

Appendix U19

California Coastal Trail Technical Memoranda

Appendix U19 Contents

California Coastal Trail Technical Memoranda: 1-5 Feasibility
Study for the San Diego Portion of the California Coastal Trail

CALIFORNIA COASTAL TRAIL TECHNICAL MEMORANDA

1 - 5

Feasibility Study for the San Diego Portion of the California Coastal Trail Technical Memorandum No. 1: Planning

Purpose: *Technical Memorandum No. 1: Planning* provides a summary of data, planning documents, mapping and other information relevant to the California Coastal Trail currently available to date that can provide background information for the preparation of future feasibility studies.

What is the California Coastal Trail?

The California Coastal Trail (CCT) is currently made up of a series of trails stretching 1,300 miles up and down the California coastline. Designated in 1999 as California's Millennium Legacy Trail, it is defined by the Coastal Conservancy, State Parks, Coastal Commission and the non-profit organization Coastwalk 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" (*Completing the California Coastal Trail*, Coastal Conservancy).

The trails making up the CCT have been used well before the 1700s. However, it was not until several statewide initiatives were developed when efforts to provide a continuous coastal trail took off. In 1972, Proposition 20 was passed and created the California Coastal Commission to oversee the planning and permitting development of the California coastline. With the passage of the California Coastal Act of 1976, the California Coastal Commission was made permanent. The Coastal Act also required that local jurisdictions develop a Local Coastal Program (LCP). These LCPs were to be developed and implemented by local governments to carry out the Coastal Act's mandate to protect coastal resources and maximize public access to the shoreline. The LCP includes a land use plan and implementing ordinances. These statewide efforts also led to the creation of many advocacy groups. One of the most prominent advocate groups for the CCT is Coastwalk. Coastwalk, a non-profit volunteer organization, has been working to heighten awareness of the CCT and advocate the completion of the CCT. Coastwalk has been involved in developing an official CCT emblem, provide CCT signing along the trail, mapping the trails, and identifying potential opportunities for completing the trail.

The CCT Initiative

Initiatives to complete the California Coastal Trail resumed in 2001 by the Legislature pursuant to Senate Bill 908. A planning document, *Completing the California Coastal Trail*, published in 2003 by the Coastal Conservancy, was completed to serve as a guiding framework for existing and new efforts by stakeholders to connect all segments of the CCT. This includes providing public access to the coastline, developing recreational facilities (parks, hiking, biking, and equestrian facilities) along the coast, increasing public awareness and encouraging public use of the CCT, fostering cooperation between state, local, and federal agencies and stakeholders, ensuring compliance with policies of the California Coastal Act, local coastal programs and Americans with Disabilities Act (ADA), and preserving the coastal zone and wildlife habitat areas.

According to *Completing the California Coastal Trail*, the CCT is intended as a continuous public right of way extending from the north border to the south border of California within sight, sound,

or at least smell of the ocean. In fact, it is the proximity to the ocean that makes the CCT distinctive among other trails. Other key concepts of the CCT include:

- Connectivity between other trail systems, parks, cultural resources, public transit, parking areas, among many other things
- Integrity of the coastal trail, including trail continuity, separation from motorized traffic when practicable, and multi-jurisdictional cooperation
- Respect in environmentally sensitive areas and surrounding neighborhoods
- Public benefits such as additional transportation and healthy lifestyle opportunities

Among the most important planning concepts identified by the Coastal Conservancy is known as the “braided trail”. Since the CCT will necessarily run through many different land uses, and since each community is unique in character and constraints, the ultimate trail will actually be a network of several trails in most locations. Modes, such as equestrian or rustic hiking, are not always compatible with the flat, smooth surfaces needed by bicycles or those with mobility challenges. Additionally, locations of intense use (such as beaches in the summertime), can be difficult for those trail users who are simply using the route for transportation. Thus, the “braided trail” will not always be just one or two trails, but a corridor of alignments for the most popular non-motorized uses.

There have been numerous planning studies with limited scope, as well as private endeavors, to identify and eventually designate segments of the CCT corridor. As many different organizations have been participants in the CCT development, these identified alignments are not always the same. Since this corridor is segmented, many gaps also exist. Some of these missing segments are in the planning stage or under construction; others have yet to be determined. Therefore, to accomplish the goals as set forth by the Coastal Conservancy, a comprehensive planning study involving all jurisdictions along the coast of San Diego County is needed to designate current routes, identify gaps, and assemble the multiple smaller CCT efforts into one contiguous multi-jurisdictional corridor.

Who are the key stakeholders?

Key statewide stakeholders in CCT efforts include:

- Coastal Conservancy
- California Coastal Commission
- State Parks
- Wildlife Conservation Board
- Coastwalk (a non-profit organization)
- California Department of Transportation (Caltrans)

Large-scale CCT Efforts

The San Diego portion of the CCT will be made up of a series of trails running from Camp Pendleton and Oceanside to the southern border of the United States. As discussed earlier, several organizations and agencies have developed potential alignments of the CCT throughout the coastal corridor. None of these organizations claim to have the “official” alignment, although some segments have been mutually agreed upon. However, this duplicative effort has yielded

several potential alignments, all of which may not be needed or suitable. Verification of the location, type, and suitability of these trails for the CCT will need to be determined.

The CCT planning and design effort in San Diego County is comprised of a handful of county-wide and state-wide efforts, and yielded a multitude of smaller city projects and policy statements. The four primary potential CCT alignments, or series of alignments, are referred to as noted below.

Coastal Conservancy Trail

In *Completing the California Coastal Trail*, the effort to plan the CCT included one or two conceptual alignments, comprised of both existing and non-existing portions. This report included a rough cost estimate for substantial completion of the trail. Much of this alignment has been incorporated into subsequent planning documents, designations, and improvements since its publication. Thus, the Coastal Conservancy Trail alignments have been largely superseded. Refer to the “Recommendations for Improving the San Diego Portion of the CCT” section in this *Technical Memorandum No. 1: Planning* for a detailed description of this feasibility study, including segments identified for needed improvements. The original CCT map is shown in **Figure 1**.

Pacific Coast Bicycle Route

This trail is a contiguous bicycle route running from the northern border (in Washington State) to the southern border of the United States within about 5 miles of the coastline. Various bicycle advocacy groups had informally established it. Local agencies and Caltrans have assumed the role of signing and maintaining the route (*Completing the California Coastal Trail*, Coastal Conservancy). The California portion of this route can also be seen in **Figure 1**.

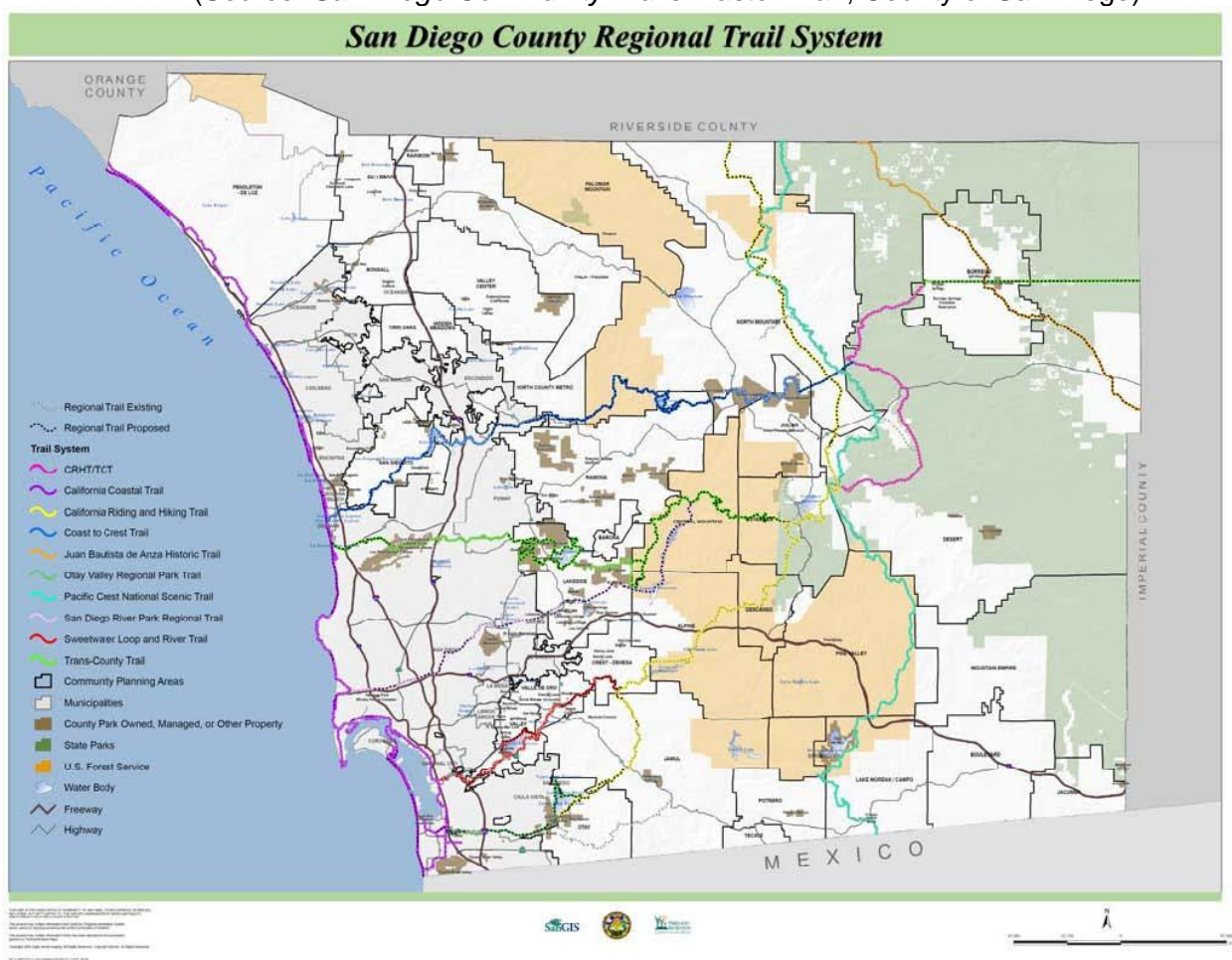
Figure 1: CCT as identified by the Coastal Conservancy
 (Source: *Completing the Coastal Trail*, Coastal Conservancy)



General Plan Trail

The County of San Diego had also identified alignments for the CCT, as referenced in the *County of San Diego General Plan, Public Facility Element*, as amended. The *San Diego Community Trails Master Plan*, a subset of the County's *General Plan*, referenced similar alignments. These alignments, referred to as the General Plan trail, originated from the Coastal Conservancy Trail. The majority of the General Plan trail between the Orange County line and the City of Del Mar was located within railroad right of way. The County is in the process of updating its General Plan to include the community trails, and is expected to adopt the final version in fall 2010 with a revised CCT alignment. **Figure 2** illustrates the currently adopted CCT General Plan trails in relation to other planned regional trails.

Figure 2: San Diego County General Plan – Regional Trails System
(Source: *San Diego Community Trails Master Plan*, County of San Diego)



Coastwalk Trails

During recent years, Coastwalk has undertaken the task of mapping one or more coastal trail routes throughout the state. Coastwalk volunteers have traversed the entire length of coastline, while reviewing each alignment's suitability toward accomplishing the basic goals

of the CCT. Pedestrian-bike paths denoted by Coastwalk volunteers may be either natural surface (unimproved) or hard surface (improved). The Coastwalk trails within San Diego County include portions of the General Plan trail and Pacific Coast Bicycle Route, as well as other alignments that have not been previously identified. Details regarding the Coastwalk trails are contained in the "Description of the CCT Segments in San Diego County" section. Coastwalk has also embarked on a CCT signing program within the last year. Two routes have already been designated in San Diego County along the Bayshore Bikeway:

- From State Route 54 clockwise, through the South Bay Marine Biological Study Area, along the Silver Strand through Coronado to the west ferry terminus
- Near Spanish Landing

More information on these smaller CCT segments such as the Bayshore Bikeway can be found in the next section.

Planned or Completed Projects

As a result of the increased public interest in completing the CCT, local jurisdictions have incorporated the various trail segments into their policy and planning framework. These actions resulted in several proposed or constructed projects, which vary from small improvements to inter-jurisdictional trail plans.

Bayshore Bikeway

The Bayshore Bikeway is a planned 25-mile long Class I Bike Path that traverses around San Diego Bay and includes a ferry connection from Coronado and the City of San Diego (see *Technical Memorandum No. 3: Engineering* for information on bike path classification). As of January 2010, the Bayshore Bikeway is approximately 50% complete. Stretched along the Bikeway are several interpretive stations and beach access points. The multi-use paved bicycle path goes through the Cities of San Diego, National City, Chula Vista, Imperial Beach and Coronado, and the County of San Diego. Approximately half of the Bayshore Bikeway is located off-street.

Planning efforts first began in 1975 with Caltrans and National City. Since 1975, many parts of the Bikeway have been completed. Other project improvements are currently underway or are planned. According to the *Bayshore Bikeway Plan* published by San Diego Association of Governments (SANDAG), the following segments have been completed (as of adoption in March 2006):

- A 9-mile bike path on the former right of way along the Silver Strand between Imperial Beach and Coronado
- A bike path running through Coronado Tidelands park connecting Glorietta Boulevard to the Coronado ferry landing
- Gordy Shields bike / pedestrian bridge over Sweetwater Channel connecting National City with the City of Chula Vista (completed in 2004)

Approximately 12 miles have been improved to a Caltrans designated Class I separated two-way travel paved bike path. Planned improvements to the remaining miles include repaving roadways and providing at-grade railroad crossing improvements. Class II and III

designated bike lanes and routes would provide convenient and scenic transportation around the San Diego Bay.

