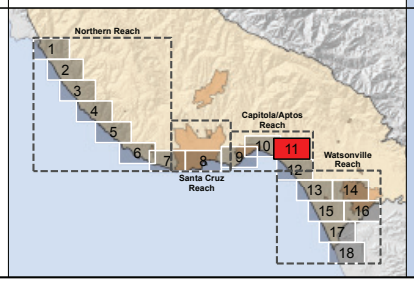
LOCATOR MAP



SOURCE AND REFERENCE DATA

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SHEET: 11 of 18

SHEET 12

OPPORTUNITY SUMMARY

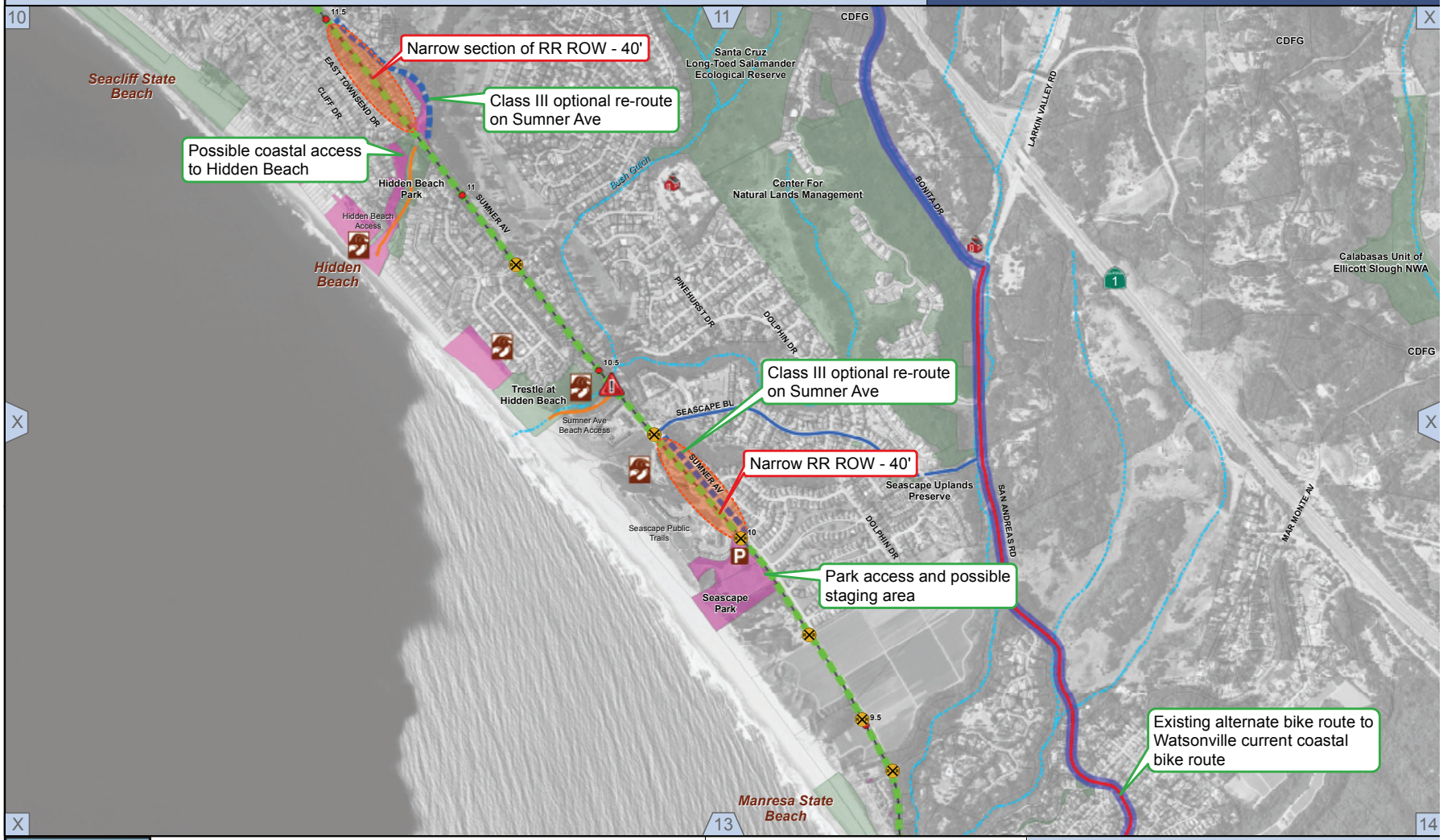
- Adjacent and within ¼-mile walking distance to high residential population, employment centers, existing local bike facilities , and local and regional bus stops
- Connection to Hidden Beach coastal trail access
- Hidden Beach parking lot could serves as trail-head to rail trail
- Adjacent and within ¼-mile walking distance to high residential population, Rio Del Mar Elementary school, employment centers, existing local bike facilities , and local and regional bus stops
- Off-street connection to multiple recreation areas and provides safer universal access
- Connection from adjacent residential areas and visitor accommodations to Hidden Beach coastal access and Seascape Park, including via access path from end of Via Palo Alto to Hidden Beach Park
- Seascape Park provides a staging area for trail users along the path and visitors arriving by bus or automobiles

CONSTRAINT SUMMARY

- Cost of rail bridge retrofit or new pedestrian bridge at Hidden Beach crossing.
- Privacy fencing and possible retaining walls
- Narrow rail right-of-way (40') at Hidden Beach bridge crossing
- Cost of possible small intermittent retailing walls along the proposed rail trail alignment
- Narrow corridor adjacent to Seascape Resort (40 feet)
- Two intersection treatments for trail at-grade street crossings , one at Clubhouse Drive and one at Seascape Blvd
- Rail and Sumner Road rights-of-way are parallel, offering flexibility to accommodate a two-way non-motorized multi-use facility

SCCRTC | Monterey Bay Sanctuary Scenic Trail Master Plan

Opportunities and Constraints
Central Reach



LEGEND

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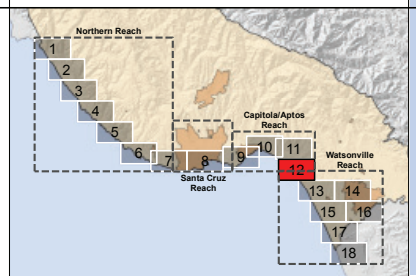
LOCATOR MAP



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SHEET 13

OPPORTUNITY SUMMARY

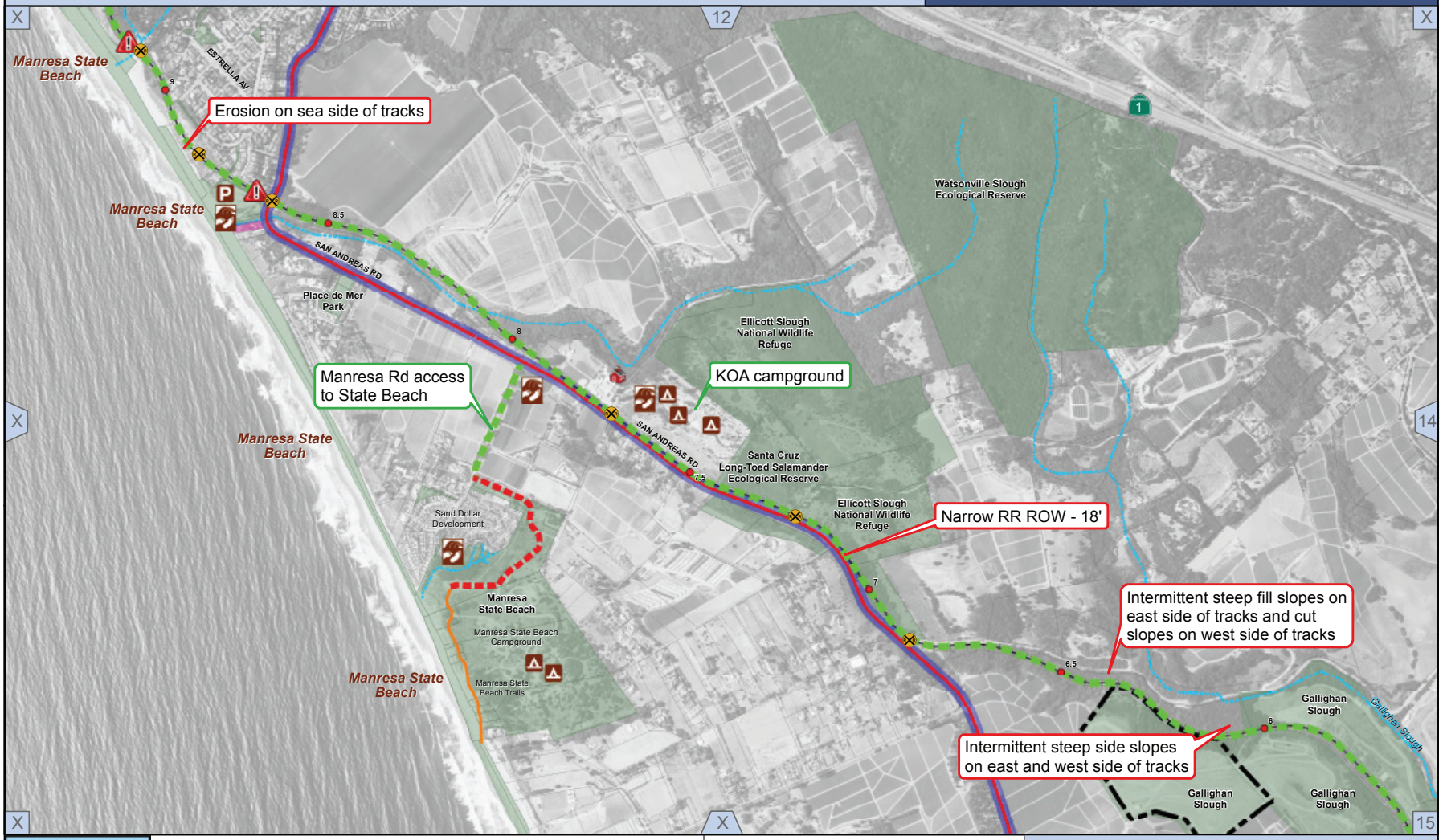
- Adjacent and within ¼-mile walking distance to residential population
- Off-street universal access gap closure to California Coastal Trail, Pacific Bike Route, and the Monterey Bay Scenic Sanctuary Trail system
- Provides off-street connectivity from Seascape Park to La Selva Beach public access area (part of Manresa State Beach)
- Trail head connections at La Selva Beach and southern Manresa State Beach parking areas with water, restrooms and beach access.
- Connection to the Pacific Bike Route
- Connects currently disjunct Manresa State Beach facilities
- Provides safer alternative bike and pedestrian access along San Andreas Road to coastal areas and recreation facilities
- Connects the KOA Campgrounds to coastal access
- Connects Watsonville area to the coast

CONSTRAINT SUMMARY

- Cost of rail bridge engineering and crossing at La Selva Beach and Manresa Beach (over San Andreas Road)
- Narrow corridor in a few places
- Private ownership adjacency
- Close proximity to private ownership near Manresa State Beach
- Multiple end-to-end prefabricated pedestrian bridge connection (1,100 feet)
- Cost of rail bridge retrofit, replacement of new pedestrian/bike bridge at San Andreas crossing
- Close proximity to residential properties

SCCRTC | Monterey Bay Sanctuary Scenic Trail Master Plan

Opportunities and Constraints
Watsonville Reach



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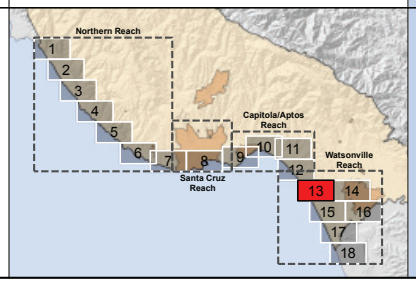

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SHEET: 13 of 18

SHEET 14

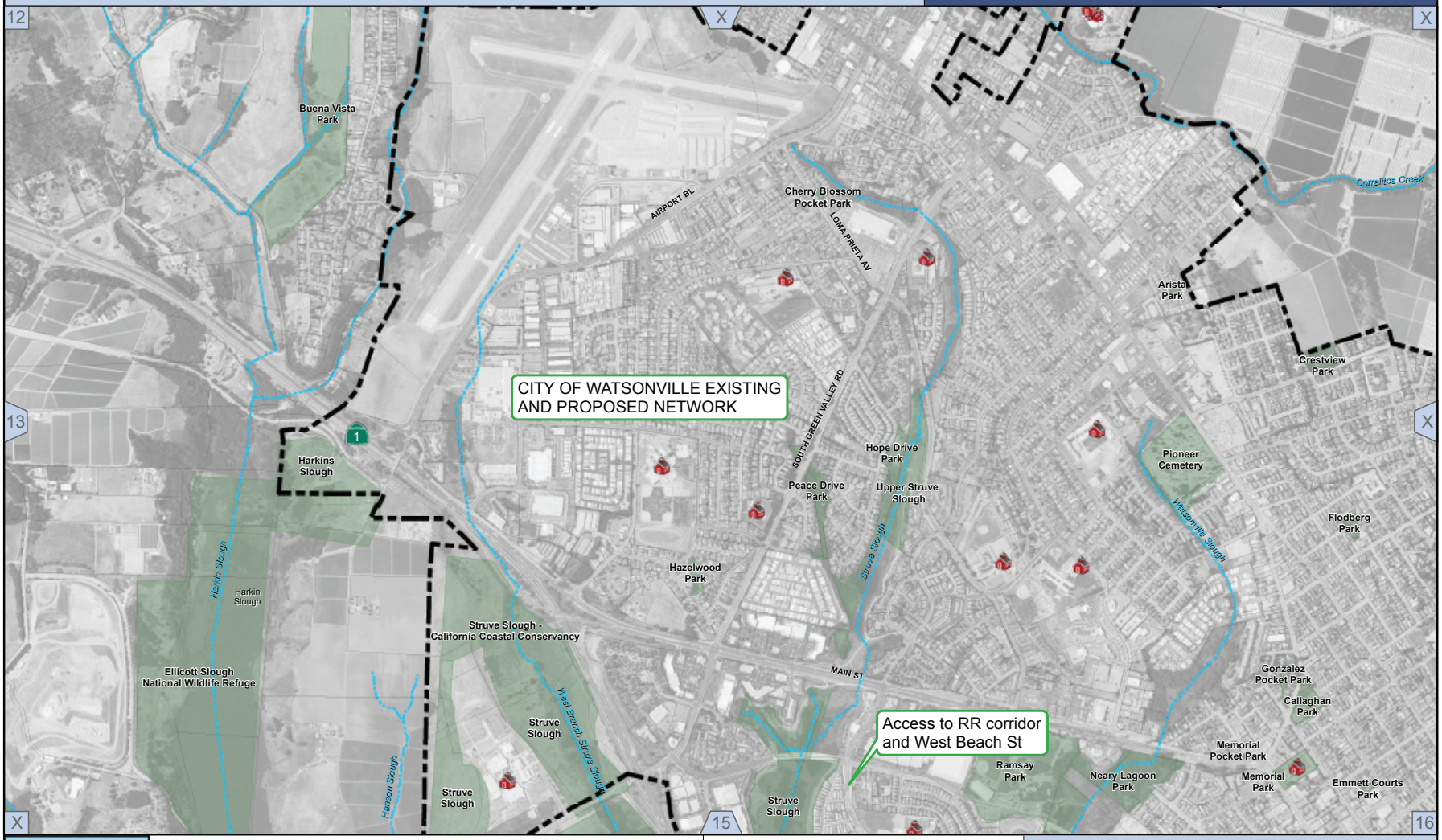
OPPORTUNITY SUMMARY

- Not a part of the study area

CONSTRAINT SUMMARY

- Not a part of the study area

Opportunities and Constraints
Watsonville Reach



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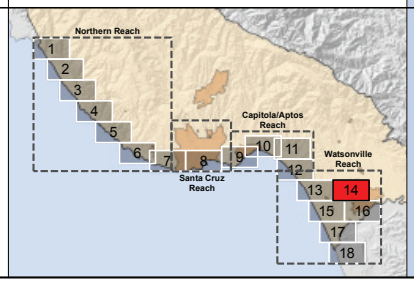

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3) Existing bike path and railroad data from the SCCRTC
4) Protected Areas data from the Bay Area Protected Areas Database (BPAD) - 2011
5) Parcels with recorded access (provided/protected public access) data from the California Coastal Commission
6) Hillshade NED data from CaSIL

