What Would Be the Public Costs of Completing and Operating the Coastal Trail?

The California Coastal Trail will offer experiences that range from a stroll on a sandy beach to roller skating on a concrete esplanade; and from a horseback ride through deep forest to a hike along a barren bluff. To provide these public recreational experiences a variety of financial commitments are required, including both one-time capital outlay for acquisition of new rights-of-way, construction of a variety of trail surfaces, installation of directional and interpretive signs, improvements to numerous public highways, etc., and ongoing expenditures for supervising public use of these facilities and planning for their maintenance and repair.

While the costs of specific trail improvement projects will vary from site to site, by comparison with the known costs of recent acquisition and trail improvement projects it is possible to provide a reliable estimate of the total capital outlay costs necessary to complete the Coastal Trail in accordance with the recommendations made in this report.

Acquisition and Construction

For the purpose of providing a planning estimate, the principal capital outlay costs of completing the Coastal Trail may be described for the following categories:

*The California Conservation Corps works on wilderness trails.*
• Acquisition of new right-of-way for nonmotorized trails, including both (a) fee title acquisitions and (b) acquisition of trail easements only;

• Construction of new trails, including both (a) hard-surface, all-weather, fully accessible pathways and (b) rural trails of lesser surfacing and utility;

• Improvements to highway shoulders to enable nonmotorized traffic to use these routes safely;

• Installation of signs, for directional and interpretive purposes; and

• Planning, design, environmental analyses, and permitting for all of the above.

These categories do not take into account unique conditions that may add substantially to the cost of completing the trail, or the indirect costs of recreational support facilities that may be associated with trails. These would include the construction of urban waterfront esplanades for high-volume traffic areas; the construction of bridging, stairways, boardwalks, raised embankments, etc., that may be needed to provide trail continuity in difficult topographic conditions or areas of unusual environmental sensitivity; and the construction of parking facilities, restrooms, and other access support amenities. Even for planning purposes, these extraordinary costs cannot be estimated with any
degree of accuracy in advance of specific project designs.

Figure 1 (below) indicates the estimated number of miles within each county for which capital improvements would be required in order to complete the trail as recommended in this report.

Figure 2 (following page) indicates the estimated cost of carrying out each category of activity. A range of costs has been provided for each category of capital outlay activity, reflecting the variety of circumstances along the 1,300 mile trail route. These cost estimates have been derived from actual Coastal Conservancy project expenditures representative of each type of action, adjusted for inflation to current dollars. Estimated costs of “land acquisition” assume the purchase of public trail rights-of-way only, whether by easement or fee title, not the total cost of acquiring larger coastal parcels.

These are rough estimates of capital outlay costs, for planning purposes. Reflecting that, a range of costs has been provided. More accurate cost estimates would require the completion of site-specific studies—whether appraisals of property or designs and environmental analyses for construction—beyond the scope of this report. Nonetheless, some basic conclusions may be drawn about the capital outlay costs of completing the Coastal Trail:

- Given the sensitivity of the Coastal Trail route, costs of planning, design, environmental analysis, and permitting will be substantial, and at many sites may exceed the costs of physical construction.

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**Figure 1. Improvements Needed to Complete the Coastal Trail: Estimated Linear Miles by County**