The *Bayshore Bikeway Plan* specifically identified the CCT and recommended an extension of the path between Imperial Beach, the Border Field State Park, and the City of Chula Vista, constructing the current Western Salt segment gaps between the City of Chula Vista and the Silver Strand Bike path, and closing the gaps along the Palm Avenue on-street segment in the City of Imperial Beach. In the *City of Imperial Beach Bicycle Transportation Plan*, recommendations were also made to provide additional amenities such as additional parking, restrooms, rest stop, curb cuts (at 12th Street entrance) to allow smooth rolling transition between curb and street, and bike racks. Specifically, there are no restrooms at the 7th, 8th, 12th, and 13th Street entrances to the Bayshore Bikeway. The Bayshore Bikeway is shown in **Figure 3**.

Figure 3: Bayshore Bikeway Plan
(Source: *Bayshore Bikeway Plan*, SANDAG)



City of Chula Vista / National City Sweetwater River / Otay River Loop Bikeway / Bike Path

The *City of Chula Vista Bikeway Master Plan* incorporated the planning of this loop by including a greenbelt around the City of Chula Vista utilizing the Sweetwater and Otay River valleys, connecting at the Otay Lakes area. National City also proposes to potentially align the trail from the Bayshore Bikeway to the Sweetwater Reservoir.

City of Chula Vista Bayfront Marina Trail

The Chula Vista Bayfront Redevelopment Area project proposes developing a bikeway loop to the Chula Vista Marina area from Bay Boulevard to E Street. This would complete the portion of the Bayshore Bikeway in the City of Chula Vista.

City of San Diego and Imperial Beach Western Salt Bike Path Connector

A Western Salt bike path connector was planned to be completed in spring 2007 to connect the western terminus of Main Street in the City of San Diego to the existing terminus of the Bayshore Bikeway / Silver Strand Bike path at 13th Street in Imperial Beach.

City of Imperial Beach Beachfront Area to Silver Strand Connector

The City of Imperial Beach plans to create a Class 1 0.75-mile bikeway connection from the beachfront area to the Silver Strand path. This includes a pedestrian bridge to allow users to cross State Route 75 from the Silver Strand area and a connection directly to Seacoast Drive. This project will likely require acquisition of land from the U.S. Navy.

City of Imperial Beach Ecoroute Bikeway

The *City of Imperial Beach General Plan and Coastal Plan* states, "A special Ecoroute Bikeway shall be established to encompass Imperial Beach's environmental assets including South San Diego Bay, the Tijuana River Estuary, the dunes on South Seacoast Drive, the beach, the pier and the breakwaters ... Distinctive signage shall be developed to designate the route as well as a painted line on the pavement along the route...". A portion of this Ecoroute runs along Seacoast Drive.

Seacoast Drive to the Mexican Border Bikeway Extension

The *City of Imperial Beach General Plan and Coastal Plan* recommends that SANDAG remove the Seacoast Drive to the Mexican Border Bikeway from the updated Regional Transportation Plan (RTP). Bikeway facilities at the time the general plan was written were not considered feasible to build due to the problem of crossing the estuary and environmental impact on the beach and/or estuary. The 2030 RTP does not mention the Seacoast Drive Bikeway.

Rail-Trail along North/South Railroad to Camp Pendleton and City of Carlsbad from City of Oceanside

The *City of Oceanside General Plan, Recreational Trails Element* states that the County of San Diego is proposing to build a rail trail along the north / south railroad leading to Camp Pendleton and the City of Carlsbad.

Buena Vista Lagoon Trail

Located between the Cities of Oceanside and Carlsbad, a boardwalk has been proposed connecting to the regional trail. Currently the Buena Vista Lagoon has a small interpretive area.

Description of the CCT Segments in San Diego County

Maps of individual CCT trails, provided by Coastwalk, are shown in **Figure 4** through **Figure 29**. The San Diego portion of the CCT generally includes a pedestrian-bike trail (denoted by a solid red line on the maps) running directly along the coastline. However, a second trail (the General Plan trail, not shown on the maps), which runs along historic Highway 101 and the rail corridor, is also described as it intersects potential alignments of the CCT in many areas. This trail also encompasses the majority of all bicycle paths along the coast. The Pacific Coast Bike route (denoted by a dashed green line on the maps) generally interweaves between each of the previous two trails, and in many cases, exists on its own alignment. For the purposes of this *Technical Memorandum No. 1: Planning*, these trails will all be referred to as the CCT trails. Future planning documents will designate what will be a part of the primary CCT trail running along the coastline and what will be considered secondary trails, paths, lanes or routes. A more detailed description of the CCT trails is provided below.

In Camp Pendleton, although a natural surface pedestrian trail exists along the beach, the only trail currently open to the public is a bicycle trail from San Clemente (Pacific Coast Bike route / San Clemente Coastal Bike route and hiking path) along the existing rail corridor toward the City of Oceanside (**Figure 4** through **Figure 8**). From the southern boundary of Camp Pendleton, a natural surface pedestrian-bike trail, the General Plan trail, the Pacific Coast Bike route, and a pedestrian-only trail in the City of Oceanside all run along Vandegrift Boulevard and then southward along the coast, Pacific Street, and the rail corridor, respectively, until Carlsbad City Beach (**Figure 8** through **Figure 10**). Although the beach is accessible from these trails, in many areas, it is accessible only for pedestrians. Parking and restroom facilities are available at several locations.

From Carlsbad City Beach, the trails run continuously south along the coast, on several streets within the beachside communities (primarily bicycle routes) into the City of Encinitas, along the Coast Highway 101 South to the City of Del Mar (**Figure 10** through **Figure 14**). In these cities, there are several areas of the bicycle infrastructure that do not exist. They include these areas:

- From the Magee House near the Carlsbad City Beach and Cannon Park
- Between the Cerezo Drive Overlook to the Batiquitos Lagoon Ecological Reserve (City of Carlsbad)
- Near Del Mar City Beach

From the City of Del Mar, the pedestrian-bike trail heads south through the Torrey Pines area until La Jolla. Meanwhile, the Pacific Coast Bike route diverges away from the coast until Point La Jolla (**Figure 14** through **Figure 17**). These trails continue to run along the coast through the community of Pacific Beach along Ocean Boulevard, through Mission Bay Park via Mission Bay Drive, and across the San Diego River. From the San Diego River, the pedestrian-bike trail and Pacific Bike route diverge. The pedestrian-bike trail runs along the coast around the Fort Rosecrans Naval Reservation area while the Pacific Bike route runs along Nimitz Boulevard. Both trails converge at the intersection of Nimitz Boulevard and Harbor Drive North. Also from

the City of Del Mar, the General Plan trail, instead of running along the coast, continues to run along the rail corridor to the east of Mission Bay (**Figure 14** through **Figure 20**).

Within the City of San Diego, the CCT trails (General Plan trail, pedestrian-bike trail, and Pacific Coast Bike route) run along North Harbor Drive, past the San Diego International Airport, and diverge at Broadway, with the trails turning westward across the San Diego Bay towards the City of Coronado using the San Diego-Coronado Ferry and then southward along Silver Strand, or continuing along the eastern shore of the San Diego Bay (**Figure 20** through **Figure 22**).

Both the eastern and western trail alignments follow the Bayshore Bikeway which loops San Diego Bay (**Figure 22** through **Figure 28**). Along the east side of San Diego Bay, there is also a General Plan alignment that diverges to the rail corridor through National City, towards the City of Chula Vista, where it later converges with the Bayshore Bikeway (**Figure 24** and **Figure 26**). Along the westerly side of San Diego Bay, there is also a pedestrian-only trail which runs along the coast and parallels the Bayshore Bikeway along the Silver Strand (**Figure 25** and **Figure 27**). These two trails may need to converge north of the Navy Communication Station if access to the beach adjacent to the communications station is denied. There are several access locations along the Silver Strand that allow users to cross over from the bay side to the beach and back. The westerly trail then enters Imperial Beach south of the Navy Communications Station where there is access to the beach at various locations.

At the south and west side of the City of Imperial Beach, there are designated pathways within the Tijuana Slough National Wildlife Reserve that could ultimately be connected to Border Field State Park, near the United States – Mexico border.

At the south end of the Bayshore Bikeway the General Plan trail diverges to a trail leading east and inland along the Otay River. Another trail runs south along Saturn Boulevard and 19th Street, through the Tijuana Slough National Wildlife Reserve, and finally back to the coast, where it ends at the Mexican border (**Figure 28** through **Figure 29**).

Through the entire stretch of trails between Oceanside and Mexico, several bicycle paths feed into the trail. Access to the beach is provided at many locations, but there are a few locations where access to the beach and coastline is currently restricted.

As of 2003, the San Diego County portion of the California Coastal Trail stretches up and down the coast for approximately 109 miles, passing through 11 cities. As indicated earlier on **Figure 1**, there are numerous sections of trail, some of which are noncontiguous or in need of improvement before designation as part of the CCT system. Approximately 76 miles of the coastal trail is integrated in the overall system (*San Diego Community Trails Master Plan*). Gaps do exist for approximately 20 miles in North County and 9 miles at San Diego Bay. While a continuous length has been planned out, other concerns, such as right of way access through private lands and access between trails still need to be resolved. Furthermore, the San Diego County portion of the CCT passes through many environmentally sensitive areas. Finally, the trails themselves could be enhanced to provide safer access for multiple users. Today, the trails are built to accommodate pedestrians, bicyclists (including all other cyclists), equestrians, and wheelchair and other handicapped users for a variety of recreational, educational, and environmental functions. Although the majority of the CCT sections can accommodate bicyclists, many do not accommodate all non-motorized users due to width constraints and/or surface conditions.

Figure 4 through 7:

California Coastal Trail maps – San Clemente to Camp Pendleton
(Source: <<http://www.californiacoastaltrail.info>>, Coastwalk)

Figure 4



Figure 6

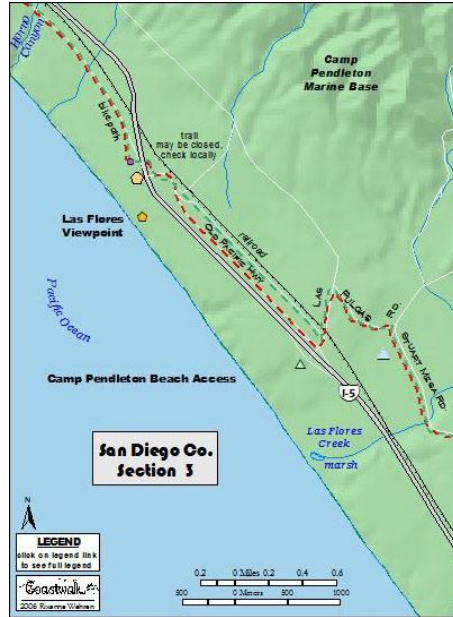


Figure 5



Figure 7

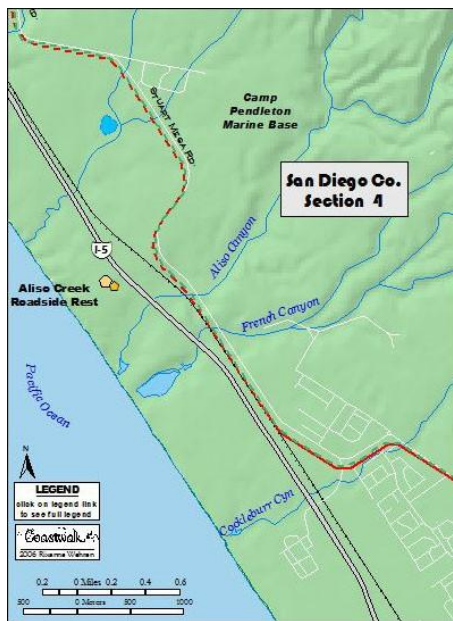


Figure 8 through 11:

California Coastal Trail maps – San Clemente to Camp Pendleton
(Source: <<http://www.californiacoastaltrail.info>>, Coastwalk)

Figure 8

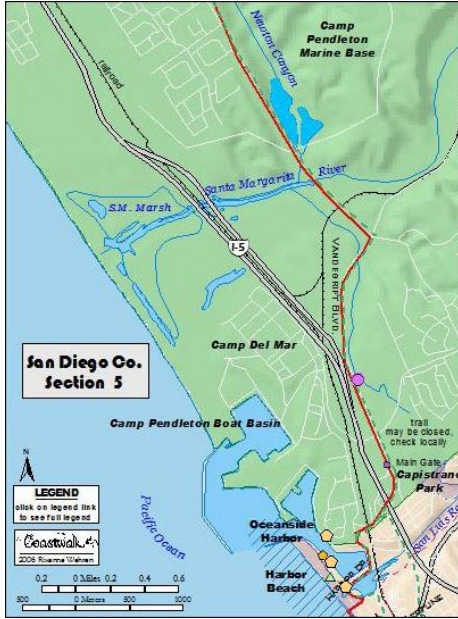


Figure 10



Figure 9

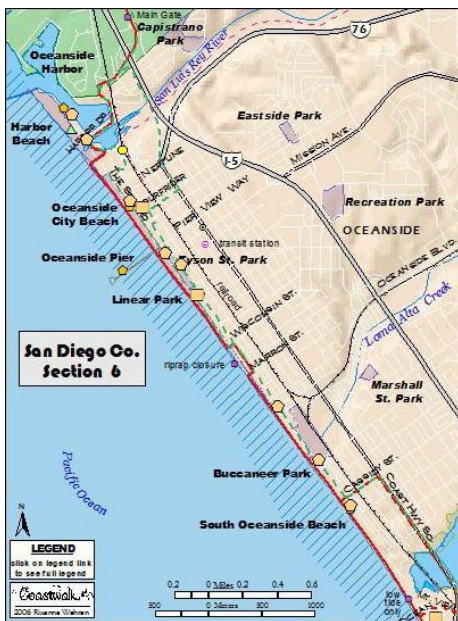


Figure 11

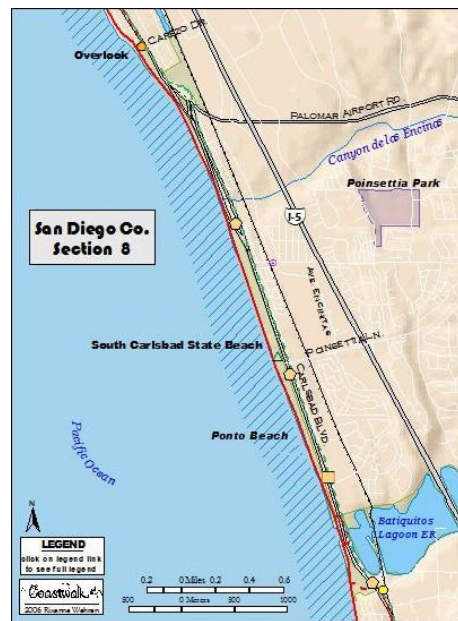


Figure 12 through 15:

