Little River Trail Feasibility Study

Final

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Prepared for the State Coastal Conservancy

By the Natural Resources Services Division of

Redwood Community Action Agency

Little River Trail Feasibility Study

Thank you to the State Coastal Conservancy, community members and agency staff for providing guidance throughout the planning process. Your participation and contributions are vital to realize the vision of the Little River Trail.

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Executive Summary

The Little River Trail Feasibility Study (LRTFS), funded by the State Coastal Conservancy, analyzed potential non-motorized trail alignments from the southern end of Scenic Drive across the Little River to Clam Beach Drive. Creating a trail connection along this stretch of Humboldt County coastline would close a key gap in the California Coastal Trail (CCT) currently separating the communities of Westhaven and Trinidad from the Hammond Coastal Trail and Humboldt Bay communities. This trail connection to improve mobility options and recreational opportunities has been a priority for local residents, trail advocates and local and state agencies for almost three decades.

The Little River project area is rich in flora, fauna, culture and history. The LRTFS examined trail alignment opportunities and constraints on the ground, researched environmental considerations and cultural histories, and held thorough discussions with cooperating agencies, local Tribal Historic Preservation Officers and the interested public. A preferred alignment and bridge crossing was recommended that offers scenic vistas and a direct trail connection separated from Highway 101 for all non-motorized users while limiting the disturbance of culturally significant and environmentally sensitive areas. A 30% design plan was developed for widening the existing Little River Bridge to include a separated trail crossing.

The Little River area has additional opportunities for habitat enhancement and public access surrounding the Little River estuary. The LRT alignment traverses publicly owned properties. However, the LRT is adjacent to a 14-acre private parcel, owned by Green Diamond Resource Company, located just south of Scenic Drive, which would impact the development of the LRT. Green Diamond Resource Company is interested in selling the property to a public or non-profit entity. With the support and participation of Green Diamond Resource Company and as part of this study, the parcel was appraised at market value and its development potential was analyzed. The appraisal estimated the market value of the parcel to be $120,000. The appraisal determined that the highest and best use of the property would be for recreational use, concluding that the development of a single-family residence would be impractical but not impossible.

The LRTFS also examines potential cooperative trail management opportunities, regulatory requirements, funding opportunities and other next steps in order to realize the vision of a completed Little River Trail. The study also outlines potential trail support facilities, including parking areas, signage and trail interpretative themes to enhance the experience along the future trail corridor. Finally the LRTFS examines how best to build local support and momentum to advance the completion of this significant segment of the California Coastal Trail and Humboldt County's regional trail network.

1. Project Purpose and Goals

The Little River Trail Feasibility Study aims to recommend a preferred alignment for a non-motorized trail connection across the Little River to create a contiguous segment of the California Coastal Trail (CCT) from Arcata to Trinidad. Completing this section of the CCT would enhance a unique section of the Humboldt County coastline, improve transportation and recreation opportunities for local communities and enhance existing public access areas by creating connections that encourage a wider variety of users.

Project Background and Purpose

Humboldt County has some of the most scenic and rugged coastline in the state, from the towering trees and cliffs overlooking the coast in Redwood National Park to the serene lagoon bars and beaches near numerous river mouths. The Humboldt County coastline presents numerous opportunities for outdoor recreation, environmental conservation and linking communities. However, there are many challenges in connecting communities and public lands along the coast including rugged topography, extensive private property, trail management challenges and limited north-south public routes.

The Little River area lies north of Humboldt Bay and south of Trinidad, between the heavily frequented public beaches of Clam Beach and Little River State Beach to the south and Moonstone Beach to the north. Highway 101 serves as the only public road over the Little River and along this stretch of Humboldt County coastline. A non-motorized trail connection over the Little River to connect Humboldt Bay communities to the Hammond Trail has been of great interest to local residents and trail advocates for decades. A trail crossing the Little River would also close a key gap in the California Coastal Trail.

The California Coastal Trail (CCT) aims to be a continuous stretch of publicly accessible trail along the state's coastline from Mexico to Oregon. In 2003 the State Coastal Conservancy, directed by California State Legislature SB 908, produced *What Still Needs to be Done: Completing the California Coastal Trail*. This document noted sections of the proposed Coastal Trail that "Needs Substantial Improvement." One of these was the Little River Bridge crossing, and the connection between Scenic Drive and Clam Beach Drive.

Currently, bicyclists and pedestrians have limited options traveling south from Scenic Drive in Westhaven and must use the Highway 101 bridge to cross Little River, which is an unappealing and challenging endeavor for most. The on-ramp to Highway 101 from the south end of Scenic Drive is not conducive for bicyclists as they are constrained on one side by a guardrail and on the other side by cars entering the freeway with a short on-ramp merging lane and limited sight distance. Private property to the east of Highway 101, rugged hillslopes and the mouth of the Little River have previously presented logistical constraints to developing a separated non-motorized trail along this section of coastline.