<table>
<thead>
<tr>
<th>County</th>
<th>Highway Improvements</th>
<th>Acquisition/Construction on Private Lands</th>
<th>Construction on Public Lands</th>
<th>Current Improvements Adequate</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Del Norte</td>
<td>4 miles</td>
<td>4 miles</td>
<td>17 miles</td>
<td>46 miles</td>
<td>71 miles</td>
</tr>
<tr>
<td>Humboldt</td>
<td>3 miles</td>
<td>50 miles</td>
<td>9 miles</td>
<td>92 miles</td>
<td>154 miles</td>
</tr>
<tr>
<td>Mendocino</td>
<td>54 miles</td>
<td>25 miles</td>
<td>7 miles</td>
<td>41 miles</td>
<td>127 miles</td>
</tr>
<tr>
<td>Sonoma</td>
<td>26 miles</td>
<td>7 miles</td>
<td>4 miles</td>
<td>25 miles</td>
<td>62 miles</td>
</tr>
<tr>
<td>Marin</td>
<td>17 miles</td>
<td>9 miles</td>
<td>66 miles</td>
<td>58 miles</td>
<td>150 miles</td>
</tr>
<tr>
<td>San Francisco</td>
<td>—</td>
<td>—</td>
<td>2 miles</td>
<td>9 miles</td>
<td>11 miles</td>
</tr>
<tr>
<td>San Mateo</td>
<td>21 miles</td>
<td>14 miles</td>
<td>33 miles</td>
<td>18 miles</td>
<td>86 miles</td>
</tr>
<tr>
<td>Santa Cruz</td>
<td>6 miles</td>
<td>20 miles</td>
<td>10 miles</td>
<td>7 miles</td>
<td>43 miles</td>
</tr>
<tr>
<td>Monterey</td>
<td>22 miles</td>
<td>20 miles</td>
<td>53 miles</td>
<td>34 miles</td>
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<tr>
<td>San Luis Obispo</td>
<td>—</td>
<td>44 miles</td>
<td>7 miles</td>
<td>43 miles</td>
<td>94 miles</td>
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<tr>
<td>Santa Barbara</td>
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<td>31 miles</td>
<td>3 miles</td>
<td>17 miles</td>
<td>88 miles</td>
</tr>
<tr>
<td>Ventura</td>
<td>21 miles</td>
<td>—</td>
<td>6 miles</td>
<td>25 miles</td>
<td>52 miles</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>22 miles</td>
<td>5 miles</td>
<td>25 miles</td>
<td>34 miles</td>
<td>86 miles</td>
</tr>
<tr>
<td>Orange</td>
<td>11 miles</td>
<td>3 miles</td>
<td>3 miles</td>
<td>28 miles</td>
<td>45 miles</td>
</tr>
<tr>
<td>San Diego</td>
<td>1 miles</td>
<td>37 miles</td>
<td>—</td>
<td>71 miles</td>
<td>109 miles</td>
</tr>
<tr>
<td>TOTAL</td>
<td>245 miles</td>
<td>269 miles</td>
<td>245 miles</td>
<td>548 miles</td>
<td>1307 miles</td>
</tr>
</tbody>
</table>

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24 COMPLETING THE CALIFORNIA COASTAL TRAIL
Costs of acquisition of new public rights-of-way needed to extend the trail across current private lands typically will not be stand-alone costs. Most of the shorefront properties across which the Coastal Trail will extend are sites of multiple resources (e.g., scenic, habitat, recreation) for which public acquisition would be a priority even without the Coastal Trail route, and the total cost of public acquisition of these sites will be much greater than the amount indicated as needed for the Coastal Trail alone.
This suggests that it may be more accurate to view the new trail rights-of-way not as a new public cost, but as a public benefit that would add to the reasons for public purchase of coastal resource properties.

**Operation and Maintenance**

The administrative costs of supporting use of public trail facilities fall into three general categories:

- **Personnel and equipment to provide supervision and management of trail systems**
- **Personnel and equipment to maintain and repair trail systems**
- **Creating and distributing descriptive and guidance information**

Because substantial portions of the Coastal Trail already exist within public parklands, the added administrative costs associated with completing the Coastal Trail would be principally for the management of newly acquired trail rights-of-way.

Future public costs of operating the Coastal Trail should be controlled through a program encouraging local community volunteer participation in trail operation and maintenance efforts. This would be consistent with successful programs that already exist, such as Caltrans’ Adopt-a-Highway program and the Coastal Commission’s Adopt-a-Beach program. Volunteer participation would also be compatible with the increasing involvement of nonprofit community land trusts in the acquisition of coastal resource lands that would provide trail corridors. A statewide program fostering volunteer trail management can draw on the successful experience of the largest public trail system in the United States: the 2,100-mile Appalachian Trail, which for its development, operation, and management relies on a volunteer organization of more than 4,000 trails activists.