California Coastal Trail maps – San Clemente to Camp Pendleton
(Source: <<http://www.californiacoastaltrail.info>>, Coastwalk)

Figure 12

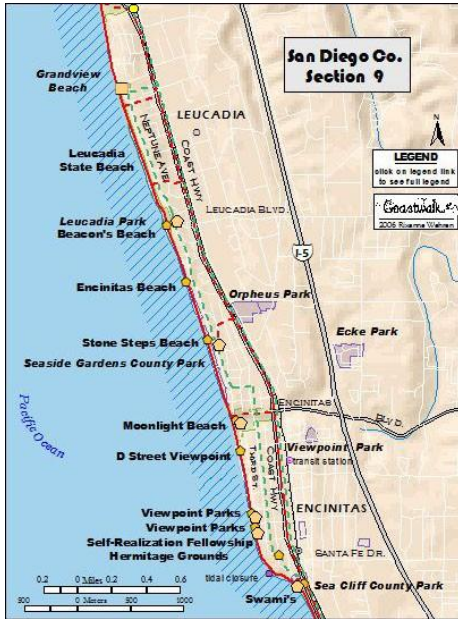


Figure 14

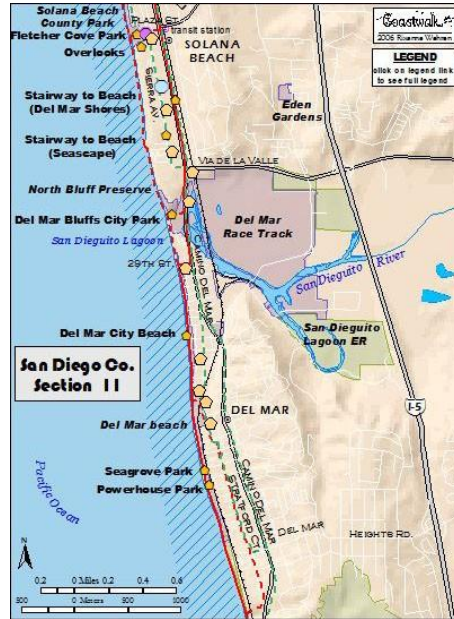


Figure 13

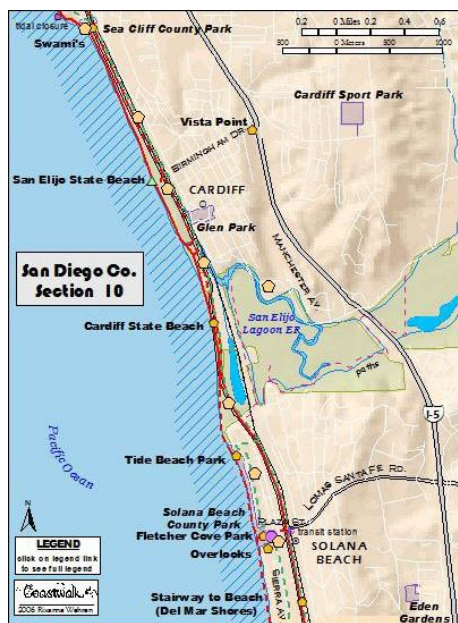


Figure 15

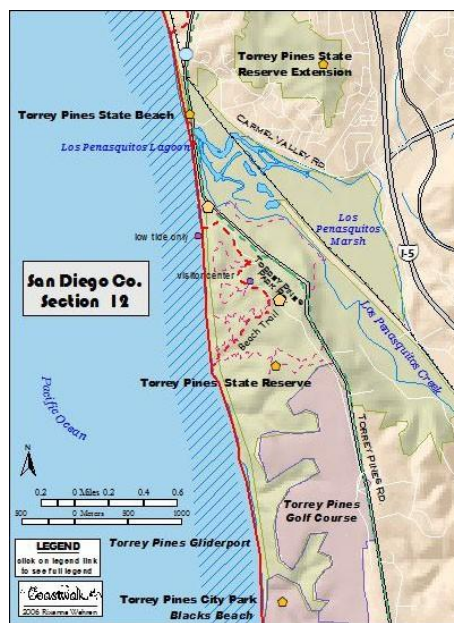


Figure 16 through 19: California Coastal Trail maps – San Clemente to Camp Pendleton
 (Source: <<http://www.californiacoastaltrail.info>>, Coastwalk)

Figure 16

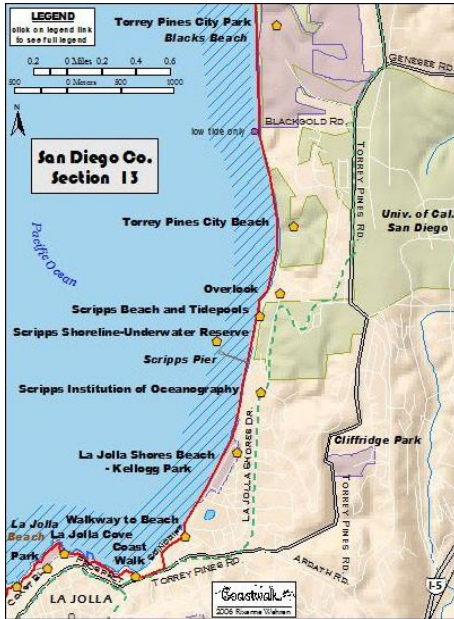


Figure 17

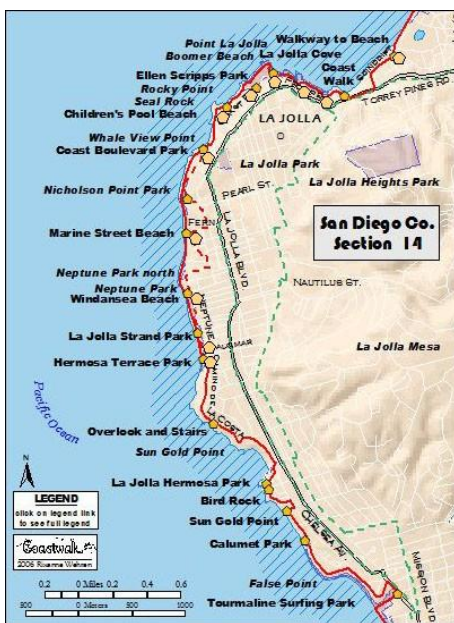


Figure 18

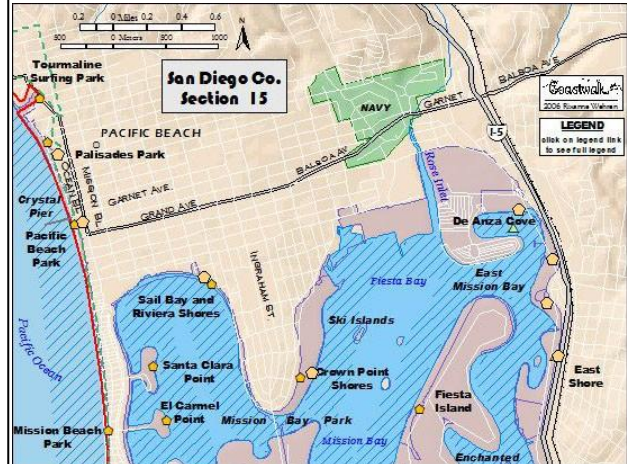


Figure 19

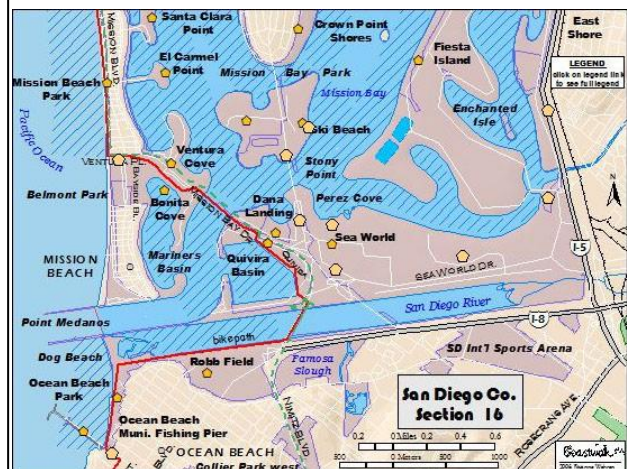


Figure 24 through 27: California Coastal Trail maps – San Clemente to Camp Pendleton
 (Source: <<http://www.californiacoastaltrail.info>>, Coastwalk)

Figure 24

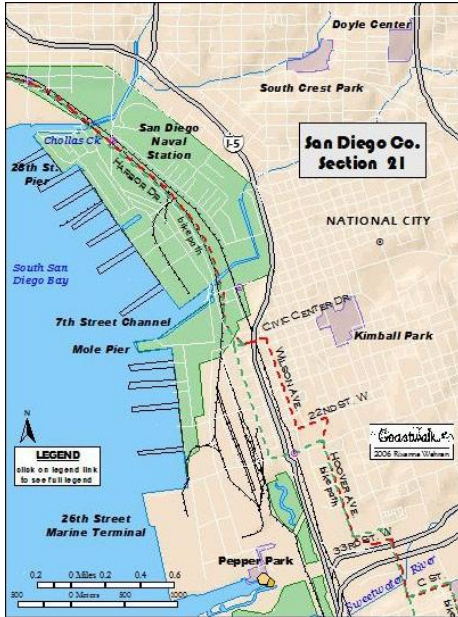


Figure 26

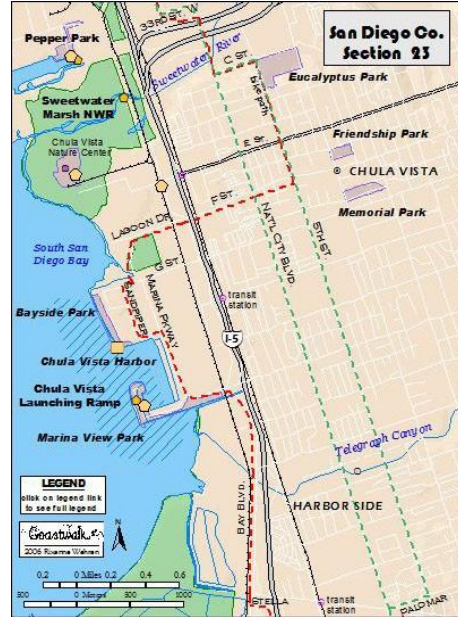


Figure 25

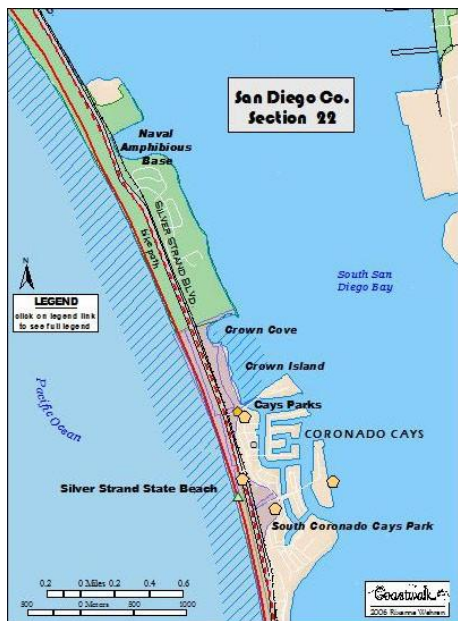


Figure 27

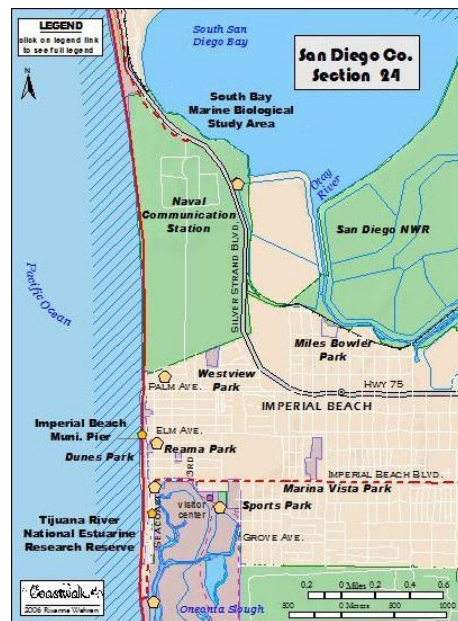


Figure 28 through 29: California Coastal Trail maps – San Clemente to Camp Pendleton
 (Source: <<http://www.californiacoastaltrail.info>>, Coastwalk)

Figure 28



Figure 29



Policy Coverage of the CCT in the San Diego Region

The San Diego region and the cities and communities within the region all have policies relating in some way to the CCT. These policies are contained in various city General plans, bikeway master plans, trails master plans, pedestrian master plans and Local Coastal programs. It is essential that the impacted cities have adopted policies which are compatible with any future CCT planning or improvements.

The County of San Diego claims jurisdiction over trails in unincorporated areas only (*County of San Diego General Plan, Public Facility Element*). The CCT traverses one unincorporated community; that is, the Pendleton/De Luz community which includes Camp Pendleton Marine Corps Base. Because of this, the County does not have true jurisdiction to determine alignments here. However, the County of San Diego may assume maintenance and operational responsibilities over portions of the CCT that travel through Camp Pendleton. According to the *San Diego Community Trails Master Plan*, the County has a cooperative interest in the mutual planning, maintenance, and operation of those trails identified in the document as a Regional Trail. Thus, the County’s trail-related policies are not covered in this *Technical Memorandum No. 1: Planning*, although the County of San Diego is an important stakeholder.