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SHEET: 14 of 18

SHEET 15

OPPORTUNITY SUMMARY

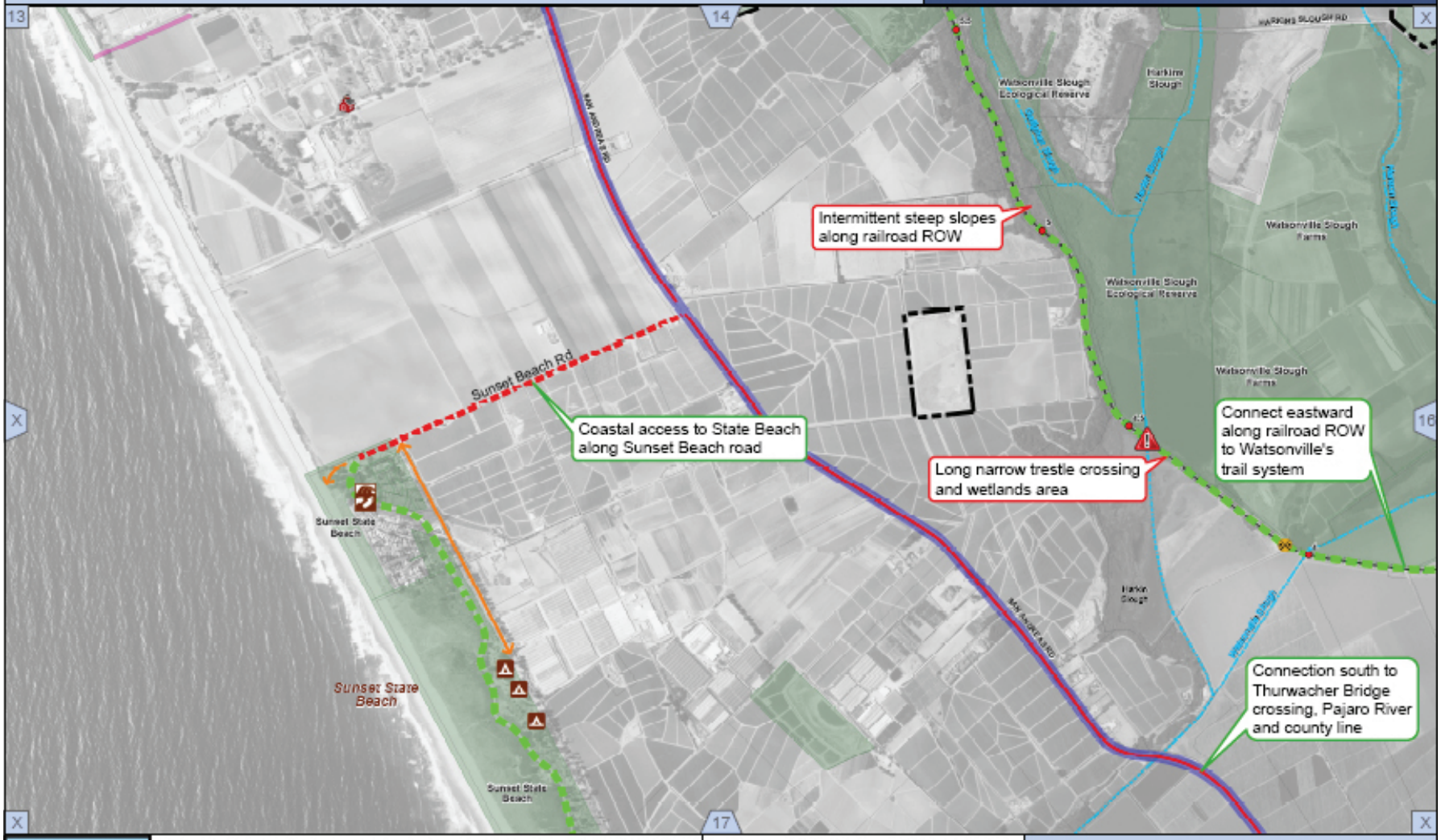
- Adjacent and within ¼-mile walking distance to high residential population, employment centers, existing local bike facilities , and local and regional bus stops
- Connects Watsonville area to the coast
- Connects the Watsonville Slough Farm trail system

CONSTRAINT SUMMARY

- Cost of retaining walls and drainage crossings
- Adjacent to agricultural land
- Remote 2.5 mile stretch with no services or connections to other street or trail facilities

SCCRTC | Monterey Bay Sanctuary Scenic Trail Master Plan

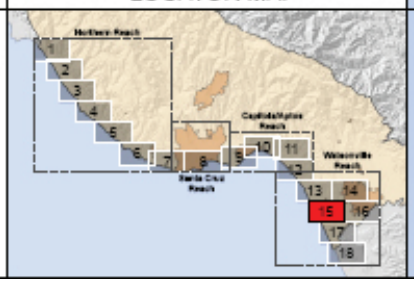
Opportunities and Constraints
Watsonville Reach



LEGEND

Route Designations
Trail Alignments
Geographic Elements
Transportation Features
Existing Corridor Amenities
Constraint
Opportunity

LOCATOR MAP



SOURCE AND REFERENCE DATA

Date: 1/17/2012

0 0.125 0.25 0.5 Miles

0 500 1,000 2,000 3,000 4,000 Feet

1 In = 500 ft

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SHEET: 15 of 18

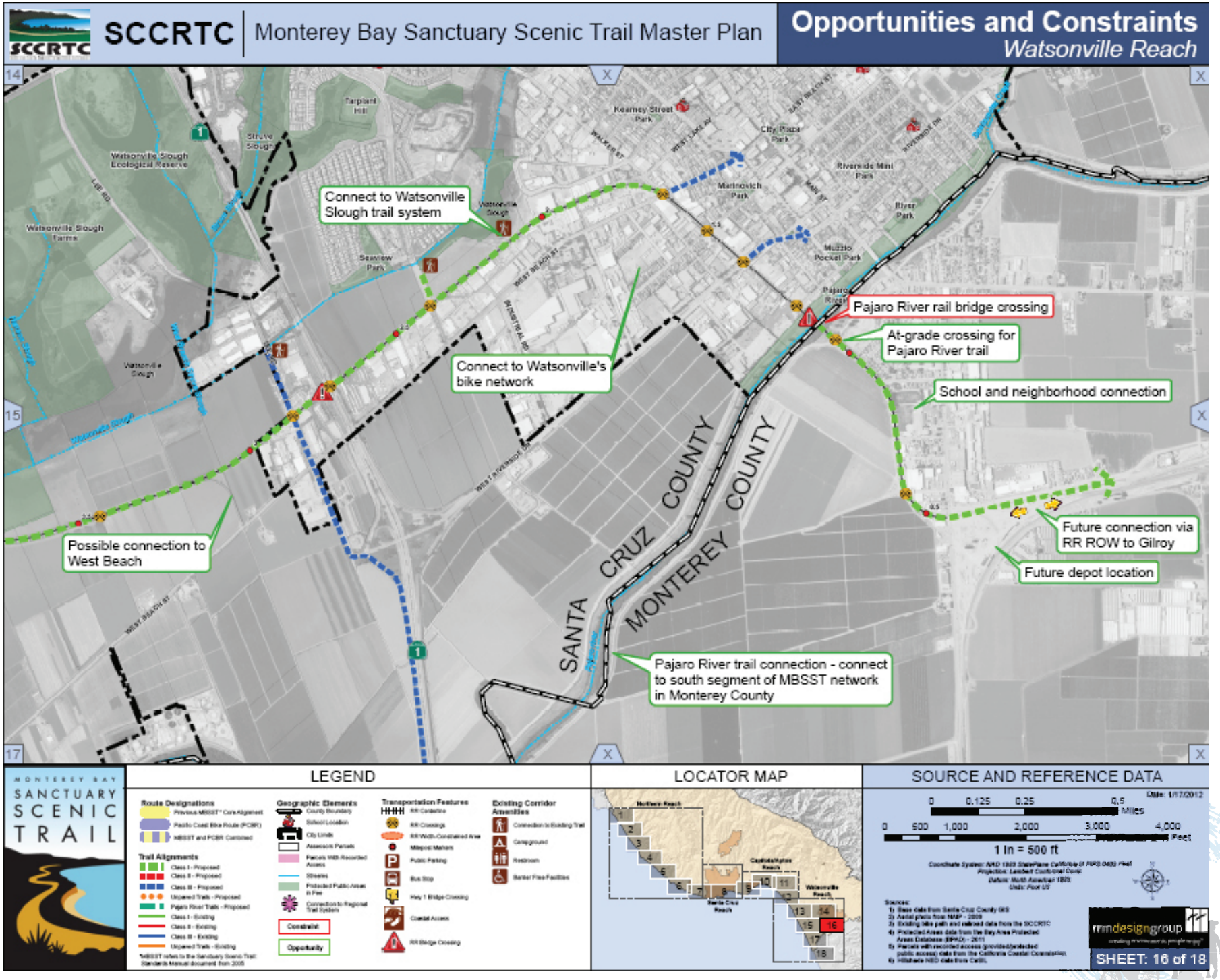
SHEET 16

OPPORTUNITY SUMMARY

- Adjacent and within ¼-mile walking distance to high residential population, employment centers, existing local bike facilities , and local and regional bus stops
- Connections to Watsonville Wetlands trail network
- Connection to City of Watsonville local area planned trail network
- Connection to planned West Beach Street on-street bike facilities
- Primary connector trail link to connect the City of Watsonville to the north coast of Santa Cruz and the Monterey Bay Sanctuary Scenic Trail system
- Connection to planned Caltrain extension, at future Pajaro Junction depot

CONSTRAINT SUMMARY

- Cost of rail bridge retrofit or new pedestrian bridge at Pajaro River crossing
- Coordination with adjacent farmland owners and operators
- Wetland impacts (connector trails only)


SCCRTC
Monterey Bay Sanctuary Scenic Trail Master Plan
Opportunities and Constraints
Watsonville Reach
Connect to Watsonville Slough trail system
Connect to Watsonville's bike network
Pajaro River rail bridge crossing
At-grade crossing for Pajaro River trail
School and neighborhood connection
Future connection via RR ROW to Gilroy
Future depot location
Possible connection to West Beach
Pajaro River trail connection - connect to south segment of MBSST network in Monterey County
SANTA CRUZ COUNTY
MONTEREY COUNTY
LEGEND
LOCATOR MAP
SOURCE AND REFERENCE DATA
1 In = 500 ft
SHEET: 16 of 18

SHEET 17

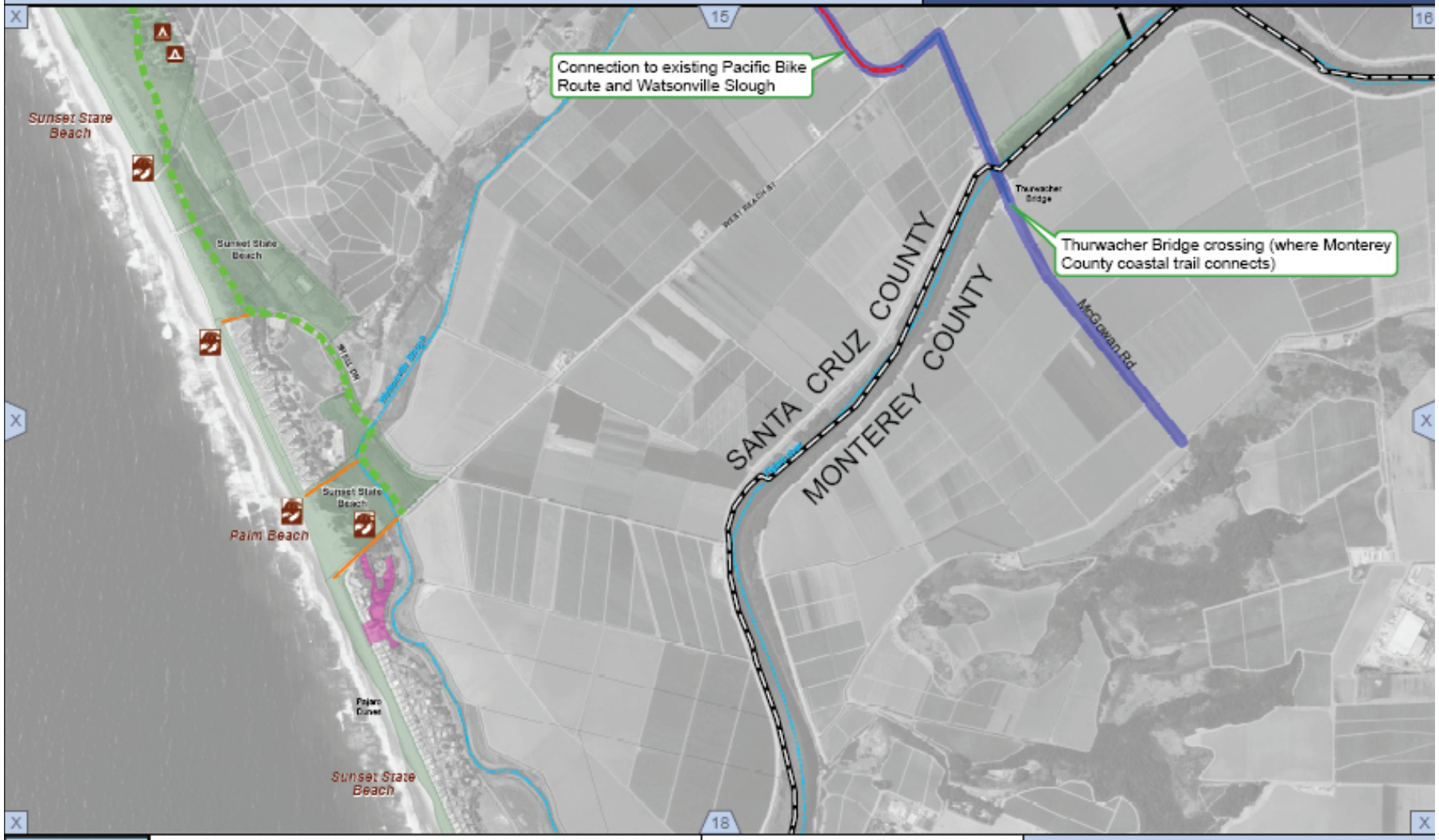
OPPORTUNITY SUMMARY

- Connection to the Pajaro River and to levee-top trail system
- Connection of currently disjunct portions of Sunset State Beach

CONSTRAINT SUMMARY

- Pajaro River bridge crossing coordination and permits with Flood Control District
- Environmental Impact considerations, especially with respect to adjacent agricultural lands, riparian corridor, wetlands and dune habitats
- Beach narrows in winter season

Opportunities and Constraints
Watsonville Reach



MONTEREY BAY SANCTUARY SCENIC TRAIL

LEGEND

Route Designations
- Previous MBSST* Core Alignment
- Pacific Coast Bike Route (PCBR)
- MBSST and PCBR Combined

Trail Alignments
- Class I - Proposed
- Class II - Proposed
- Class III - Proposed
- Unpaved Trails - Proposed
- Pajaro River Trails - Proposed
- Class I - Existing
- Class II - Existing
- Class III - Existing
- Unpaved Trails - Existing

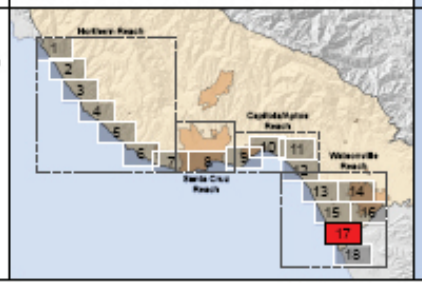
*MBSST refers to the Sanctuary Scenic Trail Standards Manual document from 2005

Geographic Elements
- County Boundary
- Select Location
- City Limits
- Assessors Parcels
- Parcels With Recorded Access
- Streets
- Protected Public Areas in Feet
- Connection to Regional Trail System
- Constraint
- Opportunity

Transportation Features
- RR Centerline
- RR Crossing
- RR Width-Constrained Area
- Milepost Markers
- Public Parking
- Bus Stop
- Hwy 1 Bridge Crossing
- Coastal Access
- RR Bridge Crossing

Existing Corridor Amenities
- Connection to Existing Trail
- Campground
- Restroom
- Barrier Free Facilities

LOCATOR MAP



SOURCE AND REFERENCE DATA

Date: 1/17/2012

0 0.125 0.25 0.5 Miles

0 500 1,000 2,000 3,000 4,000 Feet

1 In = 500 ft

Coordinate System: NAD 1983 StatePlane California III FIPS 0403 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
Units: Foot US

Sources:
1) Base data from Santa Cruz County GIS
2) Aerial photo from NAIP - 2009
3) Existing bike path and railroad data from the SCCRTC
4) Protected Areas data from the Bay Area Protected Areas Database (BPAD) - 2011
5) Parcels with recorded access (provided/protected public access) data from the California Coastal Commission
6) Hillshade NED data from Calfit.