Despite these constraints, the opportunities for a multipurpose trail connection at Little River are numerous. State Parks maintains Little River State Beach just south of Little River and includes the parcel just north of Little River. The Hammond Coastal Trail, the premier multipurpose trail on the North Coast that connects south to McKinleyville and Arcata, has its northern terminus at Clam Beach just south of Little River State Beach. Bike lanes and wide shoulders on Clam Beach Drive provide safe connectivity for cyclists to the Crannell Road overpass just south of the Highway 101 bridge over Little River. In addition, State Parks recently completed a key link in the CCT for hikers and equestrians through Little River State Beach from the Hammond Coastal Trail to the south bank of the Little River. State Parks also built two new trailhead parking areas as part of this project, with one designed specifically for equestrian trail users, which may serve as a trail support facility for the Little River Trail. These recent trail improvements leading to the south bank of the Little River present a great opportunity for connections to the proposed Little River Trail.

Green Diamond Resource Company (GDRC) owns a parcel north of Little River between State Parks property and the southern terminus of Scenic Drive that has the potential to add increased estuary access and serve as a potential route for the LRT. GDRC has demonstrated significant interest in selling the property that comprises approximately 14 acres lying between Highway 101 and the Little River. Besides serving as a potential route for the Little River Trail and providing unique coastal access along the Little River estuary the GDRC parcel offers habitat restoration and viewing opportunities. This study also looks to determine the parcel's development potential and the cost to acquire it through an appraisal of the property.

To the north of the proposed Little River Trail, Scenic Drive is a well-used route for bicyclists and pedestrians heading north to Trinidad and provides a low-auto traffic route for the CCT with stunning views of the coastline and California Coastal National Monument (CCNM) sea stacks. Scenic Drive also provides access to many designated coastal access points and beaches, several of which are operated and managed by the Trinidad Coastal Land Trust (TCLT).

The Little River Trail (LRT) will serve as a vital link between isolated communities, enhance access to and appreciation of numerous scenic and natural areas and complete an important connection in the statewide California Coastal Trail (CCT). The LRT will enable a non-highway non-motorized transportation option for residents in Westhaven, Trinidad and the Humboldt Bay communities. The LRT will provide a link between the Hammond Coastal Trail and Scenic Drive and Patrick's Point Drive, creating a continuous non-highway route for touring cyclists from Arcata to Patrick's Point State Park. With the rugged nature of the Humboldt County coastline, non-motorized mobility options between coastal communities are very limited. Currently, confident cyclists can use the shoulder on Highway 101 but this is not safe or inviting for families. Seeking completion of key Coastal Trail segments through Humboldt County will ensure progress towards a statewide vision and provide greater mobility options for local residents.

In addition to adding mobility options to the Humboldt Bay communities, a completed Little River Trail would further the quality of life for residents and add to the opportunities for visitors to the area. Increasing access to the Little River estuary and connecting Little River State Beach to Moonstone Beach provides a more enticing coastal experience. By increasing connectivity and adding non-motorized trail options that span from Arcata to Trinidad, the Little River Trail can create the incentive necessary for tourists to stay that 'extra day'. The *Humboldt County Coastal Trail Implementation Strategy (2011)* estimated tourism demand for the California Coastal Trail through Humboldt County at 661,000 local trips and 178,000 visitors annually. The completion of more segments of the CCT, such as the Little River Trail, can only be expected to increase tourism potential. Many studies conducted in small towns and rural communities have concluded that connected trail systems have significant economic benefits to nearby communities, generating increased spending in hospitality, service and retail sectors (*Rails-to-Trails Conservancy (2004, 2007)*. The Little River Trail could benefit both the local economy and increase trail options around two locally loved coastal access areas.

In addition to the natural beauty of the coastline and the Little River estuary, there are also many historical, cultural and biological features to be discovered along the trail route. The area from Moonstone Beach to Trinidad is part of the California Coastal National Monument (CCNM) managed by the Bureau of Land Management, and Trinidad has been chosen as the gateway to the CCNM. The Little River Trail crossing and the California Coastal Trail along Scenic Drive and Patrick's Point Drive will be a valuable amenity to offer to visitors interested in exploring the CCNM and the interpretive signs that describe the natural and cultural history of the area. One of the amenities along this trail route is Saunders Park, owned by TCLT and the home of the Trinidad Museum and recently built Trinidad Library, both of which will offer cultural attractions to add to the appeal of the coastal trail.

Goals of the Little River Trail Feasibility Study

The Little River Trail Feasibility Study will emphasize improving access for non-motorized users along this stretch of coastline. The study will result in 1) plans, alternative alignments and concept designs for a priority section of the California Coastal Trail including a 30% design of a Little River crossing and a preferred Little River Trail, 2) develop preliminary cost estimates for engineering, construction and environmental permitting, 3) identification of necessary permits and potential funding sources; and 4) analysis of property or right-of-way acquisition opportunities along the trail alignment and adjacent coastline. The Feasibility Study will:

- Advance the completion of the next significant phase of the California Coastal Trail through Humboldt County
- Improve mobility options for residents of Westhaven and Trinidad to connect with Humboldt Bay area communities and services and for residents from the south to access the Westhaven-Trinidad area beaches

- Enhance appreciation of the Humboldt County coastline and local parks and beaches
- Provide safe alternative transportation to a disadvantaged community (Westhaven)
- Create more access to recreation opportunities and the California coastline, enhancing quality of life for residents and visitors