In the *2030 RTP*, SANDAG had identified a need for coastal trails. These trails were known by several names, including the Bayshore Bikeway and Coastal Rail Trail. In fact, these trails and

associated policies were discussed in detail in the *Draft San Diego Regional Bicycle Plan*, which is not currently a policy document but anticipated to be adopted in spring or summer 2010.

Policies relating to the CCT are presented in a variety of ways for each of the city and community planning documents. Often, city planning documents only address general trail requirements. On occasion, these policies directly refer to the CCT; more common are direct references to smaller trail segments (such as the Coastal Rail trail and Bayshore Bikeway). This *Technical Memorandum No. 1: Planning* summarizes and organizes the various the policies into these five categories:

- Trail connectivity / alignment
- Improve public access
- Encourage overall use of the trail
- Enhance trails for non-motorized users (aesthetics, safety)
- Trail compatibility with roadways / rail lines, infrastructure, environment, and land use

The policy coverage is also summarized in **Table 1**.

Table 1: CCT Policy Coverage by Jurisdiction

	Trail Connectivity	Public Access	Encourage Use of Trail	Enhance Trails	Ensure Trail Compatibility
SANDAG	x				
City of Oceanside	x	x	x	x	x
City of Carlsbad	x	x		x	x
City of Encinitas		x		x	x
City of Solana Beach	x [†]	x [†]	x [†]	x [†]	x [†]
City of Del Mar	x	x	x	x	x
City of San Diego	x	x	x	x	x
City of Coronado		x			x
City of National City					x
City of Chula Vista					
City of Imperial Beach	x	x	x		x

[†] denotes policies that directly refer to the CCT trail

Trail Connectivity / Alignment

Agency policies include information generally relating to trail connectivity and trail alignment and involve identifying sections and gaps in the existing CCT trail as well as identifying the need to complete the CCT system. The preference is to complete a primary trail serving all users that runs along the California coastline. However, in some cases, policies refer to secondary trails which connect with the citywide system of trails and streets. The following planning documents have policies that make reference to trail connectivity and alignment for the CCT.

- San Diego Association of Governments (SANDAG)
 - *2030 Regional Transportation Plan (RTP)*
 - (p. 6-51, 6-55) – Addresses importance of bicycle route connections; refers to Coastal Rail Trail, Bayshore Bikeway, etc.

- City of Oceanside
 - *General Plan, Recreational Trails Element*
 - (p. 6, 8, 12) – Safe, interconnected network of bicycle, equestrian, and pedestrian facilities
- City of Carlsbad
 - *General Plan, Circulation Element*
 - (p. 9) – Provide bikeways when appropriate on lands within and adjacent to scenic corridors; Provide a means of coordinating with other transportation and recreational opportunities
 - *General Plan, Open Space and Conservation Element*
 - (p. 18) – Routing trails within open space corridors separated from roadways
- City of Solana Beach
 - *Local Coastal Program Land Use Plan*
 - (p. 40) – The Coastal Rail Trail should be identified and defined as a continuous trail system
- City of Del Mar
 - *Local Coastal Program*
 - (p. 77) – Cooperate with local, State and Federal agencies in developing a system of pedestrian trails and bicycle paths that would link together coastal recreation areas such as the beaches, Crest Canyon, San Dieguito Lagoon, and Los Penasquitos Lagoon
- City of San Diego
 - *Bicycle Master Plan*
 - (p. 8) – Develop a bikeway network that provides connections to bikeways in other cities
 - *General Plan, Recreational Element*
 - (p. RE-26) – Provide safe and convenient linkages to, and within, park and recreational facilities and open space areas
 - *General Plan, Mobility Element*
 - (p. ME-6) – A complete, functional, and interconnected pedestrian network, that is accessible to pedestrians of all abilities
 - (p. ME-38) – Improve connectivity of the multi-use trail network, for use by bicyclists and others as appropriate
- City of Imperial Beach
 - *General Plan and Coastal Plan*
 - (p. L-11) – Create a recreational corridor along the Imperial Beach Bayfront incorporating bicycle and pedestrian paths

Improve Public Access

Policies relating to improving public access to CCT trails involve providing public access to the CCT system (via roads, sidewalks, staircases, easements, etc.) as an interface between, and separation of, the motorized (vehicular) and non-motorized modes. The following planning documents have policies referring to public access improvement for non-motorized users.

- City of Oceanside
 - *General Plan, Appendix B: Local Coastal Program Land Use Plan*
 - (p. 2) – Access to and along the coast shall be provided and maintained
 - (p. 13) – Protect pedestrian access to the beach / Strand by maintaining easements and causing the construction of stairways and “walk-throughs” where

appropriate and assure safety through adequate street lighting; Provide access for handicapped, elderly, and visually and hearing impaired

- City of Carlsbad
 - *General Plan, Circulation Element*
 - (p. 7, 9) – Plan and coordinate park-and-ride facilities
 - *General Plan, Parks and Recreation Element*
 - (p. 9) – Access to open space
- City of Encinitas
 - *Bikeway Master Plan Update, Background*
 - (p. 8) – Provide for coastal/shoreline recreation areas, with effective access
- City of Solana Beach
 - *Local Coastal Program Land Use Plan*
 - (p. 20) – Maximize public access to, and along, the coast and maximize public recreational opportunities in the coastal zone
 - (p. 29) – Public access-ways and trails to the shoreline and public parklands should be a permitted use in all land use and zoning designations
- City of Del Mar
 - *Local Coastal Program*
 - (p.28, 94) – Maximize public access opportunities along the shoreline
 - (p. 76) – Unless otherwise specifically stated, designated access paths are intended for pedestrians only
 - (p. 77) – The City shall promote the installation of bicycle racks at intermittent locations along designated bicycle routes including at various locations along the beach and lagoon areas
 - (p. 92) – Wherever practical, parks should be linked together by a system of trails and/or open space
- City of San Diego
 - *General Plan, Recreational Element*
 - (p. RE-25) – Parks and recreational facilities that are sited to maximize access by all modes of travel
 - (p. RE-26) – Improve public access through development of, and improvements to, multi-use trails within urban canyons and other open space areas
 - (p. RE-27) – Provide public access to open space for recreational purposes
 - (p. RE-33) – Enhance public access to public open space by clearly identifying trailheads and trail alignments which are consistent with MSCP preservation goals
- City of Coronado
 - *Local Coastal Program Land Use Plan*
 - (p. 13) – Provide shoreline access
 - *General Plan, Recreation Element*
 - (p. II-C2) – Easy accessibility provided from residential areas to parks and recreational facilities
- City of Imperial Beach
 - *General Plan and Coastal Plan*
 - (p. CO-9) – The City of Imperial Beach must rely on the attraction of tourists for economic development; Public access to the beaches needs to be ensured

Encourage Overall Use of the CCT Trail

Policies relating to encouraging the overall use of the CCT trail involve awareness and education of the CCT. The following planning documents have policies that make reference to encouraging the overall use of the CCT trail.

- City of Oceanside
 - *General Plan, Recreational Trails Element (2002)*
 - (p. 13) – Encourage walking through organized citywide programs sponsored by a variety of public and private groups
- City of Solana Beach
 - *Local Coastal Program Land Use Plan (2009)*
 - (p. 40) – Provide an educational experience where feasible through interpretive facilities
- City of Del Mar
 - *Local Coastal Program*
 - (p. 77) – The City shall encourage the use of bicycles for transportation to coastal recreation areas
 - (p. 43) – Efforts to develop and publish a regional access guide to Solana Beach area beaches and trails should be encouraged and supported
- City of San Diego
 - *General Plan, Recreational Element*
 - (p. RE-24) – Educate the public on the variety, importance, and recreational uses of the City’s natural and cultural resources that are located in the City parks and open space lands
- City of Imperial Beach
 - *General Plan and Coastal Plan*
 - (p. C-18) – Information stations (“What’s Going On”) should be built along the Ecoroute Bikeway to showcase the ecosystems and other environmental assets along the coast

Enhance Trails for Non-Motorized Users

Policies relating to enhancing trails for non-motorized users (pedestrians, cyclists, disabled users, equestrians, etc.) involve functional improvements (e.g., adding natural or non-natural paved sections to accommodate bicyclists), safety improvements (e.g., adding ramps near sidewalks or handrails for staircases, railroad crossings), and aesthetic improvements (e.g., adding local art, signing) for all non-motorized users. The following documents have policies that make reference to enhancing the CCT trails for non-motorized users.

- City of Oceanside
 - *General Plan, Recreational Trails Element*
 - (p. 5, 8) – Encourage safe multiple use trails within the City that provide a variety of experiences
 - (p. 21) – Encourage construction of a north / south Class I bike trail, Maintain existing trails and provide additional signage and striping
- City of Carlsbad
 - *General Plan, Circulation Element*
 - (p. 7) – Link sidewalks and handicap access to trail system
- City of Encinitas
 - *Bikeway Master Plan Update, Background*
 - (p. 2-9) – Provide trail systems which will encourage and provide for the on-site use of alternate modes of transportation (e.g., bicycles, pedestrian, equestrian)
 - (p. 2-19) – Where possible, establish a separate system of hiking trails, bicycle paths and equestrian trails from which motorized vehicles shall be banned
- City of Solana Beach
 - *Local Coastal Program Land Use Plan*

- (p. 30) – Provide a comprehensive signage program to identify public parks, trails and access ways
- (p. 39) – Safe and accessible bikeways and support facilities may be provided, where feasible, along the Coastal Rail Trail in the City
- (p. 40) – To provide increased opportunities for disabled individuals to access the shoreline where practical
- (p. 178) – To design street, sidewalk, bicycle path, and recreational trail networks, including the Coastal Rail Trail, to encourage walking, bicycling, and transit ridership
- City of Del Mar
 - *Local Coastal Program*
 - (p. 75) – Trailhead areas shall include appropriate support facilities such as trash receptacles and bicycle racks
 - (p. 76) – Vertical access improvements shall include the placement of appropriate facilities such as stairways and/or ramps to assure ease of access opportunities
 - (p. 77) – As funds permit, the City should acquire permanent rights-of-way and/or easements for pedestrian access from the bluffs to the beach as deemed appropriate to protect fragile resources and preserve the privacy of neighbors
- City of San Diego
 - *General Plan, Recreational Element*
 - (p. RE-26) – Provide barrier free trails and outdoor experiences and opportunities for persons with disabilities where feasible

Trail Compatibility with Roadways/Rail Lines, Infrastructure, Environment and Land Use

Policies relating to trail compatibility involve compatibility of the CCT trail and its use to existing and future roadways or rail lines, infrastructure (e.g., utilities, facilities / buildings), environment (e.g., wildlife, coastal areas), and land use (e.g., appropriate location of coastal trail within existing land use and zoning areas). The following documents have policies that make reference to promoting trail compatibility with existing or future roadways, rail lines, various infrastructures, the environment, and land use.

- City of Oceanside
 - *General Plan, Appendix B: Local Coastal Program Land Use Plan*
 - (p. 2) – Development plans are required to address vertical access to the coast
 - (p. 3) – The City shall continue its efforts to provide and maintain an adequate buffer zone between Buena Vista Lagoon and development along its shore so as to provide for public access and protection of the lagoon from adverse environmental impacts
- City of Carlsbad
 - *General Plan, Open Space and Conservation Element*
 - (p. 18) – Avoid environmental impacts
 - *General Plan, Circulation Element*
 - (p. 9) – Revise trail system to reflect existing roadway conditions and land use changes
- City of Encinitas
 - *Recreational Trails Master Plan*
 - (p. 5) – Will minimize impacts to adjacent landowners from trespass, loss of privacy, damage and property loss associated with the trail, Will locate trails with environmental sensitivity to minimize the impact to the environment

- City of Solana Beach
 - *Local Coastal Program Land Use Plan*
 - (p. 20) – Maximize public access to, and along, the coast and maximize public recreational opportunities in the coastal zone consistent with sound resource conservation principles and constitutionally protected rights of private property owners
 - (p. 21) – Development should not interfere with the public's right of access to the sea where acquired through historic use or legislative authorization
 - (p. 30) – Minimize adverse impacts to environmentally sensitive habitat areas and other sensitive environmental and visual resources
- City of Del Mar
 - *Local Coastal Program*
 - (p. 30) – Ensure that future development minimizes the disturbance of existing or natural terrain and vegetation
 - (p. 74) – Provide continuous public trail easements and the requirement for provision of access improvements within them shall be attached as conditions of development within appropriately designated areas
 - (p. 76) – Depending on individual site considerations, vertical access-ways, when located on private property adjacent to residential uses, may be restricted to use during daylight hours only
 - (p. 105) – Paths and trails which provide public access opportunities, shall be encouraged in hillshade areas, when designed in such a fashion so as to minimize disturbance of areas of steep slopes and natural vegetation
- City of San Diego
 - *General Plan, Recreational Element*
 - (p. RE-24) – Protect, manage, and enhance population- and resource-based parks and open space
 - (p. RE-31) – Design and maintain open space lands to preserve or enhance topographic and other natural site characteristics
 - (p. RE-32) – Balance passive recreation needs of trail use with environmental preservation
- City of Coronado
 - *Local Coastal Program Land Use Plan*
 - (p. 13) – Preserve and protect environmentally sensitive areas along the shoreline
- City of National City
 - *Local Coastal Program Land Use Plan*
 - (p. iv) – The National City bayfront shall be designated for tourist commercial and recreational use
 - (p. 25) – Development shall take into account the proximity to recreational areas and trails
- City of Imperial Beach
 - *General Plan and Coastal Plan*
 - (p. P-19) – Coordination efforts with local, State and Federal agencies should be developed to provide access to the beach and ensure environmental integrity is maintained and enhanced
 - *Bicycle Transportation Plan*
 - (p. ES-8) – Whenever possible, the bikeway system will utilize environmental sensitive routing to minimize environmental impacts

Recommendations for Improving the San Diego Portion of the CCT

As part of the SB 908 Report, *Completing the California Coastal Trail*, a feasibility study was conducted of the entire length of the CCT and included within the SB 908 Report. As of 2003, when the report was published, capital improvements were needed only on 38 of the 109 miles of trail within San Diego County. These improvements included 1 mile of highway corridor improvements and 37 miles of acquisition or construction on private lands. The total cost estimated in 2003 dollars to complete the trail totals approximately \$32 million. The majority of this cost would go towards acquiring right of way and constructing hard asphalt trail surfaces. Overall, several recommendations were made for the San Diego County portion of the CCT:

- Encourage the U.S. Marine Corps to reopen the Camp Pendleton coastal bicycle trail when consistent with military security requirements, and to consider opening this trail to pedestrian use (The U.S. Marine Corps has subsequently opened the trail for bicycle use)
- Support local agency efforts to develop a safe pedestrian and bicycle trail along railroad right of way west of State Highway 1 between the cities of Carlsbad and Del Mar
- Design a recreational access trail along the San Diego River to encourage non-motorized access to the coast from inland cities
- Complete improvement of the Bayshore Bikeway around South San Diego Bay;
- Design and construct a trail linking Border Field State Park with San Ysidro community and the City of Imperial Beach, in conjunction with planning for habitat restoration within the Tijuana River Estuary

In the various regional and local planning documents, several additional projects were recommended, in progress, or completed. They are summarized below and in **Table 2**.