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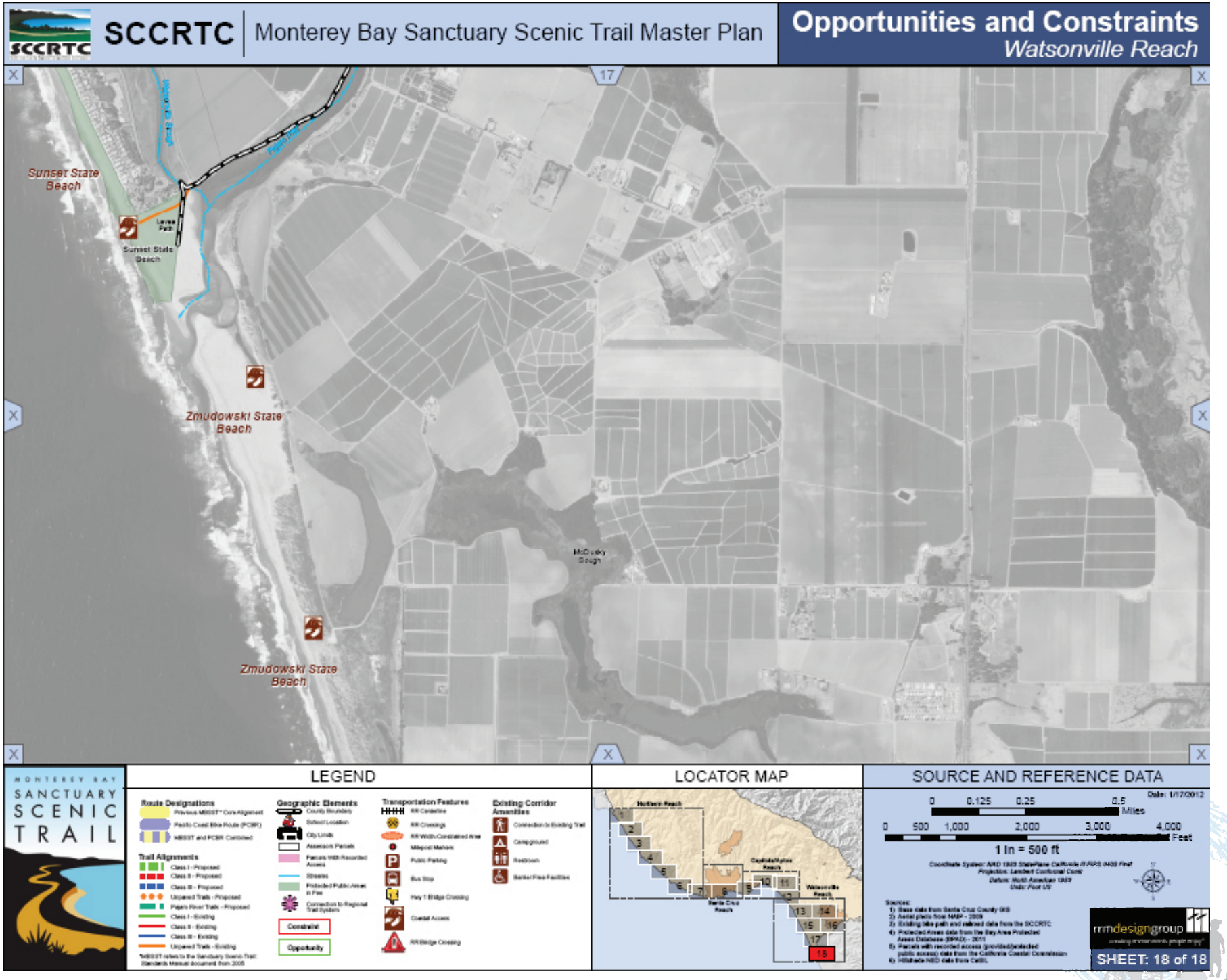
SHEET 18

OPPORTUNITY SUMMARY

- Pajaro River top levee-top trail provides excellent off-highway access route from Watsonville to the coast
- Connection across the Pajaro River, via levee-top trail system
- Potential for non-bridge water crossing of Pajaro River estuary; avoids long detour via Thurwachter Bridge and provides excellent interpretive opportunity regarding estuarine, riparian and (seasonal) snowy plover habitats

CONSTRAINT SUMMARY

- Beach narrows in winter season
- Slough-side levee not public (Watsonville Slough levee)
- No bridge - deep channel at Watsonvill Slough, 30-ft wide
- Wide estuary, seasonal high water at Pajaro River mouth
- Snowy plover nesting at Pelican Point


SCCRTC
Monterey Bay Sanctuary Scenic Trail Master Plan
Opportunities and Constraints
Watsonville Reach
Sunset State Beach
Zmudowski State Beach
Zmudowski State Beach
LEGEND
LOCATOR MAP
SOURCE AND REFERENCE DATA
1 In = 500 ft
SHEET: 18 of 18

APPENDIX B

Existing Jurisdictional Goals

Report Name	Date	Goals
Arana Gulch Draft Master Plan	6/2010	• Public Use • Provide a trail system that allows public access within habitat areas in a manner that does not result in significant degradation of habitat values. • Provide trail connections through Arana Gulch that provide access from adjacent communities to the coastline and the Monterey Bay National Marine Sanctuary Trail. Provide multi-use trail connections that would comply with the American with Disabilities Act (ADA) requirements, and provide pedestrian, wheelchair and bicycle access. • Provide areas for nature viewing and interpretive displays to complement and blend with the natural environment. • To protect sensitive habitat areas, restrict dogs to on-leash use at all times on designated trails. • Close unauthorized, non-designated pathways. • No new vehicle parking with the Arana Gulch boundaries will be provided, as there is adequate existing parking near the entrances.
City of Capitola Bicycle Transportation Plan	2/10/2011	• Improve bicycle circulation, connectivity and access • Increase bicycle ridership and replace motor vehicle trips with bicycle trips. Achieve a city-wide goal of 5% of all trips and 20% of work trips made by bicycle by 2020. • Improve bicycle safety • Design a city-wide multi-modal transportation system that accommodates bicycles • Maintain new and existing bicycle infrastructure Goal 1: Improve bicycle circulation, connectivity and access Objective 1.1: Construct and mark bicycle routes in conformance with the County-wide Bicycle Route Signage Program and state standards, as outlined in the Manual of Uniform Traffic Control Devices (MUTCD) and the California Supplement. Objective 1.2: Locate bikeways as bicycle lanes adjacent to the main traveled way unless a more direct and useful separated bicycle path can be provided. Where bicycle lanes are not possible due to right-of-way restrictions, etc., include a wide curb lane, or shared lane pavement marking Objective 1.3: Coordinate with other jurisdictions to adopt a system of bikeways that complements the County system. Objective 1.4: Coordinate the planning, design and construction of bikeway facilities with all implementing agencies. Objective 1.5: Install in all existing and proposed signalized intersections inductive loop sensors or video sensors (devices to trigger traffic signal phasing) that are positioned to detect bicycles, and are appropriately stenciled. Objective 1.6: Design regional bicycle routes to connect residential areas with major activity centers (employment, educational, civic, etc.) by including bikeway network development as part of the Capital Improvements Program to prioritize construction or retrofits for completion of specific routes. Objective 1.7: Build all bridges with enough width to safely accommodate bicycle travel. Comply with or exceed the Caltrans standard requirement of a 4-foot (1.2m) minimum bicycle lane, or a 5-foot lane if a gutter is present. Objective 1.8: Where possible exceed the minimum lane width for Class II bicycle lanes to allow more bicycle traffic and separation from parked cars and automobile traffic.

Report Name	Date	Goals	
		Objective 1.9:	Improve the flow of bicycle traffic through the Capitola Village.
		Goal 2:	Increase bicycle ridership and replace motor vehicle trips with bicycle trips. Achieve a city-wide goal of 5% of all trips and 20% of work trips made by bicycle by 2020.
		Objective 2.1:	Require that event sponsors provide safe bicycle access and secure bicycle parking at special events
		Objective 2.2:	Encourage employers to offer incentives to employees who ride a bicycle instead of driving a car to work.
		Objective 2.3:	Encourage the provision of bicycle racks, showers, lockers, and other storage facilities at destinations, where practical and economically feasible, when reviewing discretionary permits for major activity centers and new developments.
		Objective 2.4:	Plan a bikeway network to integrate with other modes of transportation (train or transit stations and Park and Ride lots, etc.) in order to encourage and support the use of bicycling and reduce the use of motor vehicles.
		Objective 2.5:	Provide convenient, secure bicycle parking at private and public facilities and commercial districts through parking ordinance requirements.
		Objective 2.6:	Provide bicycle parking stands (facilities) at all primary public access points and at appropriate neighborhood access points.
		Objective 2.7:	Identify several street parking spaces located in front of commercial and retail stores to be converted into bicycle parking.
		Objective 2.8:	Increase modal split of Capitola employee commuter trips to 25% of all trips made by bicycle, transit, walking or carpool by 2020.
		Objective 2.9:	Replace Capitola vehicle fleet trips with bicycle trips when feasible.
		Objective 2.10:	Work with New Brighton Middle School and local Bicycle advocacy groups to establish a year-round incentive and tracking program for students to encourage active transportation.
		Goal 3:	Improve bicycle safety
		Objective 3.1:	Support bicycle rider safety training programs for elementary and middle school students.
		Objective 3.2:	Encourage establishments that teach driver education to include lessons on sharing the road and the rights and responsibilities of bicyclists according to the California Vehicle Code.
		Objective 3.3:	Continue to support stable funding for local bicycle safety and education programs.
		Objective 3.4:	Require that contractors and utility companies doing roadside work maintain the road edge in the best possible condition during construction and adhere to the "Guidelines to Protect the Safety of Bicyclists, Pedestrians, and Disabled Travelers during Road Construction" in Appendix F.
		Objective 3.5:	When feasible, avoid lengthwise concrete seams in bicycle lanes and require prompt repair (including pavement) and restriping of bicycle lanes before the project is considered complete.
		Objective 3.6:	Limit on-street parking on arterial and collector streets, encourage parking alternatives, pursue off-street parking development as methods to provide Class II bicycle lanes and do not eliminate joint bicycle lanes/parallel shoulder parking unless the new bicycle lanes are effectively as wide or wider.
		Objective 3.7:	Limit the number of driveways when planning new commercial and multiple-family residential developments in order to reduce automobile-bicycle conflicts.

Report Name	Date	Goals
		Objective 3.8: Maintain adequate outside travel lane width (14 feet) when no bicycle lane can be accommodated. Objective 3.9: Encourage bicyclists to take the lane on Class III bikeways by exceeding the minimum standard distance sharrows shall be placed from the curb as defined in the Manual of Uniform Traffic Control Devices (MUTCD) Section 9C.07. Objective 3.10: Encourage car parking arrangements which increase the visibility of pedestrians and bicyclists. Consider reverse angled parking. Objective 3.11: Remove botts dots from streets during scheduled road maintenance. Goal 4: Design a city-wide multi-modal transportation system that accommodates bicycles Objective 4.1: Encourage other modes of transportation (buses, trains, etc.) to plan for, and provide space for carrying recreational and commuting bicyclists on public transportation systems. Include secure bicycle parking facilities with development of transit shelters incorporating Santa Cruz County Transit District design approval. Objective 4.2: Include bicycle access in all fixed guideway planning and design. Objective 4.3: Make provisions for bicycle commuter facilities in any and all future planning documents regarding the Capitola Mall and Transit Station. Objective 4.5: Require new recreation and visitor-serving developments in the Coastal Zone to support alternative transportation to the beaches and other tourist destinations. Objective 4.6: Ensure that all major corridors provide a choice of transportation modes and are designed with multi-model amenities such as bus stops, turnouts and shelters, and bicycle lanes and sidewalks. Goal 5: Maintain new and existing bicycle infrastructure Objective 5.1: Ensure that bicycle facilities remain in a usable condition through regular maintenance and sweeping. Objective 5.2: Retain all existing bikeways along with roadway improvement projects. Objective 5.3: Secure a portion of local and State funding for bikeway maintenance. Objective 5.4: Maintain bicycle parking facilities.
City of Capitola General Plan	9/28/1989	**Bicycles** Objective: To promote a safe, efficient bicycle system as a viable mode of transportation within the City of Capitola. To the extent possible provision for bicycles will be made on all major roads in the City. The Bikeway Plan recommended is intended to connect to the County bikeway system and to provide a system through the City and to its major attraction points. • Policy 30-Support the development of the bikeway system as planned. • Policy 31-Every effort shall be made to provide for bicycles along all arterial and minor arterials. The desired objective is a Class II bikeway as depicted on page 69. **Implementation** 1 Develop a system of bikeways including bike lanes and bike routes along designed corridors as shown in the Capitola General Plan Bikeway Plan Map. Responsibility: Public Works 2 Bicycle safety efforts will be continued through the City Police Department and supported at the County level. 3 Bicycle facilities will be maintained by the Public Works Department.

Report Name	Date	Goals	
		4	Bicycle facility development will be included in the Capital Improvement Program by the Public Works Department.
		5	Signalized intersections along designated bikeways shall be designed to be sensitive to bicyclists, where necessary. Responsibility: Public Works Department. • Policy 32-Require bicycle parking or storage facilities at new private and public developments where appropriate. • Policy 33-Give equal consideration to bicycles moving through the village areas, as is given automobiles. • Policy 34-Bicycle facilities are not recommended on collector streets unless traffic volumes are close to the limits of collector street standards and/or bicycle traffic is estimated will be high or related to school or park access.
City of Santa Cruz General Plan 2030 Administrative Draft	2/27/2009	Goal M1:	Land use patterns, street design, parking, and access solutions that facilitate multiple transportation alternatives
		M1.1.2:	Connect activity centers with pedestrian and bicycle paths. Cf. M4.3.
		M1.1.3:	Implement pedestrian and bicycle improvements that support transit ridership.
		M1.2:	Create livable streets. "Livable street" support the intent of Section 65302(b) of the California Government Code to create "complete streets" planned, designed, operated, and maintained to provide safe mobility for all users, including "bicyclists, children, persons with disabilities, motorists, movers of commercial goods, pedestrians, users of public transportation, and seniors."
		Goal M2:	A safe, sustainable, efficient, adaptive, and accessible transportation system
		M2.1.2:	Encourage use of alternative modes of transportation.
		M2.1.3:	Implement pedestrian, bike, mass transit, and road system improvements through the Capital Improvement Program.
		M2.1.4:	Support regional funding and implementation of key regional projects that can significantly benefit Santa Cruz and further the City's mobility policies.
		M2.1.5:	Do not adopt, approve, or construct an Eastern Access to the university without a vote of the people in a citywide general election.
		M2.3:	Increase the efficiency of the multi-modal transportation system.
		M2.3.1:	Design for and accommodate multiple transportation modes.
		M2.3.3:	Incorporate pedestrian, bicycle, and mass transit facilities in the design of bridges and road projects.
		M2.3.4:	Encourage visitor-serving developments, such as hotels, to make bicycles and shuttle programs available to patrons.
		M3.1.9:	Consider reducing parking requirements for employers, developments, businesses, and major destination centers that implement effective alternative transportation programs. Cf. LU4, ED1.9.2, and M2.3.2, and 3.1.9.
		Goal M4:	A citywide interconnected system of safe, inviting, and accessible pedestrian ways and bikeways.
		M4.1.1:	Update and implement the Pedestrian Master Plan for development of a complete, continuous, and structurally adequate system of pedestrian paths and walkways.

Report Name	Date	Goals	
		M4.1.4:	Encourage walking in Santa Cruz through educational outreach and promotional programs.
		M4.2:	Provide and maintain a complete, interconnected, safe, inviting, and efficient citywide bicycle network. Cf. CD5.1, CC8.4, PR4.1.2.
		M4.2.1:	Maintain and update as necessary the City's Bicycle Transportation Plan.
		M4.2.2:	Work with appropriate agencies to seek funding for pedestrian and bicycle projects.
		M4.2.3:	Facilitate bicycling connections to all travel modes.
		M4.2.4:	Implement bicycle safety programs and cooperate with other agencies in the enforcement of bicycle safety.
		M4.2.5:	Study the development of parking alternatives (such as removal of parking from one side of the street) and off-street parking facilities prior to the removal of any on-street spaces.
		M4.2.6:	Provide regular sweeping, pavement repairs, striping, and signs along bike routes.
		M4.3:	Require pedestrian and bicycle improvements in major activity centers and activity areas. Cf. ED5.1, and M1.1, 1.1.2, 1.5.1, and 2.4.2.
		M4.3.1:	Promote the development of bike lanes on arterial and collector streets and in proposed and already-adopted City plans.
		M4.3.2:	Develop bike commute routes along railroad rights-of-way (while ensuring the ability to develop rail transit) and along West Cliff Drive, Broadway, King, and other streets.
		M4.4:	Assure a high level of bicycle user amenities. Cf. PR1.6.4.
		M4.4.1:	Maintain Zoning Ordinance and parking district requirements that require secure, covered bicycle parking and/or storage lockers at private and public facilities.
		M4.4.2:	Provide design guidelines for safe and secure bicycle parking, and promote bicycle access for special events.
		M4.4.3:	Increase the supply of bicycle parking throughout the city.
		M4.4.4:	Consider ways to require existing development to upgrade and/or retrofit on-site bicycle user amenities.
		M4.5:	Support pedestrian and bicycle safety improvements.
		M4.5.3:	Develop a schedule and comprehensive funding program for proposed bike system improvements within the Capital Improvements Program.
		M4.5.4:	Consider counter-flow bike lanes on one-way streets where significant bicycle traffic is expected and where safety measures are in place.
City of Watsonville, Watsonville VISTA 2030 General Plan	Oct 23 2012	Goal 6.3:	Transit Facilities and Service. Promote the use of transit as an alternative to the automobile for all types of travel.
		Policy 6.3.1:	Public Transit Facilities and Services. The City shall take an active role in transit planning by the Santa Cruz Metropolitan Transit District (SCMTD) for the Watsonville Planning Area.
		Implementation	
		6.3.13:	Transit Stop Locations. The City shall cooperate with the Santa Cruz Metropolitan Transit District and Monterey Salinas Transit in the evaluation of, and recommendation for, location of transit stops and shelters. Transit stops and shelters should be designed to be compatible with through traffic, bicycle, and pedestrian movements.

Report Name	Date	Goals
		Goal 6.5: Bicycle Circulation. Plan for and provide a safe, convenient network of bicycle facilities that serves both local and regional travel. Policy 6.5.1: Bicycle Facilities Development. The City shall plan for, and implement a comprehensive network of bicycle facilities in order to promote the bicycle as an alternative to the private automobile. **Implementation** 6.5.11: New Construction and Improvements. New construction and improvements to streets designated as bike routes shall include facilities for safe bicycle travel consistent with the City's Bicycle Plan. 6.5.12: Designation of Bicycle Lanes. The City shall designate specified arterials for the development of bicycle lanes, consistent with the Bicycle Plan. 6.5.13: Design for Bicycle Lanes. The City shall require new development projects to include bicycle lanes as part of the project proposal, consistent with the Bicycle Plan. 6.5.14: Coordination of Planning. The City shall coordinate local and Santa Cruz County plans for bicycle lanes and walkways. 6.5.15: Integration with Open Space. The City shall ensure that Bicycles facilities are integrated into the City's open spaces, greenways and parks to provide a system of off-street facilities for recreational and commute bicyclists. Policy 6.5.2: Bicycle Facilities Maintenance. Bicycle facilities shall be kept clean and clear of obstructions. **Implementation** 6.5.21: Bike Lane Sweeping. The City shall continue a regular bicycle lane sweeping program. 6.5.22: Parking Enforcement. The City may institute parking restrictions along major designated arterials that are designated bike routes. 6.5.23: Conflict Elimination. The City shall work with the Santa Cruz County Transportation Commission Bicycle Committee and Watsonville Police Department to identify potential areas of conflict between bicycle facilities and vehicles and eliminate the occurrence of conflicts, particularly at intersections. Policy 6.5.3: Bicycle Support Facilities. The City shall encourage bicycle facilities in new developments, as an incentive for bicycling as a commute alternative. Implementation 6.5.31: Bicycle Storage. The city shall use the development review process to ensure that new commercial, industrial, and public projects provide secure bicycle storage for their employees, customers, clients, and attendees. 6.5.32: State Design Standards. Where possible, bikeways shall be constructed and marked in conformance with Caltrans Planning and Design Criteria, and be consistent with the Bicycle Plan. 6.5.33: Bicycles on Bridges. The City shall require that all bridges be constructed with sufficient width (four feet minimum on each side) to safely accommodate bicycle travel. 6.5.34: Sensing Devices for Signalized Intersections. Vehicle sensing devices at all signalized intersections shall be sensitive enough for bicyclists to activate the signal in the absence of a car. The City will consider installing bicycle loop detectors at signalized intersections on designated bike routes, or install push buttons accessible to bicyclists waits at the curb.