2. Background and History

Little River Trail Project Area

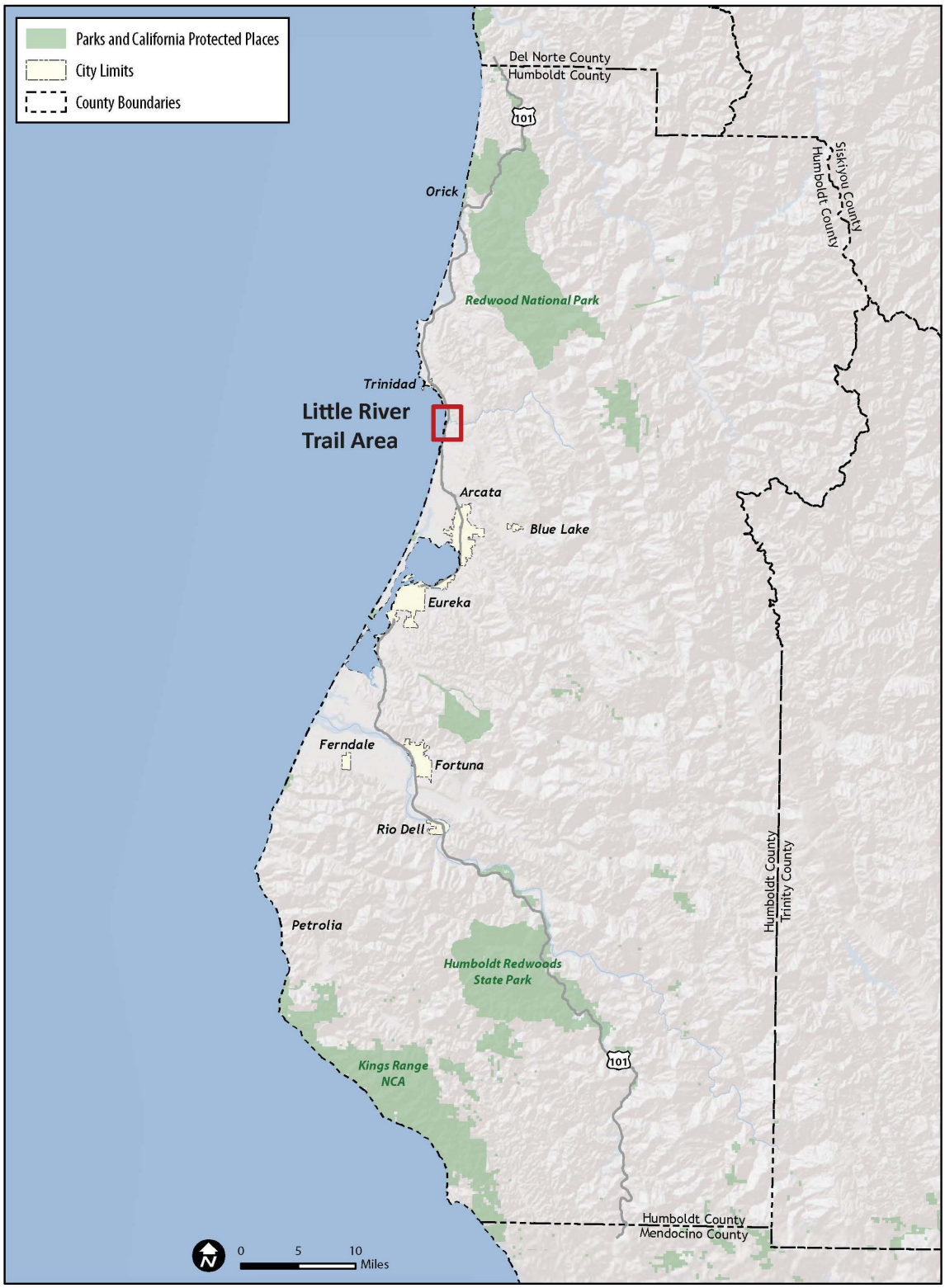

Figure 1 Little River Project Area

Ecological Setting

The Little River Trail's potential alignment meanders through a coastal ecosystem that encompasses several vegetation communities. The northern section of the LRT is characterized by the fill slope of Highway 101 leading to the estuary at the base of the fill slope. The southern section of the LRT is mostly higher dune habitat that has been disturbed during the construction of Highway 101 and the introduction of non-native species. These communities are dominated by one of the following: European beach grass (*Ammophila arenaria*), sedge (*Cyperaceae spp.*), yellow bush lupine (*Lupinus arboreus*), coyote brush (*Baccharis pilularis*), Hooker willow (*Salix hookeriana*), Sitka spruce (*Picea sitchensis*) and red alder (*Alnus rubra*). The yellow bush lupine and European beach grass are non-native species which have severely altered many west coast dune ecosystems and their presence in the LRT project area is considered invasive.