The State should use the Internet as a means of organizing and encouraging volunteer participation in management of the Coastal Trail, and for distributing information to potential trail users. In conjunction with nonprofit advocacy groups representing segments of the principal user groups (e.g., hikers, bicyclists, equestrians, persons with disabilities) and with public and private tourism advocates, it should be possible over time to provide a significant portion of the cost of an Internet site through non-State contributions. A relatively small State investment in developing the initial format and content of an electronic Coastal Trail information portal would provide the foundation for a long-term program of public involvement that would reduce State costs and maximize benefits of the trail.
Environmental Impacts and Resource Concerns

The coast of California has many identities—sandy beaches, expansive bluffs, grasslands, wilderness forests, open farmlands, and dense urban areas. As the Coastal Trail passes through these varied landscapes, it will mirror its surroundings: a paved path along the beach that is a valuable recreational asset on the vibrant Los Angeles waterfront would be inappropriate for the redwood forests of Del Norte County.

- Providing trail designs that are appropriate to local contexts may be the most difficult aspect of implementing the Coastal Trail concept. Under the general heading of “environmental impact,” several distinct issues should be recognized:

Too many people can harm sensitive tidepool inhabitants.
The shoreline is habitat to a great variety of marine and terrestrial plants and animals, and many of these species are threatened or endangered as a result of habitat loss through human intervention. Of the remaining population of plovers, 70–80 percent nest on California beaches. Plovers seek many of the same characteristics in a breeding beach that humans seek for recreation. Plover habitat consists primarily of coastal wetlands and coastal dunes. Plovers nest in the sand high on the beach where they will easily be able to detect predators. Joggers, off-leash dogs, all-terrain vehicles, and even kite flyers conflict with Plover nesting.

Nesting season for Plovers is from March to September. In an attempt to recover plover populations, portions of beach are periodically closed to afford greater protection. Beach closures may necessitate the designation of alternative routes for portions of the Coastal Trail that pass close to nesting sites during times of the year most critical to plover breeding.

Within or adjacent to sensitive habitat areas, trail improvements can help to channel public use so as to minimize impacts. The installation of a wooden boardwalk within a sensitive dune system or adjacent to a wetland may increase total public access yet result in fewer environmental impacts than uncontrolled, informal access. Projects using such designs should include plans to monitor the impacts of public use, to identify any further mitigation needs, and to aid in future designs.

Development of the Coastal Trail system should include an emphasis on public education. Through well-designed directional signing and interesting interpretive displays, in conjunction with the efforts of site docents, it should be feasible to provide substantial public access opportunities even at highly sensitive sites. Strong volunteer organizations can assist public agencies to manage public use, and to conduct long-term monitoring studies.

Many rare and endangered animal species seek protection along the beaches of California to breed and raise their young. Northern elephant seals, which were hunted nearly to extinction in the 1800s, now return every year to several

Western snowy plovers are small shorebirds that breed on Pacific coast beaches from Mexico to Washington. The Pacific coast population was listed as threatened under the federal Endangered Species Act. Declining populations are primarily a result of habitat loss due to urbanization. Of the remaining population of plovers, 70–80 percent nest on California beaches. Plovers seek many of the same characteristics in a breeding beach that humans seek for recreation. Plover habitat consists primarily of coastal wetlands and coastal dunes. Plovers nest in the sand high on the beach where they will easily be able to detect predators. Joggers, off-leash dogs, all-terrain vehicles, and even kite flyers conflict with Plover nesting.

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Western snowy plover, Pescadero Beach
California beaches to breed and raise their pups. California least terns and western snowy plovers lay their eggs on sandy beaches. Wetland and tidepool creatures reside in the intertidal area throughout the year. With an increased understanding of the threats to natural habitat that may accompany human use, a variety of legal protections have been adopted for these sensitive areas. Some of these, now and in the future, will directly affect the ability of the public to use the beach. Already, access to some areas along the coast includes seasonal detours due to seal pupping or snowy plover nesting, while at other sites use permits or docent-led access programs may restrict entry to a few persons per day.

People are more likely to want to protect what they are able to see. Encouraging public access that includes learning about these ecosystems is the best way to create a community of coastal stewards. The coastal environment is home to one of the most complex ecosystems on earth, and the Coastal Trail should highlight its riches. Completing the Coastal Trail should help to manage the impacts of visitors on that environment, helping to protect the resources that make the California coast a wondrous place.
Legal, Administrative, and Institutional Concerns

While the California Coastal Trail will provide countless direct and indirect benefits to California residents and visitors, some complex issues associated with the California Coastal Trail Project also must be considered.