Report Name	Date	Goals
		Goal 6.6: Pedestrian Circulation. Recognize the importance of pedestrian travel, alone or in combination with other travel modes, and to encourage walking. Policy 6.6.1: Pedestrian Travel. The City shall plan for, and implement a comprehensive network of safe pedestrian facilities in order to promote pedestrian travel.
City of Watsonville Wetlands Trails Master Plan - Final	5/19/2003	• Provide a safe and scenic network of trails for recreational use and as an alternate means of transportation. • Encourage trail use for pedestrians, bicyclists, and personas with disabilities. Trails that meet ADA requirements are referred to as 'all-access' trails. • Provide various point accesses to link commercial and residential areas. • Promote the importance of natural settings with wildlife viewing lookouts and interpretive displays. • Incorporate and utilize existing infrastructure into the proposed trails. • Offer alternative routes for specific areas.
City of Watsonville Trails & Bicycle Master Plan	Draft – June 2012	**Master Plan Visions and Goals** Provide /elop a safe and interconnected city-wide network of trail and bicycle facilities that link together destinations and people, both locally and regionally; • Develop a trail network that provides facilities and programs designed to expand and encourage active recreation, community strength, and alternative transportation; • Enhance, protect, and preserve the environmental quality of open space, waterways and wildlife habitats; • Stimulate economic growth through increased tourism and real property value, by developing a city-wide trail network; and • Conserve and tell the story of local culture, history, and heritage through interpretive signage.
Coastal Conservancy Completing the California Coastal Trail	1/1/2003	**Objectives in Completing the California Coastal Trail** 1 Proved a continuous trail as close to the ocean as possible, with connections to the shoreline ("vertical access") at appropriate intervals and sufficient transportation access to encourage public use. 2 Foster cooperation between State, local, and federal public agencies in the planning, design, signing, and implementation of the Coastal Trail. 3 Increase public awareness of the costs and benefits associated with completion of the Coastal Trail. 4 Assure that the location and design of the Coastal Trail is consistent with the policies of the California Coastal Act and local coastal programs, and is respectful of the rights of private landowners. 5 Design the California Coastal Trail to provide a valuable experience for the user by protecting the natural environment and cultural resources while providing public access to beaches, scenic vistas, wildlife viewing areas, recreational or interpretive facilities, and other points of interest. 6 Create linkages to other trail systems and to units of the S[illegible]stems, and use the Coastal Trail system to through Live increase accessibility to coastal resources from urban population centers.

Report Name	Date	Goals
		Recommendations for Action: Projects to Implement to Coastal Trail **Santa Cruz County** 1 Work with the Santa Cruz County Regional Transportation Commission to acquire the former railroad right-of-way and develop the multi-use trail from Davenport to Watsonville. 2 Complete the environmental analysis and design of a principal trail alignment through the former Coast Dairies property in cooperation with the Trust for Public Land and others, and construct the trail. 3 Work with State Parks to complete the coastal trail segment across the Gray Whale Ranch property to the public. 4 Work with Santa Cruz County to identify a trail alignment trough Love Oak and work with the County State Parks, and private landowners to identify a trail alignment from Capitola to the County line. 5 Encourage and assist in the completion of the Monterey Bay Sanctuary Scenic Trail. 6 Work with the U.S. Army Corps of Engineers and Santa Cruz and Monterey Counties to complete the trail systems along both sides of the Pajaro River and connect them to the Coastal Trail.
Monterey Bay Area Mobility 2035	6/1/2010	• Regional Goals • Increase the Accessibility and Mobility of People and Goods • Protect the Environment, Promote Energy Conservation, Improve the Quality of Life, and Promote Consistency between Transportation Improvements and State and Local Planned Growth and Economic Development Patterns • Enhance the Modal Integration and Connectivity of the Transportation System for People and Goods. • Increase the Safety of the Transportation System for Motorized and Non-motorized Users • Increase the Security of the Transportation System for Motorized and Non-motorized Users Goal: Promote transit, vanpooling, ridesharing, bicycling, pedestrian and other alternative transportation modes to reduce single-occupant vehicle travel. Strategies: In the construction of new facilities and reconstruction of old, integrate methods to enhance multi-modal travel, such as the incorporation of transit stops and shelters, park and ride lots, high-occupancy vehicle lanes, bicycle lanes and storage, shower facilities, sidewalks, curb cuts, and adequate lighting. • Work with other agencies to increase the potential of combining bicycle travel with other modes of transportation, including the provision of bicycle lanes, storage facilities at transit stops and employment centers and ridesharing staging areas. • Facilitate the retention, expansion and improvement of transit and non-motorized mode travel to and within activity centers, along travel corridors, in scenic areas, and for special events. • Promote convenient and efficient transit services for commuting to and from existing and planned work, school, shopping, recreational and other activity centers.

Report Name	Date	Goals
		Goal: Avoid, minimize or mitigate the environmental impacts caused by operation or improvement of the transportation system.Strategies: Strive to limit plans and programs to those transportation facilities and services which avoid, minimize or mitigate impacts to prime agricultural land, natural wetlands and riparian corridors, coastal dunes, significant scenic corridors, significant natural habitat areas, and/or cultural and historical sites. **Santa Cruz County (SCCRTC):** • Increase the security of the transportation system for motorized and non motorized users. • Ensure that all major corridors provide a choice of transportation modes and are designed with multi-modal amenities such as bus stops, turnouts and shelters, bike lanes and sidewalks. **Long-Range Strategies:** **Implement the 1999 Watsonville-Santa Cruz-UCSC Corridor Major Transportation Investment Study program of projects:** ○ *Santa Cruz Branch Rail right-of-way acquisition* ○ *Bicycle/pedestrian path on rail right-of-way* ○ *Local road improvements* ○ *Local bicycle projects* ○ *Electric bicycle subsidy program* • Provide multi-modal access to recreational resources. **Long Range Strategies Santa Cruz County (SCCRTC):** • Increase percentage of work trips done by bicycle to five percent of all trips and 20 percent of all work trips by 2035; do so by prioritizing bikeway projects based on: 1) increased safety or access; 2) complete gaps in the regional bicycle network; 3) high-demand, high-density areas and commute routes; 4) along popular recreational routes. Develop a program to measure and monitor growth rates. • Support efficient connections among all transportation modes. • Plan transportation improvements which are consistent with the needs and desires of residents and businesses of the region and which are closely coordinated with local land-use and transportation planning policies, including those of the Cities of Santa Cruz, Watsonville, Capitola and Scotts Valley, the County of Santa Cruz, UCSC, the Santa Cruz Metropolitan Transit District, the Association of Monterey Bay Area Governments, the Coastal Commission, Caltrans, other transportation agencies, and neighboring counties. • Encourage transit-oriented development and provide alternatives to automobile commutes by linking land-use decisions with transit, bikeway, pedestrian, and park-and-ride investments. • Allow for and anticipate future mobility needs, taking into account projected future demographics. • Emphasize sustainable transportation modes consistent with regional environmental policies. • Ensure that transportation projects contribute to the protection of biological and scenic resources, open space, and agricultural land.

Report Name	Date	Goals	
RTP 2010 Santa Cruz County Regional Transportation Plan	6/1/2010	1	Preserve and maintain the existing transportation system, emphasizing safety, security and efficiency.
		2	Increase mobility by providing an improved and integrated multi-modal transportation system.
		3	Coordinate land use and transportation decisions to ensure that the region's social, cultural, and economic Vitality is sustained for current and future generations.
		4	Ensure that the transportation system complements and enhances the natural environment of the Monterey Bay region and reduce greenhouse gas emissions.
		5	Make the most efficient use of limited transportation financial resources.
		6	Solicit broad public input on all aspects of regional and local transportation plans, projects and funding.
		1.3.1:	Support all forms of transportation demand management strategies for school and work trips, including, but not limited to, flextime, carpooling, vanpooling, bus pass programs, preferential parking, telecommuting, emergency ride home, bike parking and bike support facilities.
		1.3.10:	Encourage school districts and other public agencies to plan and implement transportation demand management and alternative transportation strategies.
		1.3.12:	Encourage development and use of bicycle delivery services.
		1.3.13:	Encourage employers to make bicycles and bike facilities available for business-related trips; to provide incentives or reimbursement to employees that use their own bicycles for business-related trips; and to facilitate use of the bicycle commuting tax incentives pursuant to Internal Revenue Service Code.
		1.5.4:	Retain and/or enhance existing sidewalks, bikeways and bus turnouts in road improvement projects incorporating "Complete Streets" concepts.
		1.6.2:	Reduce bicycle and pedestrian collisions by reducing the potential for conflicts between bicycles and autos and between pedestrians and autos.
		1.6.3:	Minimize adverse impacts on bicyclists and pedestrians during construction and maintenance activities by prompt repair, sweeping, and avoiding longitudinal seams on all road edges and curb areas including bicycle lanes and by following current best practices.
		1.6.4:	Encourage law enforcement agencies to take a more active role in the enforcement of laws governing the operation of bicycles and of motorists who are at fault in bicycle-motor vehicle accidents.
		1.6.5:	Encourage driver instruction about sharing the road with bicycles and encourage bicyclists to attend safety education programs; support continuation of bicycle traffic school for bicyclist offenders.
		1.6.9:	Improve bicyclists' safety by eliminating impediments along all streets and bikeways, including but not limited to conducting regular street and pathway sweeping, bike lane repainting, trimming vegetation, and implementing traffic signal detection of bicycles.
		2.1:	Ensure that all major corridors provide a choice of transportation modes and are designed with multi-modal amenities such as bus stops, turnouts and shelters, bike lanes and sidewalks.
		2.1.1:	Consider the needs of the non-motorized traveler in all programming, planning, maintenance, construction, operations, and project development activities and products. Whenever feasible, the incorporation of pedestrian, bicycle, and transit facilities should be incorporated in all capital projects.

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		2.3.5: Support allowing bicycles inside buses under specified conditions. 2.4.4: Emphasize pedestrian and bicycle safety and direct access in urban area collector, arterial and intersection improvements. 2.4.9: Support park-and-ride lot development where appropriate, including links with express bus service to key employment and education centers and other alternative transportation modes. 2.7.1: Construct and mark bikeways on roads and bridges consistent with state standards. 2.7.2: Locate bikeways as bicycle lanes on roads unless a more direct bike path can be provided. 2.7.3: Maintain adequate outside travel lane width (14 feet) when no bicycle lane can be accommodated. 2.7.4: Support promotion and transportation safety programs to encourage safe and frequent use of alternative transportation modes. 2.7.5: Ensure that the public is informed about safe bicycling routes and options. 2.7.6: Support programs which deter bicycle thefts. 2.7.7: Facilitate cooperation among adjacent jurisdictions, both in-county and with adjacent counties, to install continuous bikeways and bike routes; Support programs to increase access to bicycles such as bike-sharing; discounts for bikes, helmets and other accessories; free bikes; inexpensive bike loans or rentals. 2.7.8: Bicycle projects funded by the RTC shall be reviewed by the RTC's Bicycle Committee. 2.8.1: Provide bicycle racks and/or lockers that are consistent with best practice design guidelines at park and ride lots, transit centers and bus stops; bicycles on transit and pedestrian connections to transit; and potential inter-connections with future uses of the rail line within Santa Cruz County. 3.1.1: Regularly develop and update local pedestrian and bike plans of all local jurisdictions, UCSC, and Cabrillo College, and implement projects from those plans. 3.1.2: Regularly review the General Plans for Santa Cruz County and the cities of Capitola, Santa Cruz, Scotts Valley and Watsonville, Local Coastal Programs, as well as the UCSC Long Range Development Plans to support RTP goals and policies. 3.3.2: Limit on-street parking on arterial and collector streets to accommodate bike lanes. 3.4.2: Encourage showers/lockers in new commercial and industrial development. 3.4.3: Encourage new recreation/visitor-serving development to include transit and bicycle improvements. 3.4.4: Provide alternative transportation information as well as adequate and secure bicycle parking at special events, and at public, private, commercial and educational facilities. 3.4.6: Limit the number of driveways in new commercial developments to reduce auto/bike conflicts. 3.7.2: Encourage safe routes to schools by providing improved bicycle and pedestrian facilities, improved transit service traffic-calming measures, and bicycle rider training programs for students. 3.7.3: Ensure that senior, youth, medical, low-income and other transit dependent oriented facilities are served by bicycle, pedestrian and transit services/facilities. 4.2.3: Support investments that reduce vehicle miles traveled using smart growth strategies, such as infill and mixed used development and other strategies that increase connectivity.

Report Name	Date	Goals
		4.2.4: Support a variety of strategies, including but not limited to, increased transit ridership, bicycling, walking, carpooling, vanpooling, telecommuting/teleconferencing, that reduce vehicle miles traveled. 4.3.1: Encourage the development of designated recreational trails for pedestrian, bicyclist, and equestrian use. 5.2.1: Ensure that proposed improvements to the transportation system are within the community's ability to finance and operate. 5.2.2: Support new assessment districts and local or regional traffic impact fees on new development. 5.2.3: Encourage private development proposals to include transit, bike, car sharing and pedestrian service improvements and financial support of transit service, consistent with transit improvement plans. 5.3.4: Seek additional funding sources to support and expand alternative transportation mode facilities and services. 5.4.2: Give high funding priority to pedestrian, bicycle, and other alternative transportation mode improvements that serve students. 5.4.4: Assign high priority to development of sidewalks and bike lanes on collectors and arterials in urban areas. 5.4.5: Assign high priority to projects approved during the 1999** Major Transportation Investment Study decision-making process.
The Sanctuary Scenic Trail Standards Manual	6/1/2005	**Trail Goals** • Enhance appreciation and protection of the Monterey Bay National Marine Sanctuary by promoting public use and enjoyment at its shoreline. • Provide public trail access along the shoreline of the Monterey Bay, without harming sensitive areas. • Enhance appreciation and protection of the marine sanctuary; our coastal environment and local communities through engaging interpretation and information. • Encourage alternative transportation and draw travelers out of their cars. • Maximize ocean views and scenic coastal vistas while connecting local trail systems, interpretive facilities and points of interest along the way. • Provide a sense of continuity along the entire trail route through unifying visual elements • Promote environmentally sensitive and respectful trail use.
Santa Cruz County Bicycle Plan	3/1/2011	**Objectives** • Bicycle Plan objectives, policies, and goals including some items outlined in the 1994 General Plan and Local Coastal Program for Santa Cruz County, and the 2010 Santa Cruz County Regional Transportation Plan include: • To encourage bicycle travel as a major form of transportation in order to increase bicycle use to 20% of all work trips and to increase general bicycle trips to 5% of all trips by the year 2035. (RTP 2.7) • To develop a bikeway network maximizing the safety and convenience of users of all levels of experience within that system. The network should be primarily for commuter travel designed to increase the potential of combining bicycle travel with other forms of transportation and also include the opportunity for recreational use. Support promotion and transportation safety programs to encourage safe and frequent use of alternative transportation modes. (RTP 2.7.4, GP 3.8a)

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		• To coordinate the County's bikeway planning efforts with local cities and adjacent counties and other agency to provide an integrated regional bikeway system and to actively seek all available means of financing bikeways including State and Federal grants. (GP 3.8b) • Reduce bicycle collisions by reducing the potential for bicycle and auto conflicts. (RTP 1.6.2) • To encourage the design of pedestrian, bicycle, and vehicle circulation and parking to be safe, convenient, readily understandable, and coordinated with development on surrounding properties; and encourage design which minimizes the visual impact and reduces the scale of paving materials and parking. **Policies** • System Continuity. Plan a bikeway network to integrate with other modes of transportation (train or transit stations and Park and Ride lots, etc.) in order to encourage and support the use of bicycling and reduce the use of motor vehicles. (GP 3.8.1) • Coordinate the planning, design and construction of bikeway systems with all implementing agencies. • Ensure that all major corridors provide a choice of transportation modes and are designed with multi-model amenities such as bus stops, turnouts and shelters, and bike lanes and sidewalks. (RTP 2.1) • Maintain adequate outside travel lane width (14 feet) when no bicycle lane can be accommodated. (RTP 2.7.3) **Commuting** • Design regional bicycle routes to connect residential areas with major activity centers (employment, education, civic, etc.) by including bikeway network development as part of the Capital Improvements Program to prioritize construction or retrofits for completion of specific routes. (GP 3.8.2) • Encourage employers to make bicycles and bike facilities available for business-related trips. (RTP 1.3.13) • Encourage the provision of bicycle racks, showers, lockers, and other storage facilities at destination, where practical and economically feasible, when reviewing discretionary permits for major activity centers. These facilities should be provided at a level consistent with the County goal of 5% total bicycle travel. (GP 3.8.4) • Emphasize safe and convenient modes of transportation for all transit riders, motorists, bicyclist, and pedestrians. • Require new recreation and visitor-serving developments in the Coastal Zone to support alternative transportation to the beaches, e.g., bikes, small scale shuttle service (GP7.7.31). • Construct and mark bicycle routes in conformance with state standards, as outlined in the California Manual of Uniform Traffic Control Devices and the California Highway Design Manual. • Locate bikeways as bicycle lanes adjacent to the main traveled way unless a more direct and useful separated bike path can be provided. Where bicycle lanes are not possible due to right-of-way restrictions, etc., include a wide curb lane. • Build all bridges with enough width to safely accommodate bicycle travel. Allow for 4-foot (1.2m) minimum bike lanes. • Retain and/or enhance all existing bikeways along with roadway improvement projects by incorporating "Complete Streets" concepts ensuring that bike lanes are not narrowed to the point that them become substandard.