The sedge and Hooker willow is concentrated along swales and wetland areas whereas the Sitka spruce is found mostly in the higher dunes and upland hillslopes within the project area. Other native vegetation occurs throughout the project area such as: the beach evening primrose (*Camissonia cheiranthifolia ssp. cheiranthifolia*), yarrow (*Achillea millefolium*), American dunegrass (*Leymus mollis*), salal, (*Gaultheria shallon*), silk tassel (*Garrya elliptica*), twinberry (*Lonicera involucrate*), shore pine (*Pinus contorta ssp. contorta*), and pink and yellow sand verbena (*Abronia umbellate ssp. breviflora, A. latifolia*). There are also a variety of other exotic plant species occurring in the project area, including: pampas grass (*Briza maxima*), Scotch broom (*Cytisus scoparius*), pennyroyal (*Mentha pulegium*), Monterey cypress (*Cupressus macrocarpa*), and Himalayan blackberry (*Rubus discolor*).

The LRT area provides habitat to many migrating and resident shorebirds, raptors and songbirds. Species in the area include: the sanderling (*Calidris alba*), dunlin (*Calidris alpine*), killdeer (*Charadrius vociferous*), osprey (*Pandion haliaetus*), white tailed kite (*Elanus caeruleus*), white crowned sparrow (*Zonotrichia albicollis*), American crow (*Corvus brachrhynchos*), common Raven (*Corvus corax*), Aleutian cackling goose, several species of duck, and merlin (*Falco columbarius*). In addition, mammalian species such as the black – tailed jackrabbit (*Lepus californicus*) mule deer, (*Odocoileus hemionus*), raccoons (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and many species of rodents can be found in the project area. There is also a small population of feral cats existing within the project area and surrounding habitat.

There are numerous whale observations possible from the Little River area, with the most common being gray whales (*Eschrichtius robustus*), which can be seen just of the coast. Whales can be seen from the project area breaching as they migrate between the Bering and Chukchi Sea to the Gulf of California.

The area from Moonstone Beach to Trinidad is part of the California Coastal National Monument (CCNM) managed by the Bureau of Land Management, and Trinidad has been chosen as the gateway to the CCNM. In addition to the natural beauty of the coastline and the Little River estuary, there are also many historical and cultural features to be discovered along the trail route.

Cultural and Historical Setting

The Little River area was historically a confluence of cultures, as the river served as a border between the Wiyot Tribe to the south and the Yurok Tribe to the north. Both tribes would use the prairie and coastline around Little River as food-gathering areas, camps and villages (Elsasser 1978, in Northwest Information Center Historical Review of the Project Area). Today, the Yurok Tribe, Wiyot Tribe, Trinidad Rancheria, Blue Lake Rancheria and Bear River Band of the Rohnerville Rancheria all have ancestral ties to Yurok and Wiyot tribes in the Little River area. According to Tribal Historic Preservation Officers (THPOs) from these tribes with Wiyot and Yurok ancestral ties, the project area could be home to burial sites and more than likely fish camps along the Little River. The river was a major source for Eulachon, or Candlefish, which made up a large part of the diet and trade of the Yurok and Wiyot in the area.

Photo 1 Josephine Beach in boat at mouth of Little River (Source Humboldt State University Library, Humboldt Room Collections, Boyle Collection)

During the 1860s companies of soldiers and armed settlers made their way to the Little River after hearing of Wiyot and Yurok camps along the river's edge. These groups would massacre the people at these camps, often leaving no one alive. One survivor of these massacres, and of

the Indian Island massacre, was Josephine Beach. Born, Kaquaish, the daughter of a Wiyot Chief, she was married to Charles Beach and settled at the foot of the Little River. It was on their property that a Little River School was located from approximately 1900-1909, which served the burgeoning lumber company town of Bullwinkle, soon to be Crannell, and the few children in the Trinidad/ Westhaven area. The school later became obsolete after a new one was built in the town of Crannell. Although the exact location of the school is not known, the Beach property, on which the school was built, was comprised mostly of the project area.

Photo 2 Little River School 1908 (Source Humboldt State University Library, Humboldt Room Photograph Collections Boyle Collection)

Timber began to be harvested in the area during the late 1800s. John Diedrick Bullwinkel settled on the Little River, about 3 miles east of the project area, in 1878 claiming and homesteading government land. The forest began to be harvested in larger quantities when Levi Crannell of Toronto purchased the Bullwinkel property in the early 1900's. Crannell then started the Little River Redwood Company. By 1921 this company merged with the Hammond Company to become the Hammond and Little River Redwood Company, where an extensive local system of railroad tracks was used to haul harvested timber out of the Little River Valley. A section of this railroad at one time traversed very closely to where the current Highway 101 bridge now stands within the project area. However in 1945, a devastating fire ravaged much of the Little River Rail System owned by the Hammond Company, signaling the beginning of the end for the town of Crannell. In 1956 the town and surrounding timber lands were sold to Georgia Pacific, which couldn't find much value in maintaining the mill and eventually razed the housing in 1969.

In 1972 Georgia Pacific was ordered, due to antitrust violations, to dispense with certain assets including the Town of Crannell. The Louisiana-Pacific Corporation was formed and maintained the town as storage for maintenance vehicles until they sold the property to Simpson Investment Company in 1998. In 2004 Simpson Investment Company split into two divisions, one of which became Green Diamond Resource Company, which owns much of the property in the Little River watershed today.