Private Development

Perhaps the greatest challenge is presented by the extensive private development atop coastal bluffs and along beaches that has taken place in recent decades. Homes and other structures, including revetments and seawalls, built behind beaches and atop bluffs along some reaches of the coast, have diminished public access and also reduced the availability of land required to complete the Coastal Trail. In some coastal areas, homes or protective structures have been erected directly on the beach, diminishing beach width and fixing the landward boundary of beaches that would naturally migrate inland. In many areas seawalls are suspected of aggravating beach erosion. Diminished beaches allow fewer opportunities for coastal recreation and less room for the Coastal Trail. As the sea level rises, shoreline homes may be protected but some beaches will be flooded and lost to the public.

A major goal of the Coastal Trail is to bring people to the coast. Where shoreline structures prevent passage along a beach or bluff, trail users will be compelled to use routes farther inland, perhaps beyond the sight and sound of the sea. One of the challenges for Coastal Trail proponents will be to find a balance between coastal property owners’ rights and the rights of the rest of California’s residents and visitors to access and enjoy the coast.
Public and Quasi-Public Development

Both the United States armed forces and various privately or publicly owned utilities occupy large portions of the coast from which the public is excluded, largely because of concerns about security. Diablo Canyon Power Plant, Vandenberg Air Force Base, Point Mugu Naval Air Weapons Station, and Camp Pendleton Marine Corps Base are some of the largest coastal landholders in this category, occupying significant swaths of oceanfront.

In these situations, State agencies need to work in cooperation with public or private landholders to provide the maximum degree of public access that is consistent with security requirements. Although access may not be possible in the foreseeable future, a dialogue must be maintained, so that if an opportunity does arise, the agencies will be ready for it. This approach has proved successful on Monterey Bay: the U.S. Army is in the process of turning over Fort Ord to the State Parks Department.

Conflicts among Users

Hikers, joggers, bicyclists, equestrians, wheelchair users, roller-bladers, and others seek improved coastal recreation opportunities. Every effort will be made to include all user groups and make the California Coastal Trail as inclusive as possible. However, not all areas will be able to accommodate all modes of recreation. Topography and other natural features will impose some constraints and in some places only a footpath may be possible.

In many areas it should be possible to accommodate different modes of use through establishing separate routes, thus reducing user conflicts. For example, in Marin County, the proposed Cross-Marin Trail from Point Reyes to the Golden Gate Bridge is being promoted by bicycle advocacy groups as a solution to the restriction on vehicular use within the Point Reyes National Seashore wilderness area. In Sinkyone State Park, the wilderness designation limits access to the trail near the shore to hikers and equestrians but, in keeping with the “braided trail” concept, a primitive roadway along the rugged hills can provide a parallel course for mountain bikers. In areas of the south coast, the sandy beach may be the preferred route for hikers, while proposed rails-to-trails conversions provide a near-shore multi-use facility.

Specific limitations on trail uses are generally the responsibility of local management entities, whether federal, State, or local agencies. In developing the Coastal Trail system, the State can support these management efforts by providing assistance with user education, assisting enforcement efforts, and developing sufficient facilities to meet a wide range of user demands.

Where multiple modes of use are permitted along a single route, public agencies should seek the involvement of user advocacy groups to disseminate
information about rules and resource constraints. Public education and peer pressure are likely to be the most effective means of keeping the traffic within acceptable environmental parameters and encouraging respect and courtesy along the trail.

**Interagency Coordination**
Maintaining interagency coordination is essential if the Coastal Trail is to be completed successfully. Core participants in the planning process will need to maintain communications with local jurisdictions, park districts, and land trusts who are, and will be, implementing trail projects. The existence of many interested groups can be advantageous to seeing a project completed, but it can also cause misunderstandings and delays if communication is not maintained. Ultimately, the best Coastal Trail alignment will be one that includes all interested parties in the planning process.