Table 2: Identified CCT Needs by Jurisdiction

	Trail Connectivity	Public Access	Encourage Use of Trail	Enhance Trails	Ensure Trail Compatibility
SANDAG					x
City of Oceanside	x	x		x	
City of Carlsbad			x	x	
City of Encinitas	x				
City of Solana Beach					
City of Del Mar					
City of San Diego	x	x			
City of Coronado		x			
City of National City					
City of Chula Vista	x				
City of Imperial Beach			x	x	x

† denotes identified needs that directly refer to the CCT trail

Trail Connectivity / Alignment

- City of Oceanside
 - *General Plan, Recreational Trails Element*
 - (p. 5, 8) – The trail transition to Camp Pendleton is currently extremely dangerous

- (p. 22) – Provide pedestrian trail connection from the Strand south to Buena Vista Lagoon
- City of Encinitas
 - *Bikeway Master Plan Update, Executive Summary*
 - (p. 8) – Completion of Coastal Rail trail planned for between Cities of Carlsbad and Solana Beach – paved, multi-use, regional route connecting the coastal cities of San Diego County
- City of San Diego
 - *Mission Bay Park Master Plan Update*
 - (p. 23) – Desires to complete a bicycle / pedestrian path to circle Mission Bay Park completely
- City of Chula Vista
 - *Bikeway Master Plan*
 - (p. 2-18) – References the San Diego Unified Port District, Port Master Plan, the Chula Vista Bayfront Precise Plan, to focus providing bikeway connections from the bayfront to other parts of the City and for maintaining a close planning relationship between the Port District and the City of Chula Vista

Improve Public Access for Non-Motorized Users

- City of Oceanside
 - *General Plan, Appendix B: Local Coastal Program Land Use Plan*
 - (p. 2) – Provide pedestrian access to the coast at various locations
 - (p. 3) – Provide a pedestrian overpass from Oceanside Transit Center over the railroad tracks to facilitate access for beach users
- City of San Diego
 - *Mission Bay Park Master Plan Update*
 - (p. 127) – Provide continuous public access
- City of Coronado
 - *Local Coastal Program Land Use Plan*
 - (p. 23, 24) – Construct a bulkhead / stairway for preservation and enhancement of the bay access path between E and F Avenues; Preserve a bicycle path on the Glorietta Boulevard boundary and walkway on the Glorietta Bay side; Construct a pedestrian and bicycle path around and through its Coronado property; Support the Bayroute [Bayshore] Bikeway; Develop tidelands to encourage and facilitate shoreline access; Provide adequate public parking spaces in coastal recreational areas

Encourage Overall Use of the CCT Trail

- City of Carlsbad
 - *General Plan, Circulation Element*
 - (p. 9) – Encourage passive and active use of the railroad right-of-way as trail linkage and bicycle pathway
- City of Imperial Beach
 - *Bicycle Transportation Plan*
 - (p. 7-16) – Signing to highlight the City of Imperial Beach's attractions and the scenic loop route are recommended

Enhance Trails for Non-Motorized Users

- City of Oceanside
 - *General Plan, Recreation and Trails Element*
 - (p. 5) – Design trails that are aesthetically pleasing; Build an interconnected trail system from the fragmented network of pedestrian trails; Improve the dangerous transition to Camp Pendleton; Build additional bicycle racks, rest areas with showers and drinking fountains
- City of Carlsbad
 - *General Plan, Circulation Element*
 - (p. 9) – Design public trails to enhance multiple use and equestrian use; Improve bicycle access to beach areas; Provide for handicapped access to and along public sidewalks and along as much of the trail system as feasible
- City of Imperial Beach
 - *Bicycle Transportation Plan*
 - Design bikeways with shared lane markings and provide signing along trails
 - Bayshore Bikeway – Additional parking, restrooms, rest stop, curb cuts to allow smooth rolling transition between curb and street, and bike racks are recommended. Specifically, there are no restrooms at the 7th, 8th, 12th, and 13th Street entrances to the Bayshore Bikeway. Noted in the Bicycle Transportation Plan is a lack of information kiosks and signing, particularly at the 7th and 14th Street entrances, and the future 10th Street entrance.

Trail Compatibility with Roadways/Rail Lines, Infrastructure, Environment and Land Use

- San Diego Association of Governments (SANDAG)
 - *2030 Regional Transportation Plan (RTP)*
 - Identified a project with the City of Encinitas (*Encinitas Pedestrian Crossing Study*) for 2007-2008 for the development and analysis of pedestrian crossings across the Coastal Rail corridor
- City of Imperial Beach
 - *General Plan and Coastal Plan*
 - (p. CO-3) – Suggests the San Diego-Eastern Arizona Railroad right of way is a great potential of becoming a recreational corridor including bicycle and pedestrian routes

Referenced Planning Documents

The various local and regional planning documents referenced or cited in this document include (with dates of original adoption and most recent amendment):

- San Diego Association of Governments (SANDAG)
 - *2030 Regional Transportation Plan (RTP)* (November 30, 2007)
 - *Bayshore Bikeway Plan* (March 17, 2006)
 - *Draft San Diego Regional Bicycle Plan* (adoption expected spring or summer 2010)
- County of San Diego
 - *General Plan, Public Facility Element* (March 13, 1991; amended January 12, 2005)
 - *Community Trails Master Plan* (January 12, 2005; updated June 24, 2009)
- City of Oceanside
 - *General Plan, Recreational Trails Element* (January 24, 1996)

- *General Plan, Appendix B: Local Coastal Program Land Use Plan* (June 11, 1980; amended April 24, 1995)
- City of Carlsbad
 - *General Plan, Circulation Element* (amended July 27, 2004)
 - *General Plan, Parks and Recreation Element* (July 2003)
 - *General Plan, Open Space and Conservation Element* (amended November 7, 2006)
- City of Encinitas
 - *Bikeway Master Plan Update* (January 2006)
 - *Recreational Trails Master Plan* (April 6, 2002; became effective June 12, 2003)
- City of Solana Beach
 - *Local Coastal Program Land Use Plan* (September 2009)
- City of Del Mar
 - *Local Coastal Program* (March 18, 1993)
- City of San Diego
 - *Bicycle Master Plan* (May 2002)
 - *Pedestrian Master Plan* (December 2006)
 - *General Plan, Recreational Element* (March 2008)
 - *General Plan, Mobility Element* (March 2008)
 - *Sunset Cliffs Natural Park Master Plan* (July 2005)
 - *Mission Bay Park Master Plan Update* (August 2, 1994; amended July 9, 2002)
- City of Coronado
 - *Local Coastal Program Land Use Plan* (December 3, 1980; revised August 2004)
 - *General Plan, Recreation Element* (February 5, 1991)
- City of National City
 - *Local Coastal Program Land Use Plan* (May 10, 1988; amended May 6, 1997)
- City of Chula Vista
 - *Bikeway Master Plan* (January 19, 2005)
- City of Imperial Beach
 - *Bicycle Transportation Plan* (June 2008)
 - *General Plan and Coastal Plan* (October 19, 1994)

CCT Stakeholders in San Diego County

Potential CCT stakeholders may include, but are not limited to:

- San Diego Association of Governments (SANDAG)
- County of San Diego
- California Department of Transportation (Caltrans)
- Metropolitan Transit System (MTS)
- San Diego Unified Port District
- San Diego County Parks and Recreation
- City of Oceanside
- City of Carlsbad
- City of Encinitas
- City of Solana Beach
- City of Del Mar
- City of San Diego
- City of Coronado
- City of National City

- City of Chula Vista
- City of Imperial Beach
- U.S. Bureau of Land Management – California
- U.S. Fish and Wildlife Service (USFWS)
- U.S. Army Corps of Engineers (ACOE)
- U.S. Environmental Protection Agency (EPA)
- U.S. Navy – Commander Navy Region Southwest (CNRSW)
- U.S. Coast Guard
- U.S. Marine Corps Base – Camp Pendleton
- California State Parks
- California Coastal Commission
- California Coastal Conservancy
- California Department of Fish and Game
- State Lands Commission
- County of San Diego Health Services Department
- USFWS Tijuana Slough National Wildlife Refuge
- San Dieguito River Park Joint Powers Authority
- Bayshore Bikeway Working Group
- San Diego County Bicycle Coalition
- Centre City Development Corporation (CCDC)
- San Diego Gas & Electric Company (SDG&E)
- San Diego Electric Railway Association (SDERA)
- San Diego County Bicycle Coalition (SDCBC)
- Save our Heritage Organisation (SOHO)

Feasibility Study for the San Diego portion of the California Coastal Trail Technical Memorandum No. 2: Mapping

Purpose: *Technical Memorandum No. 2: Mapping* highlights mapping information related to this project that is found either in the public domain or by submittal from project stakeholders.

Types of data useful for the feasibility study process

Data that is used in feasibility studies is often gathered as part of a GIS (Geographic Information System) database. This makes for efficient, yet detailed use of available project resources. Utilization of GIS data is strongly encouraged. Useful GIS layers that should be investigated include (but are not limited to):

- Jurisdictions (cities, unincorporated areas, community designations)
- State and Federal (boundaries, federally owned land, state and national parks)
- Zoning, Land Use, and Master Plans
- Base maps (roadways, freeways, arterials, railroads, elevation maps)
- Public facilities (water fountains, restrooms, government buildings)
- Emergency services (hospitals, police stations)
- Restricted and environmentally sensitive areas
- Public works and parks (traffic signals, existing designated bikeways, construction)
- Surveying and land ownership (survey monuments, parcel maps)
- Public transportation (bus/rail stops, shelters, bus routes, rail lines)
- Hydrography (shoreline, rivers, channels, lakes, reservoirs, flood zones)
- Sidewalks and bike trails

Other useful data, such as crashes involving vehicles, bicycles, or pedestrians, are available from the California Highway Patrol. These data are not typically coded into GIS form but may be useful if entered into GIS format for analysis. Many of these GIS layers are available in print form as well. For example, paper or digital versions of the assessor's parcel maps are available from the Assessor/Recorder/County Clerk's office for a nominal fee.

Public and private utility providers also retain mapping data of major and minor underground and aerial utilities. Of most concern for a feasibility project are the locations of large or high-risk utilities such as (but not limited to):

- High pressure gas
- Natural gas and oil pipelines
- Electrical transmission lines (aerial, poles, and underground)
- Fiber optic/communications lines as part of national infrastructure, security, flight control, or train control
- Force sanitary sewer mains
- Large (e.g., greater than 48" diameter) potable water mains
- Large (e.g., greater than 60" diameter) gravity sanitary sewer mains

Some public sources of aerial photography may also be available, but this data can vary by year taken, resolution, and projection (ortho-rectification). This photography is usually best as a supplement to recent aerial photography that may be provided by state or local jurisdictions (or required by a scope of services).

Public sources for mapping data

SanGIS

<http://www.sangis.org/>

San Diego Association of Governments (SANDAG)

<http://www.sandag.org/index.asp?subclassid=100&fuseaction=home.subclasshome>

The National Map

<http://nationalmap.gov/>

State of California

<http://www.atlas.ca.gov/download.html>

Regional utility companies

In addition to private utilities, many of the incorporated cities along the corridor have water and/or sewer departments. There are potentially numerous utility agencies and companies. It would be beneficial to check with local stakeholders regarding any special utility that may run through their jurisdiction. The following is a partial list of major utility companies in the project area:

San Diego Gas & Electric Company (Sempra)

www.sdge.com/

City of San Diego Water Department

www.sandiego.gov/water/

San Diego County Water Authority

www.sdcwa.org

Project stakeholders with access to mapping data

Several project stakeholders may also collect and maintain useful or updated mapping data that have not been published. Departments such as Public Works, Engineering, Planning, or Community Development may regularly collect and update GIS data intended for internal use.

California Department of Transportation (Caltrans)

<http://www.dot.ca.gov/hq/tsip/gis/datalibrary/gisdatalibrary.html>

County of San Diego

<http://sdpublic.sdcounty.ca.gov/>

Unified Port of San Diego

<http://www.portofsandiego.org/>

Metropolitan Transit System (MTS)

<http://www.sdmts.com/>

North County Transit District (NCTD)

<http://www.gonctd.com/>

City of Oceanside

<http://www.ci.oceanside.ca.us/>

City of Carlsbad

<http://www.carlsbadca.gov/Pages/default.aspx>

City of Encinitas

<http://www.ci.encinitas.ca.us/>

City of Solana Beach

<http://www.ci.solana-beach.ca.us/csite/cms/home.htm>

City of Del Mar

<http://www.delmar.ca.us/default.aspx>

City of San Diego

<http://www.sandiego.gov/>

City of Coronado

<http://www.coronado.ca.us/>

City of National City

<http://www.ci.national-city.ca.us/>

City of Chula Vista

<http://www.chulavistaca.gov/>

City of Imperial Beach

<http://www.cityofib.com/>

Feasibility Study for the San Diego portion of the California Coastal Trail Technical Memorandum No. 3: Engineering

Purpose: *Technical Memorandum No. 3: Engineering* provides a summary of engineering-related information relevant to the design of facilities associated with the California Coastal Trail.