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		• Limit the number of driveways when planning new commercial/residential developments in order to reduce automobile-bicycle conflicts. (RTP 3.4.6) • Limit on-street parking on arterial and collector streets, encourage parking alternatives, pursue off-street parking development as methods to provide Class II bike lanes and do not eliminate joint like lanes/parallel shoulder parking unless the new bike lanes are effectively as wide or wider. • Install in all existing and proposed signalized intersections bicycle detector loops (a device to trigger traffic signal phasing) that are recognizable by the cyclist (from GP program "h" on page 3.16). **Bicycle Parking** • Provide convenient, secure bicycle parking at private and public facilities and commercial districts through parking ordinance requirements. (RTP 3.4.4) • Require that event sponsors provide safe bicycle access and secure bicycle parking at special events. (RTP 3.4.4) • Provide bicycle parking stands (facilities) at all primary public points and at appropriate neighborhood access points (GP program "b" on page 3-16). • Modal Interaction. Encourage other modes of transportation (buses, trains, etc.) to plan for, and provide space for carrying, recreational and commuting bicyclists on public transportation systems. Include secure bicycle parking facilities with development of transit shelters incorporating Santa Cruz County Transit District design approval. (GP 3.8.3) • Include bicycle access in all fixed guideway planning and design. • Regional Continuity. Coordinate with other jurisdictions to adopt a system of bikeways that complements the county system. • Regional Consistency. Periodically revise the Master Plan of Countywide Bikeways (MPCB) component of the Transportation Element to reflect changing conditions, and to evaluate proposed development projects for compatibility with the MPCB through the subdivision and development permit approval process. (GP 3.8.6) • Maintenance. Require that contractors and utility companies doing roadside work maintain the road edge in the best possible condition during construction and, upon completion, improve the road shoulder to the preconstruction condition or better. • Require those entities performing roadside work to maintain the road edge in the best possible condition during construction, explore ways to avoid lengthwise seams in bike lanes and require prompt repair (including pavement) and restriping of bike lanes before the project is considered complete. • Retain all existing bikeways along with roadway improvement projects. (RTP 1.5.4) • Ensure the bicycle facilities remain in a usable condition through regular maintenance and sweeping. • Education and Safety. Encourage bicycle rider training program for all elementary school children in Santa Cruz County and a better instruction of motorists about sharing the road with bicyclists should be included in all driver's education courses for high school students and adults. • Continue to identify stable funding for the Community Traffic Safety Coalition Bicycle Safety Program. **Goals** **The primary goals of the Bicycle Plan are to:**

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		1 Improve bicycle circulation; 2 Increase use of bicycling for short- and long-range trips, and reduce the use of motor vehicle; and 3 Design all streets and roads to be "bicycle friendly" to equally accommodate both motorized and non-motorized modes of transportation.
Transportation Agency for Monterey County (TAMC) 2005 General Bikeways Plan	5/25/2005	Goals: **Bicycle Transportation** 1 Expand, improve, and maintain facilities for bicyclists that accommodate safe, convenient, and accessible bicycle transportation across Monterey County. 2 Increase number of commute trips by bicycle. 3 Increase number of recreation and non-commute trips by bicycle. 4 Increase number of shopping and errand trips by bicycle. 5 Increase education and awareness of the value of using bicycles for commute and non-commute trips. **Objectives** Objective 1: Given the limits on available funding for bicycle projects, Monterey County and the cities therein plan to increase the number of bicycle facility miles in Monterey County by 10% from 246 miles to 271 miles by the year 2015. This increase in bicycle facility mileage based on the implementation of a portion of the 17 projects on the "Highest Priority Regional Bicycle Projects" list in Section 4 of the Bikeways Plan. Objective 2: Given the limits on available funding for bicycle projects, Monterey County and the cities therein plan increase the number of bicycle facility miles on the Monterey Bay Sanctuary Scenic Trail from the existing 14 miles to 30 miles, completing the trail by the year 2025. This increase in bicycle facility mileage is consistent with the mileage increased with the implementation of this project as listed on the "Highest Priority Regional Bicycle Projects" list in Section 4 of the Bikeways Plan. Objective 3: Increase the number of trips made by bicycle from the existing .8% to 3% by the year 2015. Policies Policy 1: Identify gaps in the countywide bicycle facilities network and define priorities for eliminating these gaps by making needed improvements. Policy 2: Give priority to bicycle facilities that will be used for commute routes. Policy 3: Determine funding needs for expanding and improving bicycle facilities, and support local efforts to find, apply for, and receive funding to meet those needs, including TAMC's Transportation Development Act 2% Program for Bicycle and Pedestrian Transportation Projects. Policy 4: Encourage routine maintenance of bikeway network facilities, as funding and priorities allow, including regular sweeping of bikeways and shared-use

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		pathways. Programs to support these maintenance efforts could include: • Continued administration of the Bicycle Service Request Form Program to alert public works departments to bicycle-related hazards, • "Adopt a Trail" programs that involve volunteers for trail clean-up and other maintenance, • Enforcement of sweeping requirements of towing companies following automobile accidents, • Encourage those who drive from fields onto highways and roads to minimize the transfer of mud, dirt, gravel and sand from fields and dirt roads to the public roadways, and • Encourage the removal of mud, dirt, gravel and sand that is transferred to the public roadways as soon as possible.
		Policy 5: Support the development and implementation of effective safety programs for adults and children to educate drivers, bicyclists, and pedestrians as to their rights and responsibilities including: • Enforcement of pedestrian- and bicycle-related laws by local police departments, • Teaching of bicycle safety to school children and drivers, and • Informing interested agencies and organizations about available education materials and assistance such as those programs included administered by the National Bicycle Safety Network. Policy 6: Continue to work with the TAMC Bicycle and Pedestrian Facilities Advisory Committee to provide a forum for the public, and local jurisdictions to help resolve bicycle issues of concern and to develop countywide or sub-regional approaches that could help overcome obstacles standing in the way of achieving TAMC's goals for planning bicycle transportation. Policy 7: Support and encourage local efforts to require the construction of bicycle facilities and amenities, where warranted, as a condition of approval of new development and major redevelopment projects as part of TAMC's goal to coordinate land use decision-making with regional transportation planning. Work with local colleges and universities to develop high quality bicycle and pedestrian facilities. Policy 8: Accommodate, and encourage other agencies to accommodate, the needs for mobility, accessibility, and safety of bicyclists when planning, designing, and developing transportation improvements including: • Reviewing capital improvement projects to make sure that needs of non-motorized travel are considered in programming, planning, maintenance, construction, operations, and project development activities and products,

Report Name	Date	Goals
		and • Incorporating sidewalks, bike lanes, crosswalks, bicycle and pedestrian cut-throughs, or other bicycle improvements into new projects. Policy 9: In order to facilitate regional travel by bicycle, encourage TAMC member agencies to construct bicycle facilities on new roadways as follows: • In coordination with regional and local bikeways plans, • According to the specifications in Chapter 1000 of the Department of Transportation Highway Design Manual, • With consideration of bicycle lanes (Class 2 facilities) on all new major arterials and on new collectors with an Average Daily Traffic (ADT) greater than 3,000, or with a speed limit in excess of 30 miles per hour, and • With special attention to safe design where bicycle paths intersect with streets. Policy 10: Update the TAMC General Bikeways plan and Bicycle Map in concert with the 4-year update schedule for the Regional Transportation Plan to document gaps on the regional bicycle facilities network and set priorities for funding projects. Policy 11: Continue to administer the Bike Protection Program to subsidize the cost of bike racks and lockers in locations most heavily used by bicyclists. Encourage the placement of bike lockers and racks in safe and secure locations. Policy 12: Promote the use of bicycles for trips that are appropriate for bicycle usage, such as trips that are of less than three miles, traverse flat terrain and occur during the daylight hours. Policy 13: Support programs being developed, or in place in the Monterey County region that encourage and promote bicycle travel. These programs could include: • Producing and distributing TAMC's Bicycle Map as resources allow, • Supporting programs that would encourage more students to bicycle to school, • Continuing the encouragement of bicycling as part of transportation demand management and commute alternatives programs, and • Continuing to work with local jurisdictions and partner agencies to sponsor Monterey County Bike Week as an increasingly effective mechanism for promoting bicycle travel and bicycle safety. Policy 14: Work with local agencies to develop a coordinated approach to bicycle signage, the system for which could include: • Directional and destination signs along bikeways and shared use trails, • Location maps in downtown areas and other major pedestrian districts, and

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		• A route identification system and common set of signs for the regional bicycle network identified in TAMC's General Bikeways Plan. Policy 15: Encourage agencies with jurisdiction over controlled intersections to: • Adjust the sensitivity of the motion detectors to identify the presence of bicyclist and not require the use of the pedestrian buttons to cross intersections, • Identify the "best" location for a bicyclist to be recognized by the traffic signal sensor and mark that location on the pavement for use by bicyclists and motorcycles, so as to allow them to most easily activate the sensors for the signal lights, and • Develop the use of video detection devices to activate signals.
Santa Cruz County Local Coastal Program (LCP)	1994	Refer to the Local Coastal Program on the County's website for General Plan/LCP policies. Language which includes the (LCP) initials is part of the Local Coastal Program and applies countywide unless specifically stated that the policy is limited to the coastal zone.

APPENDIX C

MBSST Relationship to Existing Documents Summary

Name	Date	Prepared For	Prepared By	Approval	Summary	Relationship to MBSSTMP
San Lorenzo Valley Trail Feasibility Study	Apr-06	County of Santa Cruz Department of Public Works	Land People	?	Improved bicycle and pedestrian routes have been discussed in the San Lorenzo Valley for many years. In the past few years, the San Lorenzo Valley Trail Committee formed and conducted field studies to focus on this objective. In 2001 the Santa Cruz Public Works department and the Rails-To-Trails Conservancy collaborated on an application for a Caltrans Community-Based Transportation Planning Grant. In May 2002 Caltrans approved the grant to conduct a feasibility study of a trail along the San Lorenzo Valley/Highway 9 corridor between Santa Cruz and Boulder Creek (approximately 15 miles), including an assessment of the potential to the use the Big Trees/Roaring Camp Railroad line as part of the trail.	Opportunity for spur connection
Santa Cruz Industrial Lead Supplemental Structural Assessment Report	23-Jun-06	SCCRTC	HNTB	NA	The report provides a structural assessment of selected structures on the Santa Cruz Industrial Lead. The Supplemental Structural Assessment Report supplements previously completed structural assessments completed by other consultants in July 2005 and August 2005. The July 2005 Structural Assessment and August 2005 La Selva Trestle Supplemental Reports highlighted specific structures that were in need of additional structural assessment "due to a Poor Condition Rating, advance age of the structure, importance/visibility of the structure, and/or potentially high capital and maintenance costs of the structure". The purpose of the Supplemental Structural Assessment Report is to present findings from HNTB's structural assessment of those specific structures.	Ensure structures are compatible with proposed bicycle facilities
City of Watsonville Wetlands Trails Master Plan	9-May-03	City of Watsonville	Swanson Hydrology and Geomorphology	NA	The Trails Master Plan for the City of Watsonville was prepared to improve public access and recreation to areas surrounding Watsonville and Struve Sloughs. The Watsonville Wetlands system provides a rich variety of natural wetland and other habitats within the city and outlying unincorporated areas of Santa Cruz County. A well-designed network of trails will allow for better public access to the sloughs and promote greater community awareness of its assets. The Trails Master Plan calls for a system of paved pedestrian footpaths that will incorporate bicycle use and access for disabled users. The Trails Master Plan was developed considering a host of factors, including various means of travel, Americans with Disabilities Act requirements, public safety concerns, biological and water quality impacts, erosion control, and construction and maintenance costs. Trail alignment, grade, type, construction and design have also been considered in producing the Trails Master Plan.	Identify facilities that overlap with the proposed routes.
Monterey Bay Sanctuary Scenic Trail Master Plan	Jan, 2008	TAMC	Alta Planning & Design	?	The purpose of the Master Plan is to identify the preferred alignment for the trail and to outline an implementation strategy for the project that extends from the Pajaro River in the north to Lovers Point in the south. Recommendations for preferred alignment include design and cost estimates. This information aids in project prioritization, which is essential to efficient implementation. The development of the Master Plan involved several steps, including an extensive resource inventory phase, public participation phase, alignment options and assessment phase, and preferred alignment and improvement plans. The Master Plan is designed to present both the preferred alignment and the process followed to arrive at recommended alignment.	Proposed alignment should tie-into the identified TAMC route.

Name	Date	Prepared For	Prepared By	Approval	Summary	Relationship to MBSSTMP
Monterey Bay Area Mobility 2035	Jun-10	AMBAG	AMBAG	Jun-10	Federal regulations require that the Association of Monterey Bay Area Governments (AMBAG) to develop a long range transportation plan for the three-county Monterey Bay metropolitan region that is both financially constrained and falls under the on-road motor vehicle emissions budget included in the Federal Air Quality Maintenance Plan. The AMBAG region is currently in conformity for its vehicle emissions budget. Because new state legislation, SB 375, calls for MPOs to prepare a Sustainable Communities Strategy (SCS) to be used to synchronize and coordinate both the metropolitan transportation planning process and the regional housing needs allocation process, AMBAG is treating this 2010 update of the MTP as a minor update, with a significantly revised MTP in 2010. Programs and projects listed in this plan serve the stated goals and objectives, as well as meet the transportation needs and deficiencies, Programs and projects are first proposed and adopted in the respective Regional Transportation Plans (RTPs) of the three Monterey Bay Area counties: Monterey, San Benito, and Santa Cruz. The project lists from each RTP are incorporated, in their entirety, into the MTP. The project lists provide all funded (constrained) projects and potential projects (unconstrained) should funding become	Refer to Appendix D and E for projects that have been identified for funding.
City of Capitola Bicycle Transportation Plan	Feb-11	City of Capitola	City of Capitola	Adopted Feb 10, 2011	The City of Capitola Bicycle Transportation Plan (BTP) assesses commuter needs, identifies funding sources and directs the future development of bicycle facilities in the City. It also seeks to carry out the Five Es used by the League of American Bicyclists to identify and rank Bicycle Friendly Communities. The five Es are Evaluation, Engineering, Education, Encouragement, and Enforcement. The Capitola Bicycle Transportation Plan sets goals and objectives for the purpose of increasing the safety and convenience of bicycle commuting in the area. The BTP is an update of the 2005 City of Capitola Bicycle Transportation Plan. It includes or expands upon the goals and objectives put forth in 2005 to improve network connectivity, address dangerous or hazardous areas, and increase education and bicycle resources. In addition to remaining consistent with major City planning documents, the 2011 Bicycle Transportation Plan implements the policies and programs of the Circulation Element of the General Plan. The BTP is intended to aid City of Capitola planners and engineers in prioritization bicycle improvement projects with the goal of increasing bicycle commuting, recreation, tourism, and safety.	Ensure proposed alignment is consistent the facilities identified in this Plan.
Arana Gulch Draft Master Plan	6-2010	City of Santa Cruz	City of Santa Cruz Parks and Recreation Department	?	The City of Santa Cruz acquired Arana Gulch in 1994 as one of the Greenbelt lands, and shortly thereafter opened the property to the public. While popular with hikers strolling along the meadow, bicyclists riding to the Upper Harbor, and visitors of all ages enjoying the scenery and wildlife, recreational use on the property is limited to earthen trails, most of which existed prior to the City's ownership. Only two visitor entrances currently exist and there are no visitor facilities, except trails and associated signage. The intent of the master plan is to establish a vision and goals that will shape the future of Arana Gulch as a unique open space within the City of Santa Cruz. In addition, the Master Plan identifies recreational uses and resource management guidelines to direct future management and enhancement of this natural area.	Ensure proposed alignment links to this area.

Name	Date	Prepared For	Prepared By	Approval	Summary	Relationship to MBSSTMP
Santa Cruz County Bicycle Plan	Mar-11	Santa Cruz County	County of Santa Cruz Department of Public Works	Mar-11	The purpose of this plan is to consolidate into one document all bicycle-related County plans and projects that are currently identified in the County General Plan, the Santa Cruz County Regional Transportation Plan, and other local documents. Although not a part of the General Plan, the Bicycle Plan is consistent with and implements action statements of the Circulation Element of the General Plan and/or County and regional plans. The Plan is intended to aid County planners and engineers in selecting and implementing bicycle improvements with the goal of increasing bicycle commuting.	Ensure proposed alignment is consistent with the facilities identified in this Plan.
Santa Cruz County Regional Transportation Plan	Jun-10	Santa Cruz County	SCCRTP	Jun-10	This 2010 Regional Transportation Plan (called the 2010 RTP) is a minor update of the last version, completed in 2005, and provides guidance for transportation policy and projects through the year 2035. The 2010 RTP is the RTC's comprehensive planning document, which identifies the goals, projects, and programs that will maintain and improve out transportation system over the next twenty-five years. Individual projects listed in the 2010 RTP must still undergo separate design and environmental processes, and can only be implemented as local, state, and federal funds become available.	Review document for identified projects and funding. Include in Plan.
City of Santa Cruz Bicycle Transportation Plan 2008		City of Santa Cruz	City of Santa Cruz Transportation Commission Bicycle / Pedestrian Subcommittee	Adopted November 25, 2008	The emphasis of the 2008 Bicycle Transportation Plan is shifted from that of the 2000 and 2004 plans. Many of the significant projects from those plans have been completed - Bay Street, Beach Street, High Street, Soquel Avenue and major portions of the San Lorenzo River Path. The 2008 plan is focused on creating a detailed network of routes to give bicyclists a greater range of choices. There is potential to develop a multi-purpose trail for bicyclists and pedestrians within the Union Pacific rail ROW. The City of Santa Cruz should establish and maintain access to the rail ROW and potential new transportation facilities when considering new development projects. This 2008 Plan includes a wider variety of bicycle facilities, not just bike lanes and bike paths, but signed bike routes, traffic-calmed bike boulevards, shared pavement markings, or "sharrows", and developed multi-purpose trails. This 2008 Plan supports the grand scale of the regional Monterey Bay Sanctuary Scenic Trail Network as well as the small scale of simple cut-through easements for access and improved railroad crossings.	Ensure alignment includes these facilities.
University of California, Santa Cruz 2008 Bicycle Plan	Nov-08	UCSC	UCSC	Nov-08	The purpose of the UCSC 2008 Bicycle Plan is to serve as a guide for improving bicycling conditions and continue to encourage and support bicycling as a sustainable transportation mode on, to and from the UC Santa Cruz campus. As such, this document describes the existing policies and facilities related to bicycling in the campus context, and it includes a list of projects and programs intended to improve bicycling as a viable commute mode in the future. The plan complies with the requirements and guidelines articulated in Section 891.2 of the California Streets and Highways Code. By complying with this element of the vehicle code, the plan meets the requirements of the Bicycle Transportation Account (BTA), a Caltrans funding source for bicycle improvements projects. The plan is not intended to serve as a standards manual for design and construction of bicycle facilities.	Ensure alignment includes a spur to connect to these facilities.
Completing the California Coastal Trail	Jan, 2003	Coastal Conservancy	Coastal Conservancy	Jan, 2003 per SB908	The legislature and the Governor directed the Coastal Conservancy, through SB908 of 2001, to report on a proposed trail that would stretch 1,300 miles along the entire California coast and across dozens of political jurisdictions.	Ensure consistency with Coastal Conservancy policies and map.