**Railroad Rights-of-Way**
Conflicts arise when public trails must cross railroad rights-of-way to reach the shoreline, and at many locations existing tracks create barriers to legal access. Railroad operators, aware of safety and liability issues, make great efforts to ensure that trains will not endanger people or property, frequently seeking to maintain physical barriers and generally resisting new grade crossings. To facilitate access along the coast, the possibility of establishing more railroad crossings needs to be investigated. Engineered structures enabling nonmotorized passage over or under the railroad are expensive, but may also be the safest alternative.

At the same time, adaptation or conversion of railroad rights-of-way may provide unique opportunities to develop continuous paths for nonmotorized travel at relatively low cost. Local efforts are now under way to convert some of the coastal

*Crossing rivers on a railroad trestle may be hazardous to walkers.*
railroad rights-of-way to recreation trail corridors, with potential major adaptation projects under consideration in Santa Cruz, Orange, and San Diego Counties.

The Americans with Disabilities Act

The California Coastal Trail is a public facility and therefore must comply with the Americans with Disabilities Act (ADA). The federal Access Board, the agency responsible for developing ADA accessibility standards, is currently working to develop guidelines for outdoor recreation facilities. The Access Board has had some difficulty in establishing ADA design guidelines for trails, especially in seeking to balance the need for man-made improvements that improve access with the desire to maintain the natural features of trails. In 2003, the Access Board is expected to release its outdoor recreation guidelines for public comment and will include with them an analysis of the costs and benefits of implementing the proposed guidelines. In the absence of formal guidelines, new Coastal Trail segments should be
designed to provide access to multiple users where topography permits, and signs should provide information regarding the physical condition of the trail ahead. Information such as slope, surface type, and width can tell users whether the trail meets their accessibility needs. This information should be collected and disseminated for new Coastal Trail segments as they are completed.

**State Highways 1 and 101: The California Department of Transportation and the California Coastal Trail**

The California Department of Transportation (Caltrans) has been providing infrastructure for the movement of the state’s populace and commerce for over 100 years. Today’s transportation system, owned and maintained by Caltrans, has evolved from dirt supply roads used by California’s miners and merchants in the early 1850s into a 15,000-mile network throughout the state, supporting both motorized and nonmotorized travel.

As the California State Highway system provides a continuous coastal route along Highways 1 and 101, the Coastal Trail will provide a continuous coastal route for nonmotorized travel. Although the objective of the Coastal Trail is to provide a non-highway route, in some areas along the coast there are very limited opportunities to develop any trail outside of the existing roadway corridor. The limitations may be due to topography, existing private development, or environmental sensitivity. In cases where State Highways provide the only feasible alternative for continuous travel along the coast, it is essential that trail advocates and parks agencies work cooperatively with Caltrans to develop solutions that will support all modes of travel. These solutions may be varied, ranging from shoulder improvements along State Highways 1 and 101 to the...
development of a separated, off-road facility for nonmotorized users within a Caltrans right-of-way.

Caltrans has been very supportive of nonmotorized users along State facilities and has worked to establish safe travel conditions for all users. Projects include the Pacific Coast Bicycle Route, which identifies a route for bicyclists from the Oregon border to the Mexico border along existing coastal roadways. Additional support of alternate modes of transportation is evident in the publication of “Accommodating Nonmotorized Travel” (DD-64) and other documents providing guidelines for signing and design of nonmotorized facilities.

There is also significant State and federal transportation legislation that allocates transportation funds to support infrastructure for nonmotorized travel, in particular the federal Transportation Equity Act for the Twenty-First Century ("TEA-21").
**Coastal Bicycle Travel**

**CHRIS MORFAS**  
*Executive Director, California Bicycle Coalition*

*While many trails provide useful recreational bicycling opportunities, cyclists traveling along the coast are best served by ensuring that roads accommodate them properly and that motorists are encouraged to share the road with them.*

Recreational trails can serve families that enjoy short bike rides as part of car trips. Paved trails should meet Caltrans standards, so that bicyclists can safely share those facilities with joggers, skaters, parents with baby strollers, etc. Generally, unpaved trails can be enjoyed by both bicyclists and hikers if this dual use is expected and approached with courtesy by all. Signs indicating destinations, points of interest, and approaching road intersections are very helpful.