Facility Types

The California Coastal Trail (CCT) is unique in design and purpose. The goal of the CCT is to accommodate a diverse set of non-motorized users. Non-motorized methods of travel include pedestrian, bicycle, and equestrian, to name a few. These modes may not necessarily be mutually compatible, and so more than one facility type may be necessary. Using more than one facility in a location to accommodate multiple users is known as the “braided trail” concept. The CCT routes must consider the context of the community through which they travel. For instance, an equestrian-compatible trail may not be appropriate through a dense suburban area or for local design standards. The most popular non-motorized modes of travel on the CCT will be pedestrian and bicycle.

Several facility types exist for the CCT. Some of these facilities are already in use along the corridor, as mentioned in *Technical Memorandum No. 1: Planning*. Other facilities may need to be constructed throughout the CCT corridor, including off-site improvements (such as staging areas or environmental mitigation). These designs are required to comply with the jurisdiction through which the CCT system cross (see the “Design Standards” section below for more information).

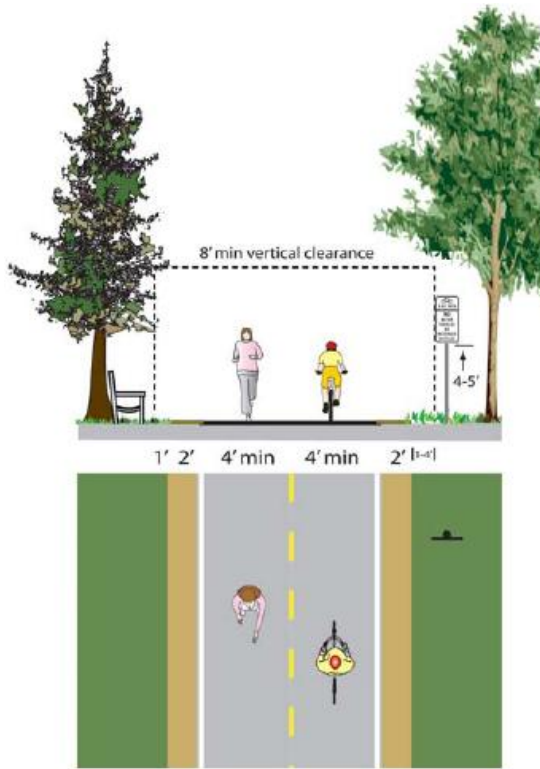
When it is expected that there will be heavy usage by different user groups (walkers, runners, bicyclists, etc.) a dual path is often preferable. “Wheel” users (bicyclist, roller bladers, etc.) use one path and “heel” users (walkers, runners) use a separate path. Variations of this theme are also possible. Runners and walkers can utilize the shoulder area while “wheel” users utilize the hard surface of the trail. Americans with Disabilities Act (ADA) issues may need to be evaluated if “heel” users are asked to utilize a different surface than “wheel” users.

Multi-Use Trail (Class I Bikeway)

For the CCT, a multi-use trail would be the most preferred facility since it has the ability to accommodate a wide range of users. AASHTO recommended minimum widths for a multi-use trail is 8'. However, 10'-14' wide is more common, with a shoulder of 2'-3' feet. The California Department of Transportation (Caltrans) standard for a Class I Bikeway (Bike Path) contains more detailed design requirements (see **Figure 1**). The ultimate width of a multi-use trail is dependent on two factors:

- The number and type of users; and
- The available site conditions.

Figure 1: Typical Class I Bikeway (Bike Path)
 (Source: *Draft Bicycle Plan*, City of Los Angeles)



Heavy usage will demand a wider trail. However, volume is not the sole factor in determining trail width. The type of user also must be evaluated. A mix of runners, walkers, bicyclists, roller bladers, etc. would necessitate a wider trail width to accommodate the various speeds and the ability to pass.

Existing conditions are often the primary factor in determining trail width. With an 8' wide trail and 2' shoulders, a 12' minimum width would be required for the trail. Often site conditions such as steep slopes, property issues, or environmental sensitive areas preclude the availability for a certain width trail or makes widening the trail unfeasible due to additional costs.

Other variations to providing a wider path include a dual path, but with one-way traffic on each path. Or for short loop areas, one-way traffic with slower users staying to the right can be a good way to accommodate multiple user types.

Bike Lane (Class II Bikeway)

Bike lanes are dedicated lanes along roadways for the exclusive use of bicycles. These lanes are supported by special pavement markings and signing to separate them from vehicular traffic. These facilities are intended for bicycle users who are familiar with traffic laws. Consideration will need to be given to evaluate the transportation-related needs of the CCT, and the benefits realized by providing better services to entice additional bicycle commuters.

One special consideration for bike lanes is on-street parking and the danger it can pose to a bicyclist. Bike lanes are always one-way, and are typically situated on each side of a two-way street. Bike lane widths vary from 4' to 8', depending on the use and construction of the roadway. A minimum of 5' should be provided when bike lanes are adjacent to on-street parking.

Shared Roadway (Signed) (Class III Bikeway)

Shared roadways (signed) are similar to the above category, except that the roadway is signed as a Bike Route and is intended to be preferred as a bikeway because of conditions such as wide lanes, low volume, and low speed vehicular traffic. Modifications to existing roadways to make them more bicycle friendly include: widening the outside lane, paved shoulders, or re-striping to increase the width of the outside lane.

Preferred candidates for a shared roadway are low volume and low speed roads. Lane width should be a minimum of 12', but preferably 14' to 16'. Other considerations for shared roadways include the type of grates used, the presence of rumble strips, and the maintenance of the edge of the roadway for loose gravel or litter.

Since a shared roadway may necessitate that bicycle users are taken further away from the ocean, a parallel trail for pedestrians that is closer to the coastline should be investigated in certain locations.

Shared Roadway (No Bikeway Designation)

For the CCT, unsigned shared roadways would not be a desirable facility for bicycle use. These facilities preclude all user types such as pedestrians and are typically reserved for situations where other facility types are impractical due to various constraints. Typically, all road classifications allow bicyclists except for interstates. However, the lack of bikeway designation may make this type of facility ineligible for certain funding programs (refer to *Technical Memorandum No. 5: Funding* for more information on funding sources).

User Factors

The following user factors should be taken into consideration when recommending alternatives for the CCT:

- Age of potential users should be carefully evaluated. Young and elderly users will have needs and concerns that more experienced users will not.
- Ability of users will need to be evaluated. American with Disabilities Act (ADA) requirements will need to be analyzed.
- Safety issues such as design speed, trail slopes, line of sight, and emergency access will need to be evaluated based on the context of the trail location.
- Potential Use of the trail may include separation of non-motorized modes (for example, a pedestrian-only path in congested areas or natural-surface facilities); this may also mean providing emergency vehicle access or maintenance vehicle access in certain locations.

Steps in the Study Process

Inventory Existing Conditions

An inventory of existing conditions should take place, including, but not limited to:

- Slopes;
- Topography;
- Soil types;
- Utilities;
- Easements;
- Property boundaries;
- Existing trails (width, condition, location, users, etc.);
- Existing plans;
- Environmental (wetlands, sensitive habitat, etc);
- Vegetation; and
- Viewsheds.

Conduct Analysis

Once an inventory of existing conditions is gathered, an analysis of the inventory should take place to prioritize key conditions and locations for improvements.

Identify Obstacles (Key Pinch Points)

When planning trail corridors, certain pinch points often become key obstacles to the successful implementation of the trail. Common obstacles often include crossings (roadway, railroads, water bodies, etc), environmental constraints, and property impacts.

Determine Access Points

Where users access the trail is an important consideration and there must be a balance between connecting the main trail to access points versus utilizing trail spurs that will connect the trail to trailheads, residential areas, businesses, and destinations.

Potential Design Materials

Pavement Components

The main component of the trail cost will be the trail surface, sub-base, and sub-grade. Even at a feasibility study level, enough information shall be gathered on proposed trail surfaces in order to accurately produce a feasibility level cost estimate. Trail surface materials and preparation can vary dramatically, and thus dramatically affect costs.

The most common type of trail surfaces includes: concrete, asphalt, and aggregate surfaces. The criteria for choosing type of surfaces includes: the type of user, location, and cost.

Structural Elements

Possible structures required for the trail may include walls, bridges, and tunnels. Tunnels and bridges fall into the following three categories:

- Minor structures would be considered bridges less than 100' in length that, depending on the location, are fairly simple in placement, abutments, and geotechnical. Prefabricated bridge structures are typically used.
- Major bridges would be bridges 100' or greater, that even with a prefabricated structure, requires detailed engineering for abutments, geotechnical, and construction staging.
- Signature bridges would include bridges at highly visible location that would be an architecturally significant design.

Magnitude of tunnels would depend on the location and existing conditions, more so than the length.

Railings / Fencing

Railing types would vary on the location, but generally would be required to be 54" in height. Where fall protection is required, fence openings would be required to meet the 4" sphere test, unless more stringent local codes apply. Where railings are used to keep bicyclists from steep slopes beyond the shoulder, three rail fencing would be governed by AASHTO standards, unless more stringent local codes apply.

Signing

Signing falls into the following three categories:

- Regulatory signs must meet the *Manual of Uniform Traffic Control Devices (MUTCD)*
- Wayfinding and educational signs can vary for the project, and be customized to provide a consistent design aesthetic for the trail
- Route signs designate a particular segment of trail or path as being a specific route, such as the CCT; route signs have already been designed for installation on the CCT, using the official CCT emblem as shown in **Figure 2**

Figure 2: California Coastal Trail Route Symbol
(Source: <<http://www.californiacoastaltrail.info>>, Coastwalk)



Greenspace

The greenspace with the right-of-way or easement of the trail is an opportunity for a variety of uses including wildlife habitat, native vegetation, and stormwater management.

Design Standards

During the feasibility study, applicable project design standards for design speed, trail width, and trail longitudinal slope will be required. Applicable national, state, and local design standards include, but are not limited to the following:

Federal and National Design Standards

- *Accessible Rights-of-Way: A Design Guide*, United States Access Board
- *Guide for the Development of Bicycle Facilities*, AASHTO
- *Guide for the Planning, Design, and Operation of Pedestrian Facilities*, AASHTO
- *Guide Specifications for Design of Pedestrian Bridges*, AASHTO
- *Designing Sidewalks and Trails for Access*, Federal Highway Administration
- *Trails for the Twenty-First Century*, Flink, Olka, and Searns

State Design Standards

- *Highway Design Manual – Chapter 1000 Bikeway Planning and Design*, California Department of Transportation (Caltrans)
- *California Manual of Uniform Traffic Control Devices*, Caltrans
- *Pedestrian and Bicycle Facilities in California*, Caltrans

Local Design Standards

- *San Diego County Community Trails Master Plan*, County of San Diego
- *Planning and Designing for Pedestrians: Model Guidelines for the San Diego Region*, San Diego Association of Governments (SANDAG)
- *Regional Standards Book*, San Diego Area Regional Standards Committee
- *Engineering Standards*, City of Carlsbad
- *Engineering Design Manual*, City of Oceanside
- *Engineering Design Manual*, City of Encinitas
- *Standard Drawings 2006*, City of San Diego
- *Coronado Annotations*, City of Coronado
- *Design Standards*, City of Chula Vista

Feasibility Study for the San Diego portion of the California Coastal Trail Technical Memorandum No. 4: Environmental

Purpose: *Technical Memorandum No. 4: Environmental*, provides a summary of the recommended methods for preparing an Environmental Constraints Memorandum (ECM).

Intent of the Environmental Constraints Memorandum (ECM)

The intent of the ECM is to identify and depict the natural and community resources in the project area that could be adversely impacted by project development. In particular, the ECM is to evaluate resources afforded regulatory protection that may affect the feasibility of the project by constraining the design, or by introducing regulatory authority or processes that may prolong or inhibit the project's environmental clearance process.

This information will allow the project team to:

- Anticipate future environmental requirements for the project and the approximate timeline for obtaining project approvals, thereby making the environmental process more predictable, and allowing for accurate incorporation of the process into the project development and construction schedules.
- Establish the most appropriate environmental clearance document and the required accompanying technical reports.
- Consider design changes early in the process that will reduce budget and time for project implementation.
- Gain a more accurate picture of the regulatory requirements and costs associated with different alternative designs and to discard alternatives for which the environmental constraints would be too great.

Technical Analysis Approach

Environmental clearance (design phase) and regulatory compliance (permitting phase) have the potential to directly impact a project's scope, schedule and budget. Therefore, depicting and presenting the existing environmental resources early on is the key to avoiding and minimizing environmental effects and to facilitating design decisions by the project team.

The ECM should provide materials to the project team on:

- Locations of environmental constraints and identification of areas to avoid if possible.
- The regulatory authority associated with each constraint identified, and a compatible list of agency thresholds (if any) that the designers and project owner/project management team should be aware of during project design.
- The scope of studies necessary to address the constraints identified, and the likely environmental process that would be required through the permitting and construction phase (more than one path may be defined and assumptions listed for each).
- Opportunities for early coordination with regulatory agencies to develop consensus on the approach to resource avoidance and potential mitigation.
- Other strategies that could reduce the overall project schedule, the scope of future studies, and the project budget.

Consistent communication between the engineering team and the environmental constraints analysis team is key at this phase. Monthly meetings should be scheduled to discuss and verify project assumptions, right of way, construction methodology being considered, and access points and easements. Initially, assumptions may need to be made (and clearly stated on maps and in text of report) regarding the project limits, including access and construction staging areas, and the types and duration of disturbances.