Name	Date	Prepared For	Prepared By	Approval	Summary	Relationship to MBSSTMP
Watsonville VISTA 2030 General Plan Circulation Element	Oct-12	City of Watsonville	Calthorpe, Catalyst, TIP, RBF, Kimley-Horn		Circulation element policies are consistent with Watsonville bicycle plan and county RTP policies.	Use Watsonville bicycle plan, County General Plan, and RTP
City of Capitola General Plan Circulation Element	Sept, 1989	City of Capitola	Freitas + Freitas	Sept, 1989	Circulation element contains objectives, policies, and implementation measures.	Ensure consistency with General Plan objectives, policies, and implementation measures.
City of Santa Cruz General Plan 2030 Mobility Chapter	Feb, 2009	City of Santa Cruz	?	?	This chapter corresponds to the required circulation element. Its purpose is to set forth policies and ways to ease the ability of people and vehicles to move around, out of, and into the city in the long term, through 2030. This chapter includes goals, policies, and actions that guide city bodies in making decisions related to the city's transportation and road systems and in implementing the actions recommended in this chapter.	Ensure consistency with Goals, Policies, and Actions
Santa Cruz County General Plan Circulation Chapter	May, 1995	Santa Cruz County	?		The circulation element is intended to be the key policy statement of the County regarding transportation facilities and programs serving the unincorporated areas. It is an integral part of the General Plan and Local Coastal Program Land Use Plans that provides a basis for transportation related decisions and complements the other General Plan and LCP Land Use Plan elements. Specifically, the Circulation Element clarifies transportation issues raised in other General Plan elements and offers guidance towards solutions.	Ensure consistency with Goals, Objectives, policies, and programs
Santa Cruz County General Plan 1983 Local Coastal Program	1994	Santa Cruz County	Santa Cruz County Planning Department	12/19/1994	The 1994 General Plan and Local Coastal Program Land Use Plan have been combined into one document. The Local Coastal Program (LCP) consists of land use plans, the zoning ordinance, zoning district maps, and other implementing actions, which, when taken together, meet the requirements of, and implement the provisions and policies of the Coastal Act. The LCP policies of the General Plan reflect the coastal issues and concerns of the County which is required to be consistent with the statewide policies of the Coastal Act. The LCP is legally binding on the County and provides a permanent program for coastal protection.	Ensure consistency with Goals, Objectives, policies, and programs
Maps						
Park-and-Ride	NA	SCCRTC	Commute Solutions	NA	Map identifying locations of park and ride lots within SC County.	Bicycle staging opportunity
Santa Cruz County Bike Map	NA	SCCRTC	Eureka Cartography	NA	Map identifying bicycle routes, parks, bike shops, hostels, campgrounds, transit centers, schools, colleges, and golf courses	Ensure proposed facilities tie into existing facilities and destinations
Santa Cruz Branch Rail Line Informational Right-of-way maps	Nov, 2005	SCCRTC	SCCRTC	NA	Maps display Union Pacific Railroad Company's Santa Cruz Branch Line ROW as developed by the County of Santa Cruz Geographic Information Systems Department on behalf of the SCCRTC. The complete length of the ROW is divided into 62 maps. These maps are intended to act as a reference for planning purposes only. They provide approximate ROW width and location abutting land use and points of reference for the Santa Cruz Branch Rail Line given available data.	Maps to be utilized in developing proposed bicycle facilities.

APPENDIX D

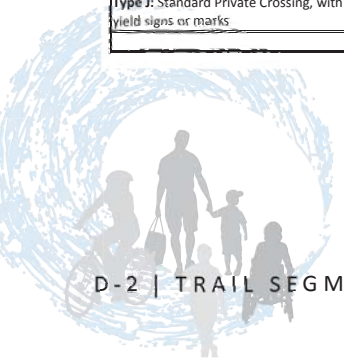
Trail Segment Costs

UNIT COST ESTIMATES

DRAFT

			SEGMENT 1		SEGMENT 2		SEGMENT 3		SEGMENT 4		SEGMENT 4A		SEGMENT 4B	
	SEGMENT LENGTH		5,600 LF / 1.06 MI		25,170 LF / 4.77 MI		5,870 LF / 1.11 MI		7,300 LF / 1.38 MI		7,470 LF / 1.41 MI		4,510 LF / 0.85 MI	
TYPE	UNIT	UNIT PRICE	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total
Rail Trail														
Multi-Use Paved Path (12' paved): moderate terrain, drainage, utilities	LF	$162							3,520	$570,240				
Multi-Use Paved Path (12' paved): difficult terrain, retaining walls, drainage, utilities	LF	$405												
Multi-Use Paved/Unpaved Path (12' paved, with 6' DG path): moderate terrain, drainage, utilities	LF	$180					5,870	$1,056,600						
SUBTOTAL			**0**	**$0**	**0**	**$0**	**5,870**	**$1,056,600**	**3,520**	**$570,240**	**0**	**$0**	**0**	**$0**
Coastal Trail														
Multi-Use Paved Path (12' paved): moderate terrain, drainage, utilities	LF	$162							3,780	$612,360				
Multi-Use Paved Path (12' paved): difficult terrain, retaining walls, drainage, utilities	LF	$405												
Unpaved Trail (native soil); 6' - 8' wide, level terrain	LF	$7	800	$5,600							7,470	$52,290		
Unpaved Trail (native soil); 10' - 12' wide on existing road	LF	$11	200	$2,200										
Class II Bike Lanes	LF	$20											4,510	$90,200
Class III Bike Route, wayfinding signage	LF	$6	4600	$27,600	25,170	$151,020								
SUBTOTAL			**5,600**	**$35,400**	**25,170**	**$151,020**	**0**	**$0**	**3,780**	**$612,360**	**7,470**	**$52,290**	**4,510**	**$90,200**
Bridge Structures														
Modified Existing Bridge	EA	Varies												
New Pre-Engineered Bridge	EA	Varies					1	$200,000						
SUBTOTAL			**0**	**$0**	**0**	**$0**	**1**	**$200,000**	**0**	**$0**	**0**	**$0**	**0**	**$0**
Trail Amenities														
Trailhead signage	EA	$4,000	1	$4,000	2	$8,000								
Interpretive signage	EA	$500	3	$1,500	2	$3,000								
Wayfinding signage	Allow/Mile	$2,500	1	$2,500	2	$5,000	1	$2,500	2	$5,000				
Bike rack	EA	$1,000	2	$2,000	2	$2,000								
Bench	EA	$1,500	2	$3,000	2	$6,000	1	$1,500						
Shade structure with bench	EA	$15,000	1	$15,000										
Fencing	LF	$40					5883	$235,320	2640	$105,600				
Lighting	Allow/Mile													
Restroom	EA	$30,000												
SUBTOTAL				**$28,000**		**$24,000**		**$239,320**		**$110,600**		**$0**		**$0**
Staging Area Access														
Trailhead, small (10 cars)	EA	$30,000												
Trailhead, medium (20 cars), portable restroom	EA	$50,000												
Trailhead, large (30 cars), restroom, drinking fountain	EA	$80,000												
SUBTOTAL			**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**
Rail Track and Street Crossings														
TYPE A: Tie into railroad control cab, ped gates, barriers,roadway treatments	EA	$250,000	0	$0	0	$0	0	$0	1	$250,000	0	$0	0	$0
Type B: Traffic signal modication with new crosswalk, ped equipment, loops, striping	EA	$50,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type C: HAWK including all elec and striping/signing	EA	$150,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type D: Active Enhanced Midblock, either IRWL or overhead, ppb, yield marks, signs, path controls	EA	$100,000	0	$0	0	$0	0	$0	1	$100,000	0	$0	0	$0
Type E: Passive Enhanced Midblock, with yield marks, signs, crosswalk, path controls	EA	$25,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type F: Standard Midblock with signs, crosswalk, path controls	EA	$20,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type G: Traffic Calming Measures, medians or curb extensions, warning signs, crosswalk	EA	$80,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type H: Connection Facilities, with redirected path to ex xwalk and bike lanes or sharrows	EA	$60,000	0	$0	0	$0	0	$0	1	$60,000	0	$0	0	$0
Type I: Rail crossing WITHOUT railroad signal mods, with barriers at tracks and path, roadway xing signs and markings, path yields	EA	$40,000	0	$0	0	$0	$0	$0	0	$0	0	$0	0	$0
Type J: Standard Private Crossing, with stops for local road crossing and path yield signs or marks	EA	$10,000	0	$0	0	$0	0	$0	1	$10,000	0	$0	0	$0
SUBTOTAL			**0**	**$0**	**0**	**$0**	**0**	**$0**	**4**	**$420,000**	**0**	**$0**	**0**	**$0**

	SEGMENT 1	SEGMENT 2	SEGMENT 3	SEGMENT 4	SEGMENT 4A	SEGMENT 4B
	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
SEGMENT TOTALS	**$63,400**	**$175,020**	**$1,495,920**	**$1,713,200**	**$52,290**	**$90,200**
RAIL TRAIL/COASTAL TRAIL TOTALS				**$1,713,200**	**$142,490**	
COMBINED TOTAL (HARD COSTS)	**$63,400**	**$175,020**	**$1,495,920**	**$1,855,690**		



UNIT COST ESTIMATES

DRAFT

			SEGMENT 5.1		SEGMENT 5.2		SEGMENT 5.3		SEGMENT 5A		SEGMENT 5B		SEGMENT 5C		SEGMENT 5D		SEGMENT 5E		SEGMENT 5F	
	SEGMENT LENGTH		7,890 LF / 1.49 MI		13,630 LF / 2.58 MI		18,520 LF / 3.51 MI		580 LF / 0.11 MI		3,390 LF / 0.64 MI		2,710 LF / 0.51 MI		7,280 LF / 1.38 MI		1,150 LF / 0.22 MI		570 LF / 0.11 MI	
TYPE	**UNIT**	**UNIT PRICE**	**Qty.**	**Total**	**Qty.**	**Total**	**Qty.**	**Total**	**Qty.**	**Total**	**Qty.**	**Total**	**Qty.**	**Total**	**Qty.**	**Total**	**Qty.**	**Total**	**Qty.**	**Total**
Rail Trail																				
Multi-Use Paved Path (12' paved): moderate terrain, drainage, utilities	LF	$162	7,890	$1,278,180	13,630	$2,208,060	18,520	$3,000,240												
Multi-Use Paved Path (12' paved): difficult terrain, retaining walls, drainage, utilities	LF	$405																		
Multi-Use Paved/Unpaved Path (12' paved, with 6' DG path): moderate terrain, drainage, utilities	LF	$180																		
SUBTOTAL			**7,890**	**$1,278,180**	**13,630**	**$2,208,060**	**18,520**	**$3,000,240**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**
Coastal Trail																				
Multi-Use Paved Path (12' paved): moderate terrain, drainage, utilities	LF	$162																		
Multi-Use Paved Path (12' paved): difficult terrain, retaining walls, drainage, utilities	LF	$405																		
Unpaved Trail (native soil); 6' - 8' wide, level terrain	LF	$7							580	$4,060	3,390	$23,730	2,710	$18,970	7,820	$54,740	1,150	$8,050	570	$3,990
Unpaved Trail (native soil); 10' - 12' wide on existing road	LF	$11																		
Class II Bike Lanes	LF	$20																		
Class III Bike Route, wayfinding signage	LF	$6																		
SUBTOTAL			**0**	**$0**	**0**	**$0**	**0**	**$0**	**580**	**$4,060**	**3,390**	**$23,730**	**2,710**	**$18,970**	**7,820**	**$54,740**	**1,150**	**$8,050**	**570**	**$3,990**
Bridge Structures																				
Modified Existing Bridge	EA	Varies																		
New Pre-Engineered Bridge	EA	Varies																		
SUBTOTAL			**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**
Trail Amenities																				
Trailhead signage	EA	$4,000	1	$4,000	1	$4,000	2	$8,000												
Interpretive signage	EA	$500			2	$1,000	3	$1,500												
Wayfinding signage	Allow/Mile	$2,500	1	$2,500	2	$5,000	1	$2,500												
Bike rack	EA	$1,000	2	$2,000	2	$2,000	4	$4,000												
Bench	EA	$1,500	3	$4,500	4	$6,000	3	$4,500												
Shade structure with bench	EA	$15,000																		
Fencing	LF	$40			13628	$545,120	18520	$740,800												
Lighting	Allow/Mile																			
Restroom	EA	$30,000			1	$30,000														
SUBTOTAL				**$13,000**		**$593,120**		**$761,300**		**$0**		**$0**		**$0**		**$0**		**$0**		**$0**
Staging Area Access																				
Trailhead, small (10 cars)	EA	$30,000																		
Trailhead, medium (20 cars), portable restroom	EA	$50,000																		
Trailhead, large (30 cars), restroom, drinking fountain	EA	$80,000																		
SUBTOTAL			**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**
Rail Track and Street Crossings																				
TYPE A: Tie into railroad control cab, ped gates, barriers,roadway treatments	EA	$250,000	1	$250,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type B: Traffic signal modication with new crosswalk, ped equipment, loops, striping	EA	$50,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type C: HAWK including all elec and striping/signing	EA	$150,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type D: Active Enhanced Midblock, either IRWL or overhead, ppb, yield marks, signs, path controls	EA	$100,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type E: Passive Enhanced Midblock, with yield marks, signs, crosswalk, path controls	EA	$25,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type F: Standard Midblock with signs, crosswalk, path controls	EA	$20,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type G: Traffic Calming Measures, medians or curb extensions, warning signs, crosswalk	EA	$80,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type H: Connection Facilities, with redirected path to ex xwalk and bike lanes or sharrows	EA	$60,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type I: Rail crossing WITHOUT railroad signal mods, with barriers at tracks and path, roadway xing signs and markings, path yields	EA	$40,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type J: Standard Private Crossing, with stops for local road crossing and path yield signs or marks	EA	$10,000	1	$10,000	3	$30,000	12	$120,000		$0		$0		$0		$0		$0		$0
SUBTOTAL			**2**	**$260,000**	**3**	**$30,000**	**12**	**$120,000**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**

	SEGMENT 5.1	SEGMENT 5.2	SEGMENT 5.3	SEGMENT 5A	SEGMENT 5B	SEGMENT 5C	SEGMENT 5D	SEGMENT 5E	SEGMENT 5F
	TOTAL	**TOTAL**	**TOTAL**	**TOTAL**	**TOTAL**	**TOTAL**	**TOTAL**	**TOTAL**	**TOTAL**
SEGMENT TOTALS	**$1,551,180**	**$2,831,180**	**$3,881,540**	**$4,060**	**$23,730**	**$18,970**	**$54,740**	**$8,050**	**$3,990**
RAIL TRAIL/COASTAL TRAIL TOTALS	**$8,263,900**			**$113,540**					
COMBINED TOTAL (HARD COSTS)	**$8,377,440**								