Although the project area is rich with cultural and historical significance, previous road building and natural shifting of the river mouth has changed the area significantly. Historical research and consultations with several THPOs indicate that the majority of the trail alignments studied here traverse areas that have largely been disturbed by the building of Highway 101 and Highway 1 that preceded it. Highway 1 had more curves than the current alignment of Highway 101, following the natural contours of the hills, which at times brought it further westward and lower in elevation. This closer proximity to the estuary was partially responsible for the destruction of some sections of the previous Highway 1 alignment. Portions of old Highway 1 pavement are still visible below the current highway fill slope. The river has also changed its course over the years, most recently in the early 1980s when the estuary moved northeast and began to look as it does today. Thus, the Little River Trail alignment traverses areas that have had significant prior disturbance, and are less likely to contain known cultural or historical resources.

The current highway bridge has also gone through several iterations. The existing bridge, built in 1944, is a 374-foot-long, 7-span, cast-in-place reinforced concrete tee-girder on concrete pier walls supported by precast concrete piles. The bridge was originally constructed as a two-lane bridge to replace an older downstream highway bridge. In 1960, a second two-lane bridge, using the same span geometry and structure type, was built adjacent to and upstream of the existing bridge to handle northbound Highway 101 traffic and the original bridge was utilized for southbound traffic. The southbound Highway 101 bridge was then widened in 1992, and both bridges were joined and widened in 1996 as part of a seismic retrofit project.

Photo 3 Little River Highway Bridge Date Unknown (Source Humboldt State University Library, Humboldt Room Photograph Collections, Ericson Collection)

The Northwest Information Center, which conducted the California Historical Resources Information System (CHRIS) report (see Appendix A) for the Little River project area, did determine that the area contains three recorded archaeological resources and several isolated finds. Next phases of the Little River Trail project will retain a professional archaeologist to assess potential resources and provide project specific recommendations. Project proponents should stay in close communication with Tribal Historic Preservation Officers to inform the process as the Little River Trail moves forward.

Little River Trail Users

The Little River Trail area has amenities that appeal to many trail users. Cyclists pass by from all over the country and beyond on their way along the Pacific Coast Bike Route (PCBR). Equestrians frequent the Little River estuary after starting from Clam Beach on their way to Moonstone Beach. The area sees frequent use from runners, birders, beachcombers and walkers who all spend time in the surrounding area and would likely be users of a new trail.

Therefore there are ample opportunities to expand trails and public access opportunities in phases – with a main Little River Trail connecting over the river and also nature study opportunities along the river estuary. The first phase will entail a paved, multipurpose trail connecting the Hammond Trail to Scenic Drive. This connection would serve the need for all users, including cyclists wishing to commute south from Westhaven or pedestrians wanting to

cross to Moonstone Beach from Little River State Beach. In addition commuters from McKinleyville, Westhaven and Trinidad would benefit from an off-highway trail option.

Equestrians frequently use the Little River State Beach trails and beach to cross the river during the low flow season to Moonstone Beach. This river crossing currently works well for equestrians and has attracted riders throughout the region to enjoy riding on this long stretch of beach. Cyclists riding from the Hammond Trail or from Scenic Drive are currently diverted onto the highway between Crannell Road and Westhaven Drive going north or Scenic Drive to Crannell Road going south. Cycling along Highway 101 here is relegated to experienced cyclists as this highway stretch requires sharing the road with highway traffic traveling at or above 65 mph. Although cyclists and pedestrians do cross the Little River on the highway, the route is less scenically appealing and potentially dangerous and thus not signed or encouraged as a section of the CCT.

In addition to the main trail between Scenic Drive and Crannell Road there is the potential for a second phase of spur trails off of the main trail. An alternative route, the N3 option, using crib steps at the north end to connect the N3 spur to the main trail, would provide separation between cyclists and walkers, which would reduce user conflicts on the steep section of the trail between Little River and Scenic Drive.

These trails would likely be natural surface, and could offer loop hikes throughout the estuary and even potentially beach access for equestrians and hikers. This second phase of public access improvements could be completed as time and funds were available, enhancing the potential for the Little River as a destination point for residents and visitors alike. This phased approach could help further the public access goals of both the Little River State Beach and Clam Beach and Moonstone Beach County Parks and provide a valuable asset to economic enterprises in the Trinidad area including the Moonstone Bar and Grill and Cher-Ae Heights Casino.

Previous Planning Efforts for the Little River Trail

An effort to develop a non-motorized, paved-multipurpose trail connection across Little River has been ongoing for over 27 years. There has been much interest from the Westhaven and Trinidad communities to have safe off-highway access south to connect with Humboldt Bay communities. Highway 101 is the only public road across Little River, and although pedestrians and bicyclists are allowed on this stretch of highway to cross the river, there are not safe, separated facilities to encourage non-motorized users.

The Little River Trail connection has been supported as a priority project along the Humboldt County coastline in many previous planning efforts including the *Humboldt County Coastal Trail Implementation Strategy* (2011) and the *Hammond Coastal Trail Extension Analysis: From Trinidad to Fortuna* (2001). Community scoping meetings for the *Humboldt County Regional*

Trails Master Plan (2010) also identified extending the CCT across Little River as a key priority for residents through Humboldt County. A trail connection over Little River has also been included in the priority projects list in Humboldt County Association of Government's Regional Transportation Plan (RTP).