It is recommended that the most current CEQA Appendix G topics (or a local agency CEQA checklist if available) be used as a starting point for identifying the environmental resources that may represent constraints. If Federal funds are being considered, NEPA topics (such as environmental justice and Section 4(f) resources) should also be addressed.

Typically, research to determine environmental constraints requires a multi-pronged approach that includes contacting City and County planning departments, reviewing existing zoning and general plan designations; as well as other applicable resources code or public code regulations that will apply to the project. If the regulations are scheduled to be updated (or if a permit requirement is changing on a certain date), this should be indicated.

Recently certified environmental documents in the project vicinity should be reviewed to get an idea of the trends in the area and the lessons learned and identify any potential planning conflicts. Discussions with state, federal, and local regulatory agencies using an inter-agency forum is a suggested means of initiating engagement and early coordination.

The following data collection activities are commonly used in preparing an ECM:

- 1) Site visit
- 2) Request GIS/AutoCAD project area boundary from design team
- 3) Determine if the project is in the California Coastal Zone (and applicable requirements if so)
- 4) Identify any watercourses (including blueline streams and other U.S. waters) in the project area and what the condition is (channelized, riparian, degraded)
- 5) Determine if Caltrans has jurisdiction in any portion of the project area
- 6) Review of other pending and approved environmental documents from projects in the immediate project area
 - a) Identify resources encountered
 - b) Review contacts and data sources
- 7) Review of other pending and approved environmental documents from similar projects in the region
 - a) Identify sensitive species and habitat or mitigation programs
 - b) Review operational stormwater requirements from RWQCB
- 8) Contact the planning department/assessors to:
 - a) obtain all available database layers
 - b) ask about habitat conservation programs and local ordinances
 - c) discuss nearby community resources
 - d) obtain noise ordinance
 - e) obtain tree ordinance, if applicable
- 9) Contact the air district to determine requirements

- 10) Request record search from California Historical Resource Information System (CHRIS)
- 11) Download information from the California Natural Diversity Database
- 12) If possible, informally consult with ACOE, CDFG, and USFWS to verify baseline findings

Environmental Constraints Memorandum Format

The ECM should be approximately 20-40 pages in length and include a spatial database in either ArcGIS or AutoCAD format. The text portion of the ECM report will contain the following information, submitted in the format shown below, or in a similar format that provides all of the requested information.

Sample Format: Text Discussions

- 1) Executive Summary
 - a) Purpose of the ECM
 - b) Overview of environmental process and constraints for similar projects in the region
 - c) Summary of Findings
 - d) A tabular presentation of environmental constraints for each alternative that directly relates to the accompanying special database.
- 2) Project Understanding
 - a) Brief Description of Project Alternatives
 - b) Project Objectives
- 3) Natural Resource Constraints
 - a) Floodplain
 - b) Biological Resources
 - i) Sensitive species and plant habitat
 - ii) Wetlands
 - iii) Documented special habitats (critical habitat designations, mitigation sites)
 - c) Cultural Resources
 - i) General sensitivity for archaeological and paleontological resources
 - ii) Known historic or prehistoric resources
- 4) Community Resources
 - a) Parks, Schools, and other Community Facilities
 - b) Section 4(f) resources
- 5) Permitting
 - a) Jurisdiction
 - b) Estimated permitting requirements
 - c) Permitting timelines
 - d) Opportunities to reduce permitting requirements
- 6) Conclusions and Recommendations
 - a) For each alternative:
 - i) Environmentally-sensitive areas to avoid
 - ii) Design considerations or changes to reduce environmental impacts or effects to jurisdictional resources

- iii) Anticipated environmental process and document, relative cost and timeline related to environmental compliance
 - iv) List of required technical reports and regulatory permits (tabular format)
 - b) Opportunities for early coordination with regulatory agencies
- 7) Data Gaps
 - a) Summary of locations and/or resources requiring additional study due to limits of available data
- 8) References and Agencies Consulted
 - a) Annotated list of sources, including dates, authors, and points of contact

The spatial database should provide the database layers shown below, plus any other layers that the consultant considers important in providing information on the project-area constraints. It is also helpful if the database includes hyperlinked photographs of resources identified during field visits. To reduce printing costs, the database may be provided on DVD-ROM disks or flash drive.

Sample Format: Spatial Database Layers

- 1) Aerial photographic base image
- 2) Project boundaries
- 3) Floodplain
- 4) Wetlands
- 5) Biological species occurrences
- 6) Watersheds
- 7) Land Use
 - a) Prime agricultural land
 - b) Community facilities, including parks and schools
 - c) Roads
 - d) Assessor's Parcel Number
 - e) Zoning
 - f) Utility Easements
- 8) Documented special habitats (critical habitat designations, habitat mitigation sites)
- 9) Regulatory Jurisdiction (CDFG, ACOE, Flood Control)

Assumptions

- These environmental topics and database layers are considered to be a suggested list, and are not all inclusive. The consultant should add discussions and topics that are relevant to environmental constraints. Other resources may be identified pursuant to the CEQA checklist or the NEPA process.
- It is assumed that these database layers can be obtained from existing sources; no new data should be developed.
- No protocol studies for sensitive species or cultural resource surveys are required at this phase of project development. Field work should be limited to foot and windshield surveys.

Feasibility Study for the San Diego portion of the California Coastal Trail Technical Memorandum No. 5: Funding

Purpose: *Technical Memorandum No. 5: Funding* highlights Federal, State, and Local programs that could be used for funding California Coastal Trail segment improvements.

Introduction

Numerous potential funding sources exist for bikeway projects. The first step is, of course, to program the improvements into the Regional Transportation Improvement Plan (RTIP). Besides the more obvious sources of federal and state funding (e.g., SAFETEA-LU programs), other related funds may be applicable for the California Coastal Trail (CCT) feasibility, environmental, design, and construction projects.

To apply for most funding programs, the state, county, city, or local Metropolitan Planning Organization (MPO) must “leverage” funds; in other words, match anywhere between 10% to 50% of the total funds required. San Diego Association of Governments (SANDAG), as the local MPO, continues to collect local funds through a local sales tax called TransNet. Cities and counties also receive local revenues through other sources such as sales taxes. As a condition of federal or state funding, certain requirements may also be associated. For instance, the use of federal or state programs make it mandatory that the National Environmental Protection Act (NEPA) and California Environmental Quality Act (CEQA) processes be completed before proceeding to the design phase (see *Technical Memorandum No. 4: Environmental*).

Bikeway and recreational trail funding strategies

Funding of non-motorized facilities is somewhat more complex than for highways. Depending on funding sources, certain trail segments may only be eligible for a limited number of programs. However, this also opens up other non-transportation sources of funding. Some key strategies to consider:

- The CCT is a segmented route. Thus, programs exist that specifically address continuity problems on bicycle and/or pedestrian facilities officially designated on a local bikeway plan.
- Certain funding is available only for the purchase of right of way for bikeways, or even for the purchase of park or public lands. Once a parcel is dedicated as parkland, it could later have a bicycle path constructed through it.
- Some funding sources allow grant or local matching funds to be used for bicycle facility construction. For instance, a bicycle path constructed parallel to the main highway might be considered a safety improvement, as it would move most bicycles from the road, and widen the shoulder. Another example would be improving rail bridges by constructing a wide shoulder on one side for shared emergency access and bicycle use. There is also a cost savings with this strategy, as construction equipment is present on the job site (as opposed to two separate construction projects).
- Shared ownership of trail segments can sometimes be used as local funding to leverage state or federal funds. In other words, if a local agency and a state/federal agency both construct or improve segments on the same trail, the local match might be waived.

- Bikeway projects can encourage people to improve overall health, increase commercial traffic to historic districts or commercial districts, add to livability or create community pride, preserve and protect natural conservation areas, and become focal points for arts projects. Thus, “out of the box” funding exists, such as health services grants, community block grants, economic development grants, environmental protection grants, or arts enhancement grants.
- Separate funding is available for pedestrian-only facilities. This may be useful if it is necessary to provide separate trails for wheeled users and walkers at congested points along the CCT.
- Accessibility is also a factor to consider when deciding on funding sources. Evaluation criteria for certain funding sources gives additional weight to projects that seek to upgrade facilities to make them accessible by the disabled. Many of the design considerations for disabled users also apply to bicycle and roller blade users.
- Certain funding sources (particularly most SAFETEA-LU programs) may only be used in conjunction with transportation projects, and specifically prohibit use of funds on recreational trails. This is of particular concern along the unimproved portions of the CCT that closely parallel the coastline. These trails are intended for those with fewer mobility challenges, or even equestrian use.

The following is a partial list of funding programs available for the planning, design, or construction of, or for specific components of, the CCT. It should not be considered to be an all inclusive list, as many other sources exist.

Federal funding sources

ARRA (Economic Recovery Act)

The American Recovery and Reinvestment Act (ARRA, or the “Economic Stimulus Bill”) was passed into law in January 2009. Funding is allocated to numerous federal agencies. Since its enactment, several billion dollars have been allocated toward “shovel-ready” construction projects. In February 2010, TIGER grants were awarded to several large highway projects. Although few of the ARRA awards have been spent, most of the funding has been allocated. ARRA may have created or replenished smaller grant programs which bikeways or trails would be eligible. However, unless another stimulus bill is enacted in the future, this funding source is unlikely to be directly useful to the CCT initiative. The website for the latest information on ARRA can be found at:

<http://www.recovery.gov/Pages/home.aspx>

SAFETEA-LU

The Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU), adopted in 2005, expired in October 2009, and was extended to March 2010, is the new federal transportation legislation that affects virtually all federal bikeway funding. Although the SAFETEA-LU bill has expired, its programs have been re-appropriated through the remainder of 2010 with the “Jobs” bill as a temporary stop-gap measure. Federal funding under this measure has provided for the same level of funding as fiscal year 2009. However, funding will need to be allocated for future years. Funding is generally programmed through the California Department of Transportation (Caltrans) and

SANDAG. Most, but not all, of the funding programs are transportation (versus recreation) oriented, with an emphasis on:

- reducing auto trips
- providing inter-modal connections

Funding criteria often requires quantification of the costs and benefits of the system (such as saved vehicle trips and reduced air pollution), proof of public involvement and support, CEQA and NEPA compliance, and commitment of local resources. In most cases, SAFETEA-LU provides matching grants of up to 80 to 90 percent but preference is usually given to projects with a higher local funding percentage.

Projects that receive funding from many SAFETEA-LU programs must apply through SANDAG. The required local match for these funds is generally 20 percent and projects compete based on a number of criteria. Assuming reauthorization of this bill, or the enactment of a similar bill, numerous funding opportunities are available through SAFETEA-LU for the CCT. The most recent information on SAFETEA-LU can be found at:

<http://www.fhwa.dot.gov/safetealu/index.htm>

Regional Surface Transportation Program (RSTP)

The RSTP is a block grant fund, apportioned by Caltrans and programmed by SANDAG. Funds are used for roads, bridges, transit capital, bicycle projects (including bicycle transportation facilities), bike parking facilities, equipment for transporting bicycles on mass transit vehicles and facilities, bike-activated traffic control devices, preservation of abandoned railway corridors for bicycle trails, and improvements for highways and bridges. SAFETEA-LU allows the transfer of funds from other SAFETEA-LU programs to the RSTP funding category. Current SANDAG policy, as included in the adopted TransNet Plan of Finance, sets aside 94% of RSTP and CMAQ funds to supplement TransNet to complete the TransNet Major Corridor Program of projects. Therefore, this funding source may not be a viable source of funding for the CCT.

Congestion Mitigation and Air Quality (CMAQ)

This funding source is also programmed by SANDAG. Funds are available for projects that will help attain National Ambient Air Quality Standards (NAAQS) identified in the 1990 federal Clean Air Act Amendments. Since bicycle projects help meet national goals for improved air quality and congestion relief, they are eligible for CMAQ funds. Projects must come from jurisdictions in non-attainment areas. Eligible projects include bicycle transportation facilities intended for transportation purposes, bicycle route maps, bicyclist activated traffic control devices, bicycle safety and education programs and promotional programs. Several regional bikeway projects have been developed using CMAQ funds. However, this may not be considered a viable source of funding for CCT implementation in the near future due to SANDAG's policy to dedicate 94% of discretionary funds to the Early Action Program.