Improving coastal roads to include bicyclists is challenging. While many urban streets or rural highways can be provided with a wide outside lane, bike lane, or shoulder, efforts to widen coastal roads—frequently located within or adjacent to sensitive natural areas—can be enormously expensive and environmentally undesirable. Nevertheless, many sections of State Highway 101 and State Highway 1 could be made safer for bicyclists, and California can see some well-designed examples of how to do it along Highway 101 on the Oregon coast.

Perhaps the most cost-effective way to enhance coastal bicycle travel would be by modifying the behavior of motorists. Reducing speed limits to enhance the safety of pedestrians and bicyclists, permissible under California law, could

*Parts of Caltrans’s coast-long Pacific Coast Bike Route will serve as Coastal Trail bicycle paths.*
establish a more cooperative roadway environment.

Attitudes matter, too. Bicyclists traveling along the coast tend to be highly skilled and very capable of safely sharing roads with motorists, so long as motorists recognize a bicyclist’s right to use the roadway. Travel lanes on coastal roads are often narrow, and the California Vehicle Code allows a bicyclist to use the full travel lane if that lane is too narrow for a motorist to pass a bicyclist without leaving the lane. The recognition by motorists of the need to share the road is especially important for southbound bicyclists who, if they fall off the right side of the road, may never be heard from again. The role of law enforcement in reminding motorists that bicyclists do indeed belong on roadways is vital. In most instances, as long as motorists are willing to slow for a few seconds to execute a safe pass, bicyclists and motorists can both safely enjoy the wondrous beauty that is the California coastal experience. For more information on this topic, you can reach the California Bicycle Coalition at www.calbike.org.

The Coastal Trail Should Include Equestrian Uses

RUTH GERSON
President, Santa Monica Mountains Trails Council

Equine trails groups have been involved for many years in advocating for expanded opportunities for access to public lands. The equestrian community can support the proposed California Coastal Trail if all agencies concerned with designing and completing the trail will bear in mind and plan for the needs of horses and riders.

Advocates for trails should endorse the effort to develop a multi-use trail. If the California Coastal Trail is presented as a hiking trail that will consider other trail users as an afterthought, then the project has a built-in bias. To be open-minded to suggestions for a true multi-use Coastal Trail, you need to honestly consider the range of uses typical of a multi-user facility, with the most commonly accepted ones being hiking, bicycling, and horseback riding. Other types of trail users may also need to be identified and accommodated.
To address the needs of equestrian users, the Coastal Trail should provide:

- Ready access to the Coastal Trail from local feeder/connector trails, including wide dirt shoulders along local roads and roadway underpasses;
- Trailhead parking that is a short distance from the trail and offers safe access to the trail;
- Parking facilities that are large enough for trucks and trailers, as equestrians cannot access the trail if they cannot park their rigs;
- Opportunities for overnight camping along the trail, so that users may fully enjoy the experience of sunrises and sunsets, marine vistas, and wildlife, without having to drive their vehicles every day;
- Trailheads that are not paved and are not excessively rocky or slippery;
- A trail that is away from the sounds and dangers of roads and major highways as much as possible; and
- Connections with other trails systems that have been designed to accommodate equestrian use, including the ones already recognized for their scenic and historic values, such as the Juan Bautista de Anza Trail, the Santa Monica Mountains Backbone Trail, and the California Riding and Hiking Trail.

Another important consideration for developing the Coastal Trail would be to emphasize continued public access to lands that are already in public ownership. Where County Parks, State Parks, and Federal Parks already have land along the coast, it would be advantageous to align the trail through those public lands.

As the Coastal Trail project moves along, public hearings should be held with plenty of advance notice to encourage attendance. The public benefits from attending presentations by the responsible agency, and everyone benefits from the discussion that ensues from those presentations.

The Santa Monica Mountains Trails Council has been involved for 30 years with expanding public access in the Santa Monica Mountains, working closely with California State Parks, the Santa Monica Mountains Conservancy, and the National Park Service. We appreciate the opportunity to add the voice of the equestrian community to the effort to develop and maintain a public trail system along the California coast.