UNIT COST ESTIMATES

DRAFT

			SEGMENT 6		SEGMENT 6A		SEGMENT 7		SEGMENT 7A		SEGMENT 7B		SEGMENT 8		SEGMENT 9		SEGMENT 9A		SEGMENT 9B	
	SEGMENT LENGTH		7,160 LF / 1.36 MI		670 LF / 0.13 MI		11,450 LF / 2.17 MI		410 LF / 0.08 MI		4,480 LF / 0.85 MI		4,070 LF / 0.77 MI		8,100 LF / 1.53 MI		310 LF / 0.06 MI		730 LF / 0.14 MI	
TYPE	**UNIT**	**UNIT PRICE**	**Qty.**	**Total**	**Qty.**	**Total**	**Qty.**	**Total**	**Qty.**	**Total**	**Qty.**	**Total**	**Qty.**	**Total**	**Qty.**	**Total**	**Qty.**	**Total**	**Qty.**	**Total**
Rail Trail																				
Multi-Use Paved Path (12' paved): moderate terrain, drainage, utilities	LF	$162	7,160	$1,159,920			11,450	$1,854,900							6,750	$1,093,500				
Multi-Use Paved Path (12' paved): difficult terrain, retaining walls, drainage, utilities	LF	$405													1,350	$546,750				
Multi-Use Paved/Unpaved Path (12' paved, with 6' DG path): moderate terrain, drainage, utilities	LF	$180																		
SUBTOTAL			**7,160**	**$1,159,920**	**0**	**$0**	**11,450**	**$1,854,900**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**8,100**	**$1,640,250**	**0**	**$0**	**0**	**$0**
Coastal Trail																				
Multi-Use Paved Path (12' paved): moderate terrain, drainage, utilities	LF	$162									4,480	$725,760								
Multi-Use Paved Path (12' paved): difficult terrain, retaining walls, drainage, utilities	LF	$405																		
Unpaved Trail (native soil); 6' - 8' wide, level terrain	LF	$7																		
Unpaved Trail (native soil); 10' - 12' wide on existing road	LF	$11			670	$7,370														
Class II Bike Lanes	LF	$20							410	$8,200			2,000	$40,000						
Class III Bike Route, wayfinding signage	LF	$6															310	$1,860	730	$4,380
SUBTOTAL			**0**	**$0**	**670**	**$7,370**	**0**	**$0**	**410**	**$8,200**	**4,480**	**$725,760**	**2,000**	**$40,000**	**0**	**$0**	**310**	**$1,860**	**730**	**$4,380**
Bridge Structures																				
Modified Existing Bridge	EA	Varies											1	$900,000						
New Pre-Engineered Bridge	EA	Varies	1	$1,000,000											1	$1,000,000				
SUBTOTAL			**1**	**$1,000,000**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**1**	**$900,000**	**1**	**$1,000,000**	**0**	**$0**	**0**	**$0**
Trail Amenities																				
Trailhead signage	EA	$4,000					1	$4,000					1	$4,000	1	$4,000				
Interpretive signage	EA	$500																		
Wayfinding signage	Allow/Mile	$2,500	2	$5,000																
Bike rack	EA	$1,000													2	$2,000				
Bench	EA	$1,500													3	$4,500				
Shade structure with bench	EA	$15,000													1	$15,000				
Fencing	LF	$40	7160	$286,400			3000	$120,000							1500	$60,000				
Lighting	Allow/Mile																			
Restroom	EA	$30,000																		
SUBTOTAL				**$291,400**		**$0**		**$124,000**		**$0**		**$0**		**$4,000**		**$85,500**		**$0**		**$0**
Staging Area Access																				
Trailhead, small (10 cars)	EA	$30,000																		
Trailhead, medium (20 cars), portable restroom	EA	$50,000																		
Trailhead, large (30 cars), restroom, drinking fountain	EA	$80,000					1	$80,000												
SUBTOTAL			**0**	**$0**	**0**	**$0**	**1**	**$80,000**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**
Rail Track and Street Crossings																				
TYPE A: Tie into railroad control cab, ped gates, barriers,roadway treatments	EA	$250,000	1	$250,000	0	$0	2	$500,000	0	$0	0	$0	1	$250,000	2	$500,000		$0		$0
Type B: Traffic signal modication with new crosswalk, ped equipment, loops, striping	EA	$50,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	1	$50,000		$0		$0
Type C: HAWK including all elec and striping/signing	EA	$150,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type D: Active Enhanced Midblock, either IRWL or overhead, ppb, yield marks, signs, path controls	EA	$100,000	0	$0	0	$0	1	$100,000	0	$0	0	$0	0	$0	1	$100,000		$0		$0
Type E: Passive Enhanced Midblock, with yield marks, signs, crosswalk, path controls	EA	$25,000	0	$0	0	$0	4	$100,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type F: Standard Midblock with signs, crosswalk, path controls	EA	$20,000	1	$20,000	0	$0	5	$100,000	0	$0	0	$0	0	$0	1	$20,000		$0		$0
Type G: Traffic Calming Measures, medians or curb extensions, warning signs, crosswalk	EA	$80,000	0	$0	0	$0	1	$80,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type H: Connection Facilities, with redirected path to ex xwalk and bike lanes or sharrows	EA	$60,000	0	$0	0	$0	3	$180,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type I: Rail crossing WITHOUT railroad signal mods, with barriers at tracks and path, roadway xing signs and markings, path yields	EA	$40,000	0	$0	0	$0	1	$40,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type J: Standard Private Crossing, with stops for local road crossing and path yield signs or marks	EA	$10,000	4	$40,000	0	$0	1	$10,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
SUBTOTAL			**6**	**$310,000**	**0**	**$0**	**18**	**$1,110,000**	**0**	**$0**	**0**	**$0**	**1**	**$250,000**	**5**	**$670,000**	**0**	**$0**	**0**	**$0**

	SEGMENT 6	SEGMENT 6A	SEGMENT 7	SEGMENT 7A	SEGMENT 7B	SEGMENT 8	SEGMENT 9	SEGMENT 9A	SEGMENT 9B
	TOTAL	**TOTAL**	**TOTAL**	**TOTAL**	**TOTAL**	**TOTAL**	**TOTAL**	**TOTAL**	**TOTAL**
SEGMENT TOTALS	**$2,761,320**	**$7,370**	**$3,168,900**	**$8,200**	**$725,760**	**$1,194,000**	**$3,395,750**	**$1,860**	**$4,380**
RAIL TRAIL/COASTAL TRAIL TOTALS			**$3,168,900**	**$733,960**			**$3,395,750**	**$6,240**	
COMBINED TOTAL (HARD COSTS)	**$2,768,690**		**$3,902,860**			**$1,194,000**	**$3,401,990**		

UNIT COST ESTIMATES

DRAFT

TYPE	UNIT	UNIT PRICE	SEGMENT 10 Qty.	SEGMENT 10 Total	SEGMENT 11 Qty.	SEGMENT 11 Total	SEGMENT 12 Qty.	SEGMENT 12 Total	SEGMENT 13 Qty.	SEGMENT 13 Total	SEGMENT 14 Qty.	SEGMENT 14 Total	SEGMENT 15 Qty.	SEGMENT 15 Total	SEGMENT 16 Qty.	SEGMENT 16 Total	SEGMENT 16A Qty.	SEGMENT 16A Total	SEGMENT 16B Qty.	SEGMENT 16B Total
SEGMENT LENGTH			7,940 LF / 1.50 MI		16,880 LF / 3.20 MI		6,030 LF / 1.14 MI		4,510 LF / 0.85 MI		6,160 LF / 1.17 MI		7,240 LF / 1.37 MI		9,400 LF / 1.78 MI		2,100 LF / 0.40 MI		2,530 LF / 0.48 MI	
Rail Trail																				
Multi-Use Paved Path (12' paved): moderate terrain, drainage, utilities	LF	$162			12,430	$2,013,660	730	$118,260	3,510	$568,620	5,360	$868,320	6,200	$1,004,400	9,400	$1,522,800				
Multi-Use Paved Path (12' paved): difficult terrain, retaining walls, drainage, utilities	LF	$405	7,940	$3,215,700	4,450	$1,802,250	5,300	$2,146,500	1,000	$405,000	800	$324,000	1,040	$421,200						
Multi-Use Paved/Unpaved Path (12' paved, with 6' DG path): moderate terrain, drainage, utilities	LF	$180																		
SUBTOTAL			**7,940**	**$3,215,700**	**16,880**	**$3,815,910**	**6,030**	**$2,264,760**	**4,510**	**$973,620**	**6,160**	**$1,192,320**	**7,240**	**$1,425,600**	**9,400**	**$1,522,800**	**0**	**$0**	**0**	**$0**
Coastal Trail																				
Multi-Use Paved Path (12' paved): moderate terrain, drainage, utilities	LF	$162															2,100	$340,200		
Multi-Use Paved Path (12' paved): difficult terrain, retaining walls, drainage, utilities	LF	$405																		
Unpaved Trail (native soil); 6' - 8' wide, level terrain	LF	$7																		
Unpaved Trail (native soil); 10' - 12' wide on existing road	LF	$11																		
Class II Bike Lanes	LF	$20																	2,530	$50,600
Class III Bike Route, wayfinding signage	LF	$6																		
SUBTOTAL			**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**2,100**	**$340,200**	**2,530**	**$50,600**
Bridge Structures																				
Modified Existing Bridge	EA	Varies					1	$600,000												
New Pre-Engineered Bridge	EA	Varies	1	$450,000	1	$200,000	3	$3,000,000	1	$1,000,000			2	$1,450,000						
SUBTOTAL			**1**	**$450,000**	**1**	**$200,000**	**4**	**$3,600,000**	**1**	**$1,000,000**	**0**	**$0**	**2**	**$1,450,000**	**0**	**$0**	**0**	**$0**	**0**	**$0**
Trail Amenities																				
Trailhead signage	EA	$4,000	2	$8,000	2	$8,000	1	$4,000			1	$4,000								
Interpretive signage	EA	$500																		
Wayfinding signage	Allow/MILE	$2,500	1	$2,500	2	$5,000	1	$2,500							1	$2,500				
Bike rack	EA	$1,000			6	$6,000														
Bench	EA	$1,500			6	$9,000														
Shade structure with bench	EA	$15,000																		
Fencing	LF	$40	15880	$635,200	5280	$211,200	3000	$120,000	2000	$80,000	5280	$211,200	5290	$211,600	9400	$376,000				
Lighting	Allow/MILE																			
Restroom	EA	$30,000			1	$30,000	1	$30,000												
SUBTOTAL				**$645,700**		**$269,200**		**$156,500**		**$80,000**		**$215,200**		**$211,600**		**$378,500**		**$0**		**$0**
Staging Area Access																				
Trailhead, small (10 cars)	EA	$30,000							1	$30,000										
Trailhead, medium (20 cars), portable restroom	EA	$50,000																		
Trailhead, large (30 cars), restroom, drinking fountain	EA	$80,000																		
SUBTOTAL			0	$0	0	$0	0	$0	1	$30,000	0	$0	0	$0	0	$0	0	$0	0	$0
Rail Track and Street Crossings																				
TYPE A : Tie into railroad control cab, ped gates, barriers,roadway treatments	EA	$250,000	1	$250,000	3	$750,000	1	$250,000	0	$0	0	$0	0	$0	1	$250,000	0	$0	0	$0
Type B: Traffic signal modication with new crosswalk, ped equipment, loops, striping	EA	$50,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type C: HAWK including all elec and striping/signing	EA	$150,000	2	$300,000	0	$0	1	$150,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type D: Active Enhanced Midblock, either IRWL or overhead, ppb, yield marks, signs, path controls	EA	$100,000	0	$0	1	$100,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type E: Passive Enhanced Midblock, with yield marks, signs, crosswalk, path controls	EA	$25,000	2	$50,000	1	$25,000	1	$25,000	0	$0	0	$0	0	$0	1	$25,000	0	$0	0	$0
Type F: Standard Midblock with signs, crosswalk, path controls	EA	$20,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type G: Traffic Calming Measures, medians or curb extensions, warning signs, crosswalk	EA	$80,000	0	$0	0	$0	2	$160,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type H: Connection Facilities, with redirected path to ex xwalk and bike lanes or sharrows	EA	$60,000	0	$0	2	$120,000	2	$120,000	1	$60,000	1	$60,000	0	$0	1	$60,000	0	$0	0	$0
Type I: Rail crossing WITHOUT railroad signal mods, with barriers at tracks and path, roadway xing signs and markings, path yields	EA	$40,000	0	$0	0	$0	0	$0	0	$0	0	$0	1	$40,000	0	$0	0	$0	0	$0
Type J: Standard Private Crossing, with stops for local road crossing and path yield signs or marks	EA	$10,000	0	$0	3	$30,000	1	$10,000	0	$0	0	$0	4	$40,000	1	$10,000	0	$0	0	$0
SUBTOTAL			5	$600,000	10	$1,025,000	8	$715,000	1	$60,000	1	$60,000	5	$80,000	4	$345,000	0	$0	0	$0

	SEGMENT 10 TOTAL	SEGMENT 11 TOTAL	SEGMENT 12 TOTAL	SEGMENT 13 TOTAL	SEGMENT 14 TOTAL	SEGMENT 15 TOTAL	SEGMENT 16 TOTAL	SEGMENT 16A TOTAL	SEGMENT 16B TOTAL
SEGMENT TOTALS	**$4,911,400**	**$5,310,110**	**$6,736,260**	**$2,143,620**	**$1,467,520**	**$3,167,200**	**$2,246,300**	**$340,200**	**$50,600**
RAIL TRAIL/COASTAL TRAIL TOTALS							**$2,246,300**	**$390,800**	
COMBINED TOTAL (HARD COSTS)	**$4,911,400**	**$5,310,110**	**$6,736,260**	**$2,143,620**	**$1,467,520**	**$3,167,200**		**$2,637,100**	

UNIT COST ESTIMATES

DRAFT

			SEGMENT 17		SEGMENT 18		SEGMENT 18A		SEGMENT 18B		SEGMENT 19		SEGMENT 19A		SEGMENT 20	
	SEGMENT LENGTH		21,140 LF / 4.00 MI		6,350 LF / 1.20 MI		6,840 LF / 1.30 MI		7,980 LF / 1.51 MI		2,460 LF / 0.47 MI		950 LF / 0.18 MI		3,930 LF / 0.74 MI	
TYPE	UNIT	UNIT PRICE	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total	Qty.	Total
Rail Trail																
Multi-Use Paved Path (12' paved): moderate terrain, drainage, utilities	LF	$162	10,540	$1,707,480	6,350	$1,028,700									3,930	$636,660
Multi-Use Paved Path (12' paved): difficult terrain, retaining walls, drainage, utilities	LF	$405	7,100	$2,875,500												
Multi-Use Paved/Unpaved Path (12' paved, with 6' DG path): moderate terrain, drainage, utilities	LF	$180	3,500	$630,000							2,460	$442,800				
SUBTOTAL			**21,140**	**$5,212,980**	**6,350**	**$1,028,700**	**0**	**$0**	**0**	**$0**	**2,460**	**$442,800**	**0**	**$0**	**3,930**	**$636,660**
Coastal Trail																
Multi-Use Paved Path (12' paved): moderate terrain, drainage, utilities	LF	$162														
Multi-Use Paved Path (12' paved): difficult terrain, retaining walls, drainage, utilities	LF	$405														
Unpaved Trail (native soil); 6' - 8' wide, level terrain	LF	$7														
Unpaved Trail (native soil); 10' - 12' wide on existing road	LF	$11														
Class II Bike Lanes	LF	$20					6,840	$136,800	7,980	$159,600						
Class III Bike Route, wayfinding signage	LF	$6											950	$5,700		
SUBTOTAL			**0**	**$0**	**0**	**$0**	**6,840**	**$136,800**	**7,980**	**$159,600**	**0**	**$0**	**950**	**$5,700**	**0**	**$0**
Bridge Structures																
Modified Existing Bridge	EA	Varies														
New Pre-Engineered Bridge	EA	Varies	4	$1,300,000											1	$1,000,000
SUBTOTAL			**4**	**$1,300,000**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**1**	**$1,000,000**
Trail Amenities																
Trailhead signage	EA	$4,000			1	$4,000									1	$4,000
Interpretive signage	EA	$500														
Wayfinding signage	Allow/Mile	$2,500	1	$2,500											1	$2,500
Bike rack	EA	$1,000														
Bench	EA	$1,500														
Shade structure with bench	EA	$15,000														
Fencing	LF	$40	5280	$211,200	6350	$254,000					3,320	$132,800			5280	$211,200
Lighting	Allow/Mile															
Restroom	EA	$30,000			1	$30,000										
SUBTOTAL				**$213,700**		**$288,000**		**$0**		**$0**		**$132,800**		**$0**		**$217,700**
Staging Area Access																
Trailhead, small (10 cars)	EA	$30,000														
Trailhead, medium (20 cars), portable restroom	EA	$50,000														
Trailhead, large (30 cars), restroom, drinking fountain	EA	$80,000														
SUBTOTAL			0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Rail Track and Street Crossings																
TYPE A : Tie into railroad control cab, ped gates, barriers,roadway treatments	EA	$250,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type B: Traffic signal modication with new crosswalk, ped equipment, loops, striping	EA	$50,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type C: HAWK including all elec and striping/signing	EA	$150,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type D: Active Enhanced Midblock, either IRWL or overhead, ppb, yield marks, signs, path controls	EA	$100,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type E: Passive Enhanced Midblock, with yield marks, signs, crosswalk, path controls	EA	$25,000	0	$0	0	$0	0		0		0	$0	0	$0	0	$0
Type F: Standard Midblock with signs, crosswalk, path controls	EA	$20,000	0	$0	1	$20,000	0	$0	0	$0	0	$0	0	$0	0	$0
Type G: Traffic Calming Measures, medians or curb extensions, warning signs, crosswalk	EA	$80,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type H: Connection Facilities, with redirected path to ex xwalk and bike lanes or sharrows	EA	$60,000	0	$0	2	$120,000	0	$0	0	$0	1	$60,000	0	$0	0	$0
Type I: Rail crossing WITHOUT railroad signal mods, with barriers at tracks and path, roadway xing signs and markings, path yields	EA	$40,000	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Type J: Standard Private Crossing, with stops for local road crossing and path yield signs or marks	EA	$10,000	2	$20,000	2	$20,000	0	$0	0	$0	$0	$0	$0	$0	0	$0
SUBTOTAL			2	$20,000	5	$160,000	0	$0	0	$0	1	$60,000	0	$0	0	$0

	SEGMENT 17	SEGMENT 18	SEGMENT 18A	SEGMENT 18B	SEGMENT 19	SEGMENT 19A	SEGMENT 20
	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
SEGMENT TOTALS	**$6,746,680**	**$1,476,700**	**$136,800**	**$159,600**	**$635,600**	**$5,700**	**$1,854,360**
RAIL TRAIL/COASTAL TRAIL TOTALS		**$1,476,700**	**$296,400**		**$635,600**	**$5,700**	
COMBINED TOTAL (HARD COSTS)	**$6,746,680**	**$1,773,100**			**$641,300**		**$1,854,360**

APPENDIX E

Trail Crossings

TABLE E-1 - Crossing Description and Cost

Segment #	Crossing Location #	Crossing Location Description	Recommended Crossing Treatment Type	Recommended Crossing Treatment Description	Improvement Cost	Jurisdiction
4	1	Private Crossing	J	The trail is on the east side of the tracks. Provide a standard private road crossing		County
4	2	Private Driveway (RMC Pacific)	F	The trail is on the east side of the tracks. Provide a standard midblock crossing, as use is expected to exceed 20 pph at least once daily by employees.		County
4	3	State Route 1(SR1	A,D	To/from the north the trail aligns on the east side of the tracks and to/from the south it's on the west side. This creates a trail at-grade rail crossing, which will need to be integrated into the existing SR 1 crossing of the rail. The addition of the trail crossing requires modifying the rail signal, together with the addition of an active enhanced crossing for trail users to cross SR 1.		County
5.1	4	Davenport parking lot	A	The proposed trail is on the west side of the tracks. A new railroad crossing is proposed to formalize a popular pedestrian crossing between a parking lot on the east side of the tracks and Davenport Beach on the west side, and to allow east-west access to the trail. The new railroad crossing could be accomplished with installation of a new pedestrian-only rail signal.		NEW CROSSING County
5.1 (1) 5.2 (3) 5.3 (12) 6 (4)	5-24	Private crossings, including Wilder Ranch Park (7), Scaroni Rd (2) & agricultural crossings (11)	J	The trail is on the west side of the tracks. Provide standard private road crossings at all 20 locations.		County