Safe Routes to School (SRTS)

SAFETEA-LU established a permanent Safe Routes to School program which supports projects that encourage more children to walk or ride a bike to school. This funding program is administered through Caltrans. SANDAG, as the regional MPO, is eligible to

receive grants under this program. Cities and counties are also eligible to receive funding. No local match is required. Eligible activities are the planning, design, and construction of projects that will substantially improve the ability of students to walk and bicycle to school. These include sidewalk improvements, traffic calming and speed reduction improvements, pedestrian and bicycle crossing improvements, on-street bicycle facilities, off-street bicycle and pedestrian facilities, secure bike parking, and traffic diversion improvements in the vicinity of schools (within approximately 2 miles). Such projects may be carried out on any public road or any bicycle or pedestrian pathway or trail in the vicinity of schools. More information can be found at the Caltrans Safe Routes to School Website:

<http://dot.ca.gov/hq/LocalPrograms/saferoutes/srts.htm>

Transportation Enhancement Activities (TE)

TE funds are programmed by the California Transportation Commission, but administered by Caltrans. The TE Program is a 10 percent set-aside of funds from the Surface Transportation Program, and is one of the most common funding sources for bicycle and pedestrian projects. TE funds are applicable for 12 specific types of projects. Two enhancement activities are specifically bicycle related:

- Provision of facilities for bicyclists
- Preservation of abandoned railway corridors (including conversion and use for bicycle trails)

Projects must have a direct relationship to the intermodal transportation system through function, proximity, or impact. The Caltrans website for TE funding is located at:

<http://www.dot.ca.gov/hq/TransEnhAct/TransEnact.htm>

Transportation, Community, and System Preservation Program (TCSP)

This federal program was created as a pilot by TEA-21. Cities are eligible to apply for these funds. Application is through either the Caltrans Division of Local Assistance or through FHWA. SANDAG is also eligible, but since this is a discretionary funding source, SANDAG's policy on applying discretionary funds to the Early Action Program may override the use of this program. The program was made permanent with \$270 million over five years nationwide in the SAFETEA-LU bill. One eligible use is for projects that reduce the impacts of transportation on the environment. Funding is eligible to be used for bicycle and pedestrian projects; a number of projects funded under TEA-21 were for non-motorized transportation programs. More information on this funding program may be found at:

http://www.fhwa.dot.gov/tcsp/pi_tcsp.htm

Highway Safety Improvement Program (HSIP)

This is a new program to replace the Safety Set-aside program, and is also administered by Caltrans. It significantly increases funding to \$5 billion nationwide over four years (2006-2009). Bicycle and pedestrian projects historically accounted for one percent of safety construction funds, which would mean \$50 million over the life of SAFETEA-LU nationwide. The program is very similar in scope and purpose to the safety set-aside

program in TEA-21; projects to improve the safety of bicyclists and pedestrians are eligible. The HSIP is unlikely to fund construction of new bikeways, however. HSIP funds are eligible for work on any publicly-owned roadway or bicycle/pedestrian pathway or trail that corrects or improves the safety for its users. It is the intent of the HSIP that federal funds be expended on safety projects that can be designed and constructed expeditiously. Projects should not require the acquisition of significant rights of way (not more than 10% of the construction cost), nor should they require extensive environmental review and mitigation. More information can be found about the HSIP program at:

<http://www.dot.ca.gov/hq/LocalPrograms/hsip.htm>

Recreational Trails Program

The Recreational Trails Program is programmed by California State Parks. This program provides funds for developing and maintaining recreational trails and facilities for both non-motorized and motorized recreational trails. This is a five-year federal funding program at \$370 million nationwide. At least 30% must be spent on non-motorized trail projects, which means around \$110 million over the life of SAFETEA-LU nationwide. Examples of non-motorized trail uses include hiking, bicycling, and equestrian. While bikeway projects have been developed through this program, the urban location and transportation emphasis of the CCT suggests this will not be a major source of revenue for project implementation. There are, however, recreational trails and access points along the coast that may not be eligible for other SAFETEA-LU funds. The state website for the Recreational Trails Program is located at:

http://www.parks.ca.gov/?Page_id=24324

Other potential sources of federal funding

Federal funding of specific projects by Act of Congress

Although an unlikely source of federal funding, the congressional delegation from the State of California has the ability to receive special funding by Act of Congress for use on any particular project. The local elected delegation to the State Capitol also has the ability to do the same in the state legislature. These are typically in the form of:

- Earmarks: funding allocated to specific projects by inclusion in a larger, sometimes unrelated bill
- Pilot projects: funding intended to demonstrate feasibility of a unique situation or new technology that could be applied on a larger scale if successful

Land and Water Conservation Fund (National Park Service)

Funding allocated to California under this program is administered by California State Parks and provides funds to acquire land for recreational purposes, including bicycle paths and support facilities (such as bike racks). Eligible applicants include cities, counties and other entities responsible for maintaining park and recreation areas. For local agencies, funds are provided through a competitive selection process, with a 50% local match requirement. More information can be found at:

http://www.parks.ca.gov/default.asp?page_id=21360

HUD Community Development Block Grants (CDBG)

The Community Development Block Grant (CDBG) program is a flexible program that provides communities with resources to address a wide range of unique community development needs. Beginning in 1974, the CDBG program is one of the longest continuously run programs at HUD. The CDBG program provides annual grants on a formula basis to local government and states. Cities and counties are both eligible, but SANDAG is not directly eligible. Each activity must meet one of the following national objectives for the program: benefit low- and moderate-income persons, prevention or elimination of slums or blight, or address community development needs having a particular urgency because existing conditions pose a serious and immediate threat to the health or welfare of the community for which other funding is not available. A grantee must develop and follow a detailed plan that provides for and encourages citizen participation.

Funding is programmed both through HUD and California Department of Housing and Community Development. The annual CDBG appropriation is allocated between States and local jurisdictions called "non-entitlement" and "entitlement" communities respectively. Entitlement communities are comprised of central cities of Metropolitan Statistical Areas (MSAs); metropolitan cities with populations of at least 50,000; and qualified urban counties with a population of 200,000 or more (excluding the populations of entitlement cities). States distribute CDBG funds to non-entitlement localities not qualified as entitlement communities.

HUD determines the amount of each grant by using a formula comprised of several measures of community need, including the extent of poverty, population, housing overcrowding, age of housing, and population growth lag in relationship to other metropolitan areas. More information can be obtained on this funding source at the following locations:

<http://www.hud.gov/offices/cpd/communitydevelopment/programs/>
<http://www.hcd.ca.gov/fa/cdbg/>

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service administers several types of conservation grants for long-term preservation, restoration, enhancement, and/or education in wetland and protected habitat areas. States, cities and counties are eligible, as well as non-profit organizations. Examples of the types of grant programs that the CCT effort may be qualified for are the North American Wetlands Conservation Standard Grants Program and the National Coastal Wetlands Grants Program. More information on these grants can be located at:

<http://www.fws.gov/birdhabitat/Grants/NAWCA/index.shtm>
<http://www.fws.gov/coastal/CoastalGrants/index.html>

State funding sources

Proposition 1B

Proposition 1B (Prop 1B) provided \$19.925 billion in bond funds for a variety of transportation priorities, including \$2 billion for cities and counties to fund the maintenance

and improvement of local transportation facilities. The 2007 Budget Act and Chapter 181, Statutes of 2007 (SB 88), appropriated a total of \$950 million of these Prop 1B funds in 2007-08. Of this amount, Chapter 314, Statutes of 2007 (AB 196), specified that \$550 million be allocated to cities and \$450 million be allocated to counties. Chapter 39, Statutes of 2008 (AB 1252), appropriated an additional \$87 million in these Proposition 1B funds specifically to counties. These funds are referred to as the 2008 Supplemental Appropriation for Counties. The 2008 Budget Act appropriated a total of \$250 million, including \$63 million available to counties and \$187 million available to cities on a first-come, first-served basis. The 2009 Budget Act appropriates a total of \$700 million, including \$258,205,000 for cities and \$441,795,000 for counties, which represents the remaining balance of Proposition 1B Local Streets and Roads funding.

Although there are many different Proposition 1B programs, none are specifically for bikeways. Since most of these funds have already been committed, and since no additional bonds are being sold, it is unlikely that this will be a direct or indirect source of funds for the CCT.

Coastal Conservancy

Some examples of the kinds of projects the Coastal Conservancy may fund include trails and other public access to and along the coast, natural resource protection and restoration in the coastal zone or affecting coastal areas, restoration of coastal urban waterfronts, protection of coastal agricultural land, and resolution of land use conflicts. The stages of a project generally funded by the Coastal Conservancy include pre-project feasibility studies, property acquisition, planning (for large areas or specific sites) and design, environmental review, construction, monitoring, and, in limited circumstances, maintenance. The Coastal Conservancy currently has no formal process or forms for grant applications. Most Conservancy-funded projects are developed over time through the joint efforts of Conservancy staff and potential grantees.

State Transit Assistance (STA)

This program is intended for transit agencies. The state cut these funds to close the budget gap, but recently reinstated 40% for projects under this program. Transit agencies were forced to cut service because of the funding cuts, so it is unlikely that STA funds would be used for bicycle or pedestrian facilities along the CCT in the near future.

State Bicycle Transportation Account (BTA)

The BTA provides state funds for city and county projects that improve safety and convenience for bicycle commuters. It is an annual statewide discretionary program that is available through the Caltrans Bicycle Facilities Unit for funding bicycle projects. Available as grants to local jurisdictions, the emphasis is on projects that benefit bicycling for commuting purposes. Grants to cities and counties provide over \$7 million yearly, with an emphasis on funding projects that benefit bicycling for commuting purposes.

San Diego County received approximately \$2 million in BTA funds for fiscal year 2009/10. Applicant cities and counties are required to have a Bicycle Transportation Plan (BTP) that conforms to Streets and Highways Code 891.2 in order to qualify to compete for funding on a project-by-project basis. BTA funds have been used to develop regional bikeways. Funds would only be available through a cooperative agreement with a local agency that agreed to

apply for the funds on SANDAG's behalf. A local match of 10% is required for all awarded funds. The guidelines on the Caltrans Local Assistance web site can be found at:

<http://www.dot.ca.gov/hq/LocalPrograms/bta/btawebPage.htm>

Safe Routes to School (SR2S)

The Safe Routes to School program is a state program administered by Caltrans using allocated funds from the Hazard Elimination Safety program of SAFETEA-LU. This program is meant to improve school commute routes by eliminating barriers to bicycle travel through rehabilitation, new projects, and traffic calming. A local match of 11.5% is required for this competitive program, which allocates \$18-million annually. The most recent funding cycle provided \$2.2 million in San Diego County. Only cities and counties are eligible under the state program. Planning grants are not available through this program. The state Safe Routes to School program website is:

<http://www.dot.ca.gov/hq/LocalPrograms/saferoutes/sr2s.htm>

Community Based Transportation Planning (CBTP) Grants

This funding program is administered by Caltrans, and is available to SANDAG as well as cities and the County of San Diego. Approximately \$1 million was awarded to San Diego County projects in the last funding cycle. The CBTP grant program funds local planning activities that encourage livable communities. The intention of the grants is to help communities better integrate land use and transportation planning, to develop alternatives for addressing growth, and to ensure that infrastructure investments are efficient and meet community needs. Funding is provided by a 20% local match. The website for the CBTP Grant program is:

<http://www.dot.ca.gov/hq/tpp/grants.html>

Environmental Enhancement and Mitigation Program

This funding program is administered by Caltrans, although grants are evaluated by the Natural Resources Agency. Funds, when available, are allocated to projects that offset environmental impacts of modified or new public transportation facilities including streets, mass transit guideways, park-and-ride facilities, transit stations, tree planting to equalize the effects of vehicular emissions, and the acquisition or development of roadside recreational facilities. In the 2008-09 funding cycle, San Diego County projects received over \$2 million in funding from this program. This program may not currently be funded. The most recent information on this funding program can be located at:

<http://resources.ca.gov/eem/>

AB 2766 Clean Air Funds

AB 2766 Clean Air Funds are generated by a surcharge on automobile registration. State law authorizes the San Diego County Air Quality Management District (AQMD) to assess motor vehicle registration fees of between \$2-\$4 to reduce air pollution from motor vehicles and for related planning, monitoring, enforcement, and technical studies necessary for the implementation of the California Clean Air Act.

Local funding sources

Transportation Development Act (TDA) Article 3 bikeway funds

The TDA creates a Local Transportation Fund (LTF) in each county in which a ¼ cent sales tax of the state sales tax is deposited annually based on the amount of sales tax collected. The funds are allocated based on population. Annual revenues currently are approximately \$1.8 million for San Diego County. Bicycle and pedestrian facilities are eligible for up to 2% of the total TDA funds available. SANDAG has successfully used these funds for trail projects, and administers these funds in the San Diego region to cities and the County. The funds are distributed locally through the same competitive process used to award TransNet active transportation grants.

SANDAG TransNet ½ % local sales tax (Proposition A)

The TransNet ½-cent transportation sales tax program has provided approximately \$31.4 million in sales tax revenues and interest earnings for active transportation projects since it first began in 1988. With the passage of the TransNet Extension Ordinance in 2009, a 2% set-aside from the annual revenues was created, which was intended to fund pedestrian and neighborhood safety (traffic calming) projects. TransNet funds primarily serve as the local match for federal funds. The overwhelming majority of the funds have gone to local projects through an annual competitive grant process.

According to Board Policy #31 (Ordinance and Expenditure Plan Rules), Rule #21 states that “adequate provisions for bicycle and pedestrian travel” may be used for TransNet funds. This allows the TransNet funds to be used for accommodations of pedestrian and bicycle traffic within a project area. There is a good chance that the Local Streets and Roads fund could include these improvements in roadway projects. However, it is less likely that any other TransNet funds can be used for bikeway or pedestrian projects.

New construction

Future road widening and construction projects are one means of providing bikeways. To ensure that roadway construction projects provide bike lanes where needed, it is important that an effective review process is in place to ensure that new facilities meet the standards and guidelines of the local jurisdictions along the CCT corridor. Developers may also be required to dedicate land toward the widening of sidewalks and roadways in order to provide for enhanced pedestrian and bicycle mobility.

Impact fees and developer mitigation

Another potential local source of funding is developer impact fees, which typically tie to trip generation rates and traffic impacts produced by a proposed project. A developer may reduce the number of trips (and hence impacts and cost) by providing or paying for on- or off-site bikeway improvements that will encourage residents to bicycle rather than drive. Establishing a clear justification between the impact fee and the project’s impacts is critical in avoiding a potential lawsuit.

Mello Roos

Bike paths, lanes, and routes can be funded as part of a local assessment or benefit district. Defining the boundaries of the benefit district may be difficult unless the facility is part of a

larger parks and recreation or public infrastructure program with broad community benefits and support.

Business Improvement Districts

Bicycle improvements can often be included as part of larger efforts related to business improvement and retail district beautification. Similar to Mello Roos assessments, Business Improvement Districts collect levies on businesses in order to fund area-wide improvements that benefit businesses and improve access for customers. These districts may include provisions for pedestrian and bicycle improvements, such as wider sidewalks, landscaping, and ADA compliance.

Private/non-profit partnerships

Private and non-profit corporations can also help leverage money for bikeway and trail projects. Some grants may allow the labor of non-profit corporations to be counted as matching funds. Private companies may be willing to sponsor portions of the facility (benches, kiosks, or portable restrooms, for instance). Donations of money, labor, land, or even allowing their private lot to be used as a trailhead parking facility are also possibilities. Foundations, such as the Ford Foundation, also offer private grant opportunities.