The *Hammond North Coastal Trail Analysis* effort took a macro-level look at alternatives to cross Little River, preliminarily looking at options on the west and east side of 101. An east side route was examined that would cross the Little River north of the Crannell Road Highway 101 exit, east off of Little River Drive, over a privately owned bridge. This alternative had many constraints, not least of which was the lack of support from the property's owners. Additional constraints include encroachment of Caltrans right-of-way at the Little River. The private bridge crossing would also require structural improvements. Portions of this private land, and this proposed trail route, would also be within the floodplain and subject to saturation and flooding from even moderate river flows. An undercrossing of the Highway 101 bridge would present both right-of-way and engineering challenges. A detailed hydrologic study would be necessary to determine if an underpass trail structure was feasible given the possibility of high-water flows. Due to private property concerns and topographical and wetland constraints a Little River Trail route east of Highway 101 was determined to be much less feasible.

To improve accessibility of the Humboldt County coastline and mobility for Humboldt County residents, the State Coastal Conservancy (SCC) partnered with Redwood Community Action Agency (RCAA) in 2009 to complete the *Humboldt County Coastal Trail Implementation Strategy,* which sought to recommend CCT alignments throughout Humboldt County, prioritize recommended trail segments, and provide assistance to local jurisdictions and organizations moving CCT segments forward. The *Implementation Strategy* now serves as a guide for local jurisdictions and project stakeholders to help bring the vision of the Humboldt CCT to fruition. The *Implementation Strategy* dedicated additional funds to the Little River Trail segment as a priority project because it was seen that with some additional planning there were not major hurdles to implementation. This *Implementation Strategy* recommended multiple agencies collaborate to identify a working Little River Trail alignment and crossing opportunity, a cooperative operations and maintenance agreement and potential funding opportunities for the trail and property acquisition.

During the *Humboldt County Coastal Trail Implementation Strategy* process, RCAA staff pursued discussions with State Parks, Caltrans, and Coastal Commission staff regarding possibilities for a non-motorized crossing of the Little River. As Caltrans previously stated that the current Little River Bridge is under-designed for the addition of a non-motorized pathway, RCAA pursued the possibility of a separate non-motorized bridge or seasonal bridge.

The Little River Trail connection has also been supported as a priority project along the Humboldt County coastline in other previous planning efforts including the *Hammond Coastal Trail Extension Analysis: From Trinidad to Fortuna* (2001) and community scoping meetings for

the *Humboldt County Regional Trails Master Plan* (2010). The latter also identified extending the CCT across Little River as a key priority for residents through Humboldt County.

Little River Trail Task Force

In the late 1980s and early 1990s, a group of concerned individuals worked with Caltrans to try to incorporate a safe bicycle and pedestrian crossing option into the Highway 101 bridge upgrade plans. This group also examined opportunities for a separate non-motorized bridge. Unfortunately, the highway bridge was ultimately updated without a separated facility for non-motorized users. At the time, there were fewer examples along the north coast of successful bridge projects with a separated bike/pedestrian facility. Fortunately, these separated bridge facilities are now standard for Caltrans facilities. In the early 2000s another effort yielded that a cantilever trail on the existing highway bridge would be infeasible due to possible weight limitations of such a structure on the existing bridge footings.

Following these previous efforts, these individuals gathered other interested persons and agencies and created the ad hoc 'Little River Trail Task Force' (LRTTF) comprised of State Parks, Green Diamond Resource Company (GDRC), Caltrans, Trinidad Coastal Land Trust (TCLT), Natural Resources Services Division (NRS) of Redwood Community Action Agency, Madrone Enterprises, County of Humboldt, and HCAOG. The Task Force met in 2008 and learned that recent seismic and structural upgrades to the highway bridge that filled in the middle section of the bridge could enable other separated, non-motorized facility options to be considered on the existing bridge. The LRTTF most recently met in April 2012 to determine next steps for completing the Little River Trail, which included funding this feasibility study for the trail alignment and river crossing and researching acquisition options for the GDRC parcel.

3. Project Approach

The methodology used to determine a preferred trail alignment included review of previous planning efforts, analysis of potential trail alignments and bridge crossing alternatives with frequent consultation and review with stakeholders, and a series of public and agency workshops. The planning context review informed project staff of the invested stakeholders and led to initiating conversations with these stakeholders. Adjacent land owners, Caltrans, Green Diamond Resource Company, California State Parks, Humboldt County, Humboldt County Association of Governments, Wiyot Tribe, Yurok Tribe, Bear River Band of the Rohnerville Rancheria, Blue Lake Rancheria, Trinidad Rancheria, California Coastal Commission, and State Coastal Conservancy were consulted to develop the initial alignments and a greater understanding of potential hurdles to developing the Little River Trail.

With the information gathered from previous planning studies and work done by the LRTTF, project staff conducted multiple field studies to begin to map possible trail alignments. Field analysis included identification of wetland indicator species, best possible grade routes, existing culverts, and utilities. These notes were then used to create alignment maps. These maps were then taken to meetings with agency and public stakeholders where they were further refined.