Table prepared by by W-Trans

Notes: pph = pedestrians per hour

TABLE E-1 - Crossing Description and Cost

Segment #	Crossing Location #	Crossing Location Description	Recommended Crossing Treatment Type	Recommended Crossing Treatment Description	Improvement Cost	Jurisdiction
6	25	Shaffer Road	A,F	The trail is on the west side of the tracks. A new railroad crossing is proposed to formalize a popular pedestrian crossing between two existing dead ends of Shaffer Road on either side of the tracks. The new railroad crossing should include pedestrian rail signal improvements. The City plans new roadway crossing with bike lanes. Additional markings would be required on street crossing for bike guidance.		NEW CROSSING Santa Cruz
7	26	Natural Bridges Dr	F	The trail is on the west side of the tracks. Provide a standard midblock crossing.		Santa Cruz
7	27	Swift St	E	The trail is on the west side of the tracks. Provide a passive enhanced crossing.		Santa Cruz
7	28	Fair Ave	E	The trail is on the west side of the tracks. Provide a passive enhanced crossing.		Santa Cruz
7	29	Almar Ave	E	The trail is on the west side of the tracks. Provide a passive enhanced crossing.		Santa Cruz
7	30	Rankin St	H	The trail is on the west side of the tracks. Provide connection facilities, adding a crosswalk and AWSC at the intersection of Rankin St/ Seaside St., together with a path on the south side of Seaside St. between Rankin St and the rail crossing location 100 ft east.		Santa Cruz

Notes: AWSC = All-Way Stop Controlled

Table prepared by by W-Trans

TABLE E-1 - Crossing Description and Cost

Segment #	Crossing Location #	Crossing Location Description	Recommended Crossing Treatment Type	Recommended Crossing Treatment Description	Improvement Cost	Jurisdiction
7	31	Seaside St	F,I	The trail is on the west side to/from the north and on the east side to/from the south. Rather than the trail crossing Seaside St, it may be possible to locate the trail in a vacant triangular parcel on the SW corner of Seaside/ Younglove St. While the trail will not cross Seaside, it will cross the rail, with the crossing to be oriented perpendicular to the tracks. The existing vehicular rail crossing of Seaside St will remain, and since it is unsignalized, it's recommended that the new rail-trail crossing also be provided without signal equipment.		Santa Cruz
7	32	Younglove Ave	H	The trail is on the east side of the tracks. Provide a pedestrian connection to the intersection of Younglove Ave and Seaside St and adding a crosswalk on the southeast leg of the intersection.		Santa Cruz
7	33	Bellevue St	F	The trail is on the east side of the tracks. Provide a standard midblock crossing.		Santa Cruz
7	34	Dufour St	F	The trail is on the east side of the tracks. Provide a standard midblock crossing.		Santa Cruz
7	35	Palm St	J	The trail is on the east side of the tracks. Provide a standard private crossing (existing barricades prohibit vehicle travel across rail tracks).		Santa Cruz
7	36	Lennox St	F,H	The trail is on the east side of the tracks. Provide pedestrian connection along the north side of the street and a bicycle connection via SLM in Lennox Street, to minimize the distance pedestrians and bicyclists have to travel in the street at this acute angled crossing. Provide a standard midblock crossing at the far easterly end of the existing rail-street crossing.		Santa Cruz
7	37	Bay St	D	The trail is on the east side of the tracks. Provide an active enhanced midblock crossing.		Santa Cruz

Table prepared by by W-Trans

Notes: SLM = Bicycle Shared Lane Markings
NB = Northbound
SB = Southbound

TABLE E-1 - Crossing Description and Cost

Segment #	Crossing Location #	Crossing Location Description	Recommended Crossing Treatment Type	Recommended Crossing Treatment Description	Improvement Cost	Jurisdiction
7	38	California St	E,G	The trail is on the east side of the tracks. Provide traffic calming at the intersection of Bay St/California St (north) to reduce the curb radii and travel speeds of NB right turning vehicles. Move the trail crossing 20 feet north of the existing crossing on California Street, to increase the distance from the Bay St intersection. The path should shift to the north side of the City's water treatment plant access road so that it minimizes interference with truck movements at the intersection with California Street. Curb extensions and a passive enhanced crossing should be provided at the relocated street crossing. Barriers should be installed as necessary to discourage crossings at the existing location.		Santa Cruz
7	39-40	Neary Lagoon Park (2)	A	The trail is on the east side of the main line tracks. The 2 new railroad crossings are spur track crossings rather than mainline crossings. May need to tie into rail signal controls due to high volume of trail pedestrians/bicyclists expected at this popular Santa Cruz location.		2 NEW CROSSINGS Santa Cruz

Table prepared by by W-Trans

Notes: NB = Northbound
SB = Southbound

TABLE E-1 - Crossing Description and Cost

Segment #	Crossing Location #	Crossing Location Description	Recommended Crossing Treatment Type	Recommended Crossing Treatment Description	Improvement Cost	Jurisdiction
8	41	Pacific Ave	A	The trail is on the east side of the tracks. The city has designed a roundabout to control the intersection of Pacific Ave/Beach St, which includes pedestrian and bicycle crossing facilities of the streets but does not extend north to the railroad. There is an existing sidewalk crossing of the tracks on the west side of Pacific Avenue, while the street crossing has signalized rail equipment, the sidewalk/ pedestrian facility is not. Modify this railroad signal to include pedestrian crossing signals, allowing trail users to use the new roundabout to cross Beach Street, and travel along the boardwalk, some distance west of the tracks. Concept plans also include the recommended trail crossing features for the existing intersection conditions should the roundabout not be pursued by the City.		Santa Cruz
8	42	Main St	K	The trail is on the west side of the tracks. No additional improvements.		Santa Cruz
8	43	Westbrook St	K	The trail is on the east side of the tracks. No additional improvements.		Santa Cruz
8	44	Cliff St/Beach St	K	The trail is on the east side of the tracks. No additional improvements.		Santa Cruz
8	45-50	Boardwalk crossings (6)	K	The trail is on the east side of the tracks. No additional improvements.		Santa Cruz
8	51	Mott Ave	F	The proposed trail is on the east side of the tracks and this street crossing of Mott Ave is approximately 20 feet north of the north leg of the intersection of Mott Ave/ Murray Street. However there is a partial road closure of Mott Ave at the crossing, with SB traffic prohibited at the crossing. The NB crossing is situated such that a standard midblock crossing is recommended.		Santa Cruz

Table prepared by by W-Trans

TABLE E-1 - Crossing Description and Cost

Segment #	Crossing Location #	Crossing Location Description	Recommended Crossing Treatment Type	Recommended Crossing Treatment Description	Improvement Cost	Jurisdiction
9	52	Seabright Ave	B	The trail is on the east side of the tracks. Modify the traffic signal at the intersection of Seabright Ave/Murray Street to add pedestrian phases to north leg of the intersection for crossing Seabright Ave. There may be concern for westbound queuing in the through/right turn combined lane on Murray Street. Although not part of these concept plans, the need and feasibility in providing a westbound right turn lane should be explored.		Santa Cruz
9	53	7th Ave	A,D	To/from the north the trail is on the east side and to/from the south the trail is on the west side. This represents a rail crossing, which will need to be integrated into the existing signalized rail crossing. Trail users can use the existing sidewalks on both sides of the street to travel south of the tracks approximately 50 feet, and cross 7th Avenue on the north leg of the intersection of 7th Ave/ Harbor Beach Court. As an alternative, the crosswalk could be located north of the crossing. This street crossing includes an active enhanced crosswalk, and the rail signal should be modified to add pedestrian gates and barriers on either side of 7th Ave. One parking space would be eliminated on the west side of the street.		Capitola
9	54	El Dorado Ave/ Simkins Swim Center	A	The trail is on the west side of the tracks. A new railroad crossing is proposed, to formalize a popular pedestrian crossing between El Dorado Ave and the Simkins Swim Center. The new railroad crossing should include a new pedestrian-only rail signal.		NEW CROSSING Capitola

Table prepared by by W-Trans

TABLE E-1 - Crossing Description and Cost

Segment #	Crossing Location #	Crossing Location Description	Recommended Crossing Treatment Type	Recommended Crossing Treatment Description	Improvement Cost	Jurisdiction
10	55	17th Ave	A,C	To/from the north the trail is on the west side and to/from the south the trail is on the east side. This represents a rail crossing, which will need to be integrated into the existing signalized rail crossing. Trail users can use the existing sidewalks on both sides of the street to travel south of the tracks approximately 30 feet, and cross 17th Avenue on the north leg of the intersection of 7th Ave/Simkins Swim Center driveway. This street crossing includes an active enhanced crosswalk and improved median. The rail signal should be modified to add pedestrian gates and barriers on either side of 17th Ave.		Capitola
10	56	30th Ave	E	The trail is on the east side of the tracks. Provide a passive enhanced midblock crossing		Capitola
10	57	38th Ave	E	The trail is on the east side of the tracks. Provide a passive enhanced midblock crossing.		Capitola
10	58	41st Ave	C	The trail is on the east side of the tracks. There is sidewalk on both sides of the street between the railroad and Melton St to the north. Install a HAWK signal on either th south leg of Melton Street or just on the north side of the tracks.		Capitola
11	59	47th Ave	A,H	To/from the north the trail is on the east side and to/from the south the trail is on the west side. This represents a rail crossing, which will need to be integrated into the existing signalized rail crossing. Trail users can use the existing crosswalk on 47th Ave at the intersection of 47th Ave/Portola Dr. This leads the trail users outside the railroad crossing barrier on the east side and also to a controlled crossing of 47th Ave. The existing walkway on the west side of 47th Ave should be extended across the tracks to the crosswalk. Pedestrian gates and barriers should be added to the rail signal.		Capitola

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Segment #	Crossing Location #	Crossing Location Description	Recommended Crossing Treatment Type	Recommended Crossing Treatment Description	Improvement Cost	Jurisdiction
11	60	49th Ave/Cliff Dr	A,D	The trail is on the west side of the tracks. A new railroad crossing is proposed, to formalize a popular pedestrian crossing between 49th Ave/Propsect Ave and Cliff Drive/ Capitola Wharf. The new railroad crossing should include a new pedestrian-only rail signal and be located in proximity to the existing crosswalk on Cliff Drive.		Capitola
11	61	Monterey Ave	E	The trail is on the west side of the tracks. To avoid expensive railroad signal changes, the trail users will be directed to cross Monterey Avenue in a new midblock crosswalk 50 feet south of the tracks. Barriers at the back of sidewalk must be placed to prevent pedestrians crossing within the existing rail barriers. Existing sidewalk is available on both sides of Monterey Ave. Provide a passive enhanced midblock crosswalk.		Capitola
11	62	Grove Ln	J	The trail is on the west side of the tracks. Provide a standard private crossing treatment.		County
11	63	New Brighton Rd	J	The trail is on the west side of the tracks. Provide a standard private crossing treatment.		County
11	64	Estates Dr	J	The trail is on the west side of the tracks. Provide a standard private crossing treatment.		County

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Segment #	Crossing Location #	Crossing Location Description	Recommended Crossing Treatment Type	Recommended Crossing Treatment Description	Improvement Cost	Jurisdiction
11	65	Mar Vista Dr	A,H	To/from the north the trail is on the west side and to/from the south the trail is on the east side. The existing rail signal must be modified to add pedestrian gates and barriers on both sides of Mar Vista Dr, and the trail users must be provided guidance (barriers) and connection facilities to cross 2 streets, including a new sidewalk on the west side of the street between the tracks and Cedars Street, a new crosswalk on Cedar Street at its intersection with Mar Vista Dr, and a new crosswalk on the south leg of Mar Vista Dr at Cedar St. A sidewalk connection is also needed on the east side of Mar Vista Dr between Cedar St and the new trail entrance on the north side of the tracks.		County
12	66	State Park Dr	C, G, H	The proposed trail is on the east side of the tracks. Provide a HAWK signal and medians on State Park Dr at the south leg of its intersection with Sea Ridge Rd. This HAWK signal location should eliminate the need to modify the railroad signal on State Park Dr. Sidewalk must be added on the east side of State Park Dr between the new trail and Sea Ridge Rd, to connect to the new HAWK crossing.		County
12	67	Aptos Creek Rd	E,G	The trail is on the east side of the tracks. Provide a passive enhanced midblock crossing on Aptos Creek Rd and install a striped or raised curb extension on the SE corner of the intersection of Aptos Creek Rd/Soquel Dr., in an effort to reduce the speed of right turning vehicles. Crossing should consider planned traffic signal installation at Soquel Drive intersection.		County
12	68	Parade Street	J	The trail is on the east side of the tracks. Provide a standard private crossing, and if the private crossing is paved, add a marked crosswalk.		County

Notes: EVA = emergency vehicle access

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Segment #	Crossing Location #	Crossing Location Description	Recommended Crossing Treatment Type	Recommended Crossing Treatment Description	Improvement Cost	Jurisdiction
12	69	Trout Gulch Rd	A,H	To/from the north the trail is on the east side and to/from the south the trail is on the west side. A trail at-grade rail crossing should be added to the north side of Trout Gulch Rd, including a 10 foot long sidewalk between Aptos St and Soquel Dr, and incorporated into the rail signal controls, including pedestrian barriers and gates. Provide a marked crosswalk on Trout Gulch Rd on the west leg of its intersection with Aptos St. The trail to/from the north appears to require removal of 7 parking spaces in a shopping center. Crossing should consider planned traffic signal installation at Soquel Drive intersection.		County
13	70	Clubhouse Dr	H	The proposed trail is on the east side (it appears on RRM May update as switching from the west to the east at Hidden Beach Park to the north, which is not a study crossing). Provide connection facilities, including a curvilinear sidewalk from both trail heads that lead to a new crosswalk on Clubhouse Dr at its intersection with Sumner Ave, which is presently a stop-controlled approach. Install pedestrian barriers to guide trail users to the new intersection crosswalk.		County
14	71	Seascape Blvd	H	The trail is on the east side of the tracks. The trail must deviate towards Sumner Ave to align the trail outside the existing rail signal at Seascape Blvd. There is a landscaped area that appears sufficiently wide to accommodate the necessary sidewalks. Provide a new crosswalk on the west leg of the intersection of Seascape Blvd/Sumner Ave. The landscaped median in Seascape Blvd will need to be reconstructed to accommodate the new crosswalk.		County

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Segment #	Crossing Location #	Crossing Location Description	Recommended Crossing Treatment Type	Recommended Crossing Treatment Description	Improvement Cost	Jurisdiction
15	72	EVA (Seascape)	J	The proposed trail is on the east side of the tracks. The EVA for Seascape currently is equipped with rail signal equipment, including lights and signs but no barriers. Consistent with this approach, pedestrian should be permitted to pass the EVA without modifying the rail signal equipment. Provide a standard private crossing treatment, as the EVA is cordoned off, restricting vehicular crossing of EVA and therefore functioning like a private street.		County
15	73	Camp St. Francis/ agricultural access	J	The trail is on the east side of the tracks. Provide a standard private crossing treatment.		County
15	74	Private agricultural access	J	The trail is on the east side of the tracks. Provide a standard private crossing treatment.		County
15	75	Camino Al Mar	I, J	To/from the north the trail is on the east side of the tracks and to/from the south the trail is on the west side of the tracks. A connection across the tracks is necessary but signalization appears unnecessary. In addition, provide a standard private crossing across Camino Al Mar.		County
16	76	Private driveway	J	The trail is on the west side of the tracks. Provide a standard private crossing treatment.		County
16	77	Spring Valley Rd	A,E,H	To/from the north the proposed trail is on the west side of the tracks and to/from the south the trail is on the east side. This creates a trail at-grade rail crossing, which will need to be integrated into the existing Spring Valley Rd crossing of the rail. The proposed trail crossing requires modifying the rail signal, together with the addition of connecting sidewalks or paths to the adjacent school campus and a passive enhanced midblock crosswalk on Spring Valley Road east of the tracks. Barriers should be installed at trail/street intersections to guide trail users towards the new crosswalk.		County

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Segment #	Crossing Location #	Crossing Location Description	Recommended Crossing Treatment Type	Recommended Crossing Treatment Description	Improvement Cost	Jurisdiction
17	78	Elicott Slough Rd	J	The trail is on the east side of the tracks. Provide standard private crossing treatment.		County
17	79	Buena Vista Dr	J	The trail is on the east side of the tracks. Provide standard private crossing treatment.		County
18	80	Private crossing	J	The trail is on the east side of the tracks. Provide standard private crossing treatment.		County
18	81	Private crossing	J	The trail is on the east side of the tracks. Provide standard private crossing treatment.		County
18	82	Lee Rd	H	The trail is on the east side of the tracks. Lee Rd is stop-controlled at the rail crossing. This is an unsignalized rail-street crossing. Provide a new crosswalk on Lee Road at the trail, with no additional railroad modifications due to the existing controls.		Watsonville
18	83	Ohlone Parkway	F,H	The trail is on the east side of the tracks. This is an existing signalized rail crossing and in order to avoid the expense associated with modifying the signal for pedestrian controls, the trail should be redirected north 50 feet. Both the existing and proposed crossing locations represent a standard midblock crossing of a low-volume road that has excellent sight distance. New connection facilities are needed on both sides of the street.		Watsonville
19	84	Walker St/ Beach St	H	The trail is on the east side of the tracks. Add a new crosswalk on the east leg of the intersection of Walker St/Beach St, to provide a connection to the existing bike lanes on Walker St.		Watsonville

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