This process of refining alignments through discussion with agency and public stakeholders continued to generate new considerations that led to new variations in the alignments. The Agency Workshop and the Public Site Visit were both used to further refine these alignments towards a preferred alternative. The preferred alignment and feasibility study findings were then circulated for review amongst stakeholders in the form of the Draft Little River Trail Feasibility Study in January-February 2014.

Planning Context Review

In order to construct a better understanding of a potential Little River Trail this report began with a thorough review of the project area and previous Little River Trail planning efforts. Prior work, interviews and meeting notes from the Little River Trail Task Force (LRTTF) were reviewed. RCAA staff also reviewed the Little River State Beach (LRSB) Restoration and Enhancement Plan, Caltrans' Highway Design Manual particularly Chapter 21 Exceptions to Design Standards, Caltrans' State Route 255 Engineered Feasibility Study, the Humboldt County Coastal Trail Implementation Strategy, and the Moonstone and Clam Beach Master Plan.

The LRSB Plan was integral to gaining an understanding of the goals of State Parks in the Little River area. This plan was also a great resource for review of flora and fauna in the area, particularly for the dune ecosystem on the south side of the river. The plan was also helpful in beginning to understand the Wiyot and Yurok Tribes' cultural and historical concerns in the area. The LRSB Plan indicated that the CCT, from Crannell Road to the Little River Bridge, was to be located along the shoulder of the Crannell Road off ramp and along Highway 101. State

Parks was interested in making sure that the CCT, when completed through this area, did connect with the LRSB. The trail alignments considered south of the Little River do have the potential to connect to the LRSB trail system.

The Clam and Moonstone Beach Master Plan was used as a reference source for flora and fauna of the area, cultural and historic resources, and to better understand how Humboldt County plans to manage and enhance County parks in to the future. The plan helped the project team conceptualize a public access vision for the Little River area that would complement existing public facilities in the area. This document also was integral to our conversations with Humboldt County staff.

The review of Caltrans' Highway Design Manual and State Route 255 Engineered Feasibility Study aided in determining options for routing the trail and bridge crossing within Caltrans right-of-way and possibly on a Caltrans facility. The Highway Design Manual helped the project team understand the design standards that would be expected for a trail and non-motorized bridge facility within Caltrans right-of-way and the possible design exceptions that could be sought to achieve a feasible design. The State Route 255 Study provided example design options for separated, non-motorized facilities on state highway bridges.

The Humboldt County Coastal Trail Implementation Strategy provided valuable context around previous planning efforts for the Little River Trail. The Implementation Strategy also helped establish an understanding of the goals and priorities for the California Coastal Trail in Humboldt County. The LRT has the potential to serve as a local destination and also as an important addition to the Hammond Trail, CCT and PCBR.

Agency and Public Outreach

The community and agency outreach component of this feasibility study intended to bring together the diverse user groups from the community along with the many agencies that have a stake in a Little River trail. The Little River Trail Task Force included many of the key stakeholders and agencies, but had yet to involve adjacent landowners or representatives of the Wiyot Tribe, Bear River Band of the Rohnerville Rancheria, Blue Lake Rancheria or the Yurok Tribe. There were informal discussions with some of these groups, but formal inclusion was desired. During the first few months of this project the Tribal Historic Preservation Officers (THPOs) for each tribe was sent a letter describing the work that this feasibility study was to undertake and inviting them to participate in the agency workshop and planning for the Little River Trail.

RCAA staff identified landowners adjacent to the project area and sent out letters and maps to these adjacent landowners detailing the purpose of the Little River Trail Feasibility Study and its potential geographic scope. Project staff had several phone conversations with adjacent landowners and engaged with others during the public workshop. Discussions with adjacent

private landowners and review of previous planning efforts indicated that there was little support for a trail on the east side of the highway but a lot of interest in a multipurpose trail connection on the west side. This understanding, in addition to the potential for a more scenic experience and more feasible alignment on the west side of the highway, led to the decision to focus efforts on the west side of Highway 101.

An agency workshop was held on July 10, 2013 in order to bring stakeholders together, review preliminary trail alignment options and discuss next steps for the feasibility study and beyond. This workshop brought together the State Coastal Conservancy, Caltrans, RCAA, Trinidad Coastal Land Trust, Green Diamond Resource Company, Wiyot Tribe, Bear River Band of the Rohnerville Rancheria, Madrone Enterprises, Blue Lake Rancheria, Humboldt County Association of Governments, and Morrison Structures and resulted in refined trail alignment options, preliminary trail co-management ideas and next steps for further research. The agency workshop is detailed further in Appendix B.

RCAA staff also conducted a public site visit that took place on October 16, 2013 at Little River State Beach. The event was publicized in the local newspapers and on the radio, hoping to both encourage attendance and to spread awareness of the Little River Trail. This event gave project staff the opportunity to present progress on the feasibility study and to gather input, ideas and preferences on trail alignments from the interested public. Draft maps were provided, along with visuals of bridge designs being discussed. Participants gave feedback in person and on comment cards during the site visit, and others offered feedback through email and phone calls following the site visit. For details of the site visit and public input please see Appendix C.

Photo 4 Participants at the Little River Public Site Visit took a walk with the project team on existing Little River State Beach trails to view the Little River Trail project area and river crossing

Trail Alignment Analysis

The project team used field review, stakeholder interviews, public input and analysis of opportunities and constraints to determine a preferred trail alignment. Multiple field trips to the Little River project area were used to assess and map potential trail alignments using GPS and flags on the ground. Preliminary maps, along with observations of the terrain and plant species observed and a list of opportunities and constraints were then used in the interviews with staff at stakeholder agencies. The input gained from these stakeholder discussions refined the alignments considered, which in turn required further investigation on the ground.

This trail alignment review process was repeated, with both agency and public stakeholders, refining the alignments and furthering the opportunities and constraints lists for each alignment. This alignment vetting process culminated in the public site visit, where two potential trail alignments were presented for the northern section of the trail, three bridge options and two southern alignments. The project team gained significant input from the public site visit which helped refine the analysis of a preferred alignment in the Draft Feasibility Study.

Bridge Crossing Analysis

In addition to the process described for the trail alignment analysis on the north and south sides of the river, the Little River bridge crossing alternatives were given added attention, which

culminated in the 30% design of a preferred crossing. The project team worked with a structural engineering consultant, Morrison Structures Inc., and Caltrans planning and engineering staff to refine the crossing alternatives to three distinct options:

- Modification of the existing highway bridge to accommodate a separated bicycle/pedestrian trail (Bridge Option 1)
- Separated non-motorized bridge within Caltrans right-of-way (Bridge Option 2)
- Separated bridge outside of Caltrans right-of-way (Bridge Option 3)

After examining three distinct crossing options, with several variations possible on the existing highway facility (Bridge Option 1 variations), the project team developed opportunities and constraints for each option. State Parks staff and Coastal Commission staff gave significant feedback to refine the opportunities and constraints for each crossing option. The complete bridge crossing analysis is presented in Appendix D.

Appraisal Process

One of the opportunities that the Little River Trail affords is that it traverses almost predominantly public lands, except for one private parcel held by Green Diamond Resource Company (GDRC). This parcel, the Moonstone parcel, is north and east of Little River in between State Parks property and the southern terminus of Scenic Drive. Since early in the discussion of a Little River Trail, Green Diamond has been interested in collaborating about the intersection of the Little River Trail and this parcel. Green Diamond has voiced that the company would be a 'willing seller' of the parcel, have regularly attended Little River Trail meetings and have been helpful in the acquisition of parcel data. The Moonstone parcel presents a unique opportunity to develop a welcoming trailhead at the north end of the Little River Trail and spur trails from the Little River Trail to the vibrant Little River estuary.

There was a question as to whether the Moonstone parcel was a separate legal parcel or whether it is part of GDRC's property east of Highway 101. GDRC offered to seek a parcel determination from the County to answer the question of the parcel's legal status. At that same meeting, a Caltrans representative suggested that if the parcel described on the deed in 1964 (when the freeway was in the planning stages) is the same as it exists today, a separate legal parcel may have been created. Both GDRC and Caltrans agreed to assist in getting a determination of the parcel status to facilitate connectivity for a potential trail and public access to the Little River estuary. Understanding this parcel's legal status and its appraised value were key components of the feasibility study.

The GDRC parcel is approximately 14 acres, adjacent to Highway 101 and includes some of the Little River estuary and the southern end of Scenic Drive. Besides serving as a potential route for the Little River Trail, this parcel would provide interesting coastal access opportunities along

the Little River estuary and ensure adequate space for parking and signage at the trailhead. The GDRC parcel also holds significant value as a potential for spur trails and as natural habitat.

Figure 2 Approximate location of GDRC parcel

To determine possible trail alignments it was deemed necessary to conduct a survey of the Moonstone parcel to more accurately assess the boundaries between the Moonstone parcel, Caltrans right-of-way and County right-of-way at the south end of Scenic Drive. GDRC worked with project staff to submit a survey request to Caltrans. Eventually, the Caltrans survey placed monuments and flagging along the border between the GDRC parcel and Caltrans' property. These monuments and flags allowed for an accurate assessment of potential trail alignments that could either skirt or utilize the GDRC parcel.

This feasibility study also included an appraisal of the Moonstone parcel. An appraisal of this parcel and determination of its market value allowed for a more thorough understanding of the potential for development, and therefore the threat of a conflicting use being present on this parcel that could impact the Little River Trail and Little River estuary. An appraisal also helped ascertain whether the acquisition should be pursued to advance the long-term vision of public access in the Little River area.

Appraisal Results

The completed appraisal notes that the parcel consists of river, river bar, flood zone, coastal wetlands, undulating sand dunes, and hillside with moderate to steep slopes. The parcel is currently zoned Public Recreation, which is among the more restrictive zones for development purpose. These issues and the requirement for on-site water and septic systems decreases the suitability of building a residence on this property; however, residential development could still be possible. There are electric and telephone lines in the vicinity of the parcel and there is a good ocean view. The appraisal determined the highest and best use, defined as that which is physically possible, legally permissible, financially feasible, and maximally productive, of the property to be for recreational use, which is in accordance with the permitted and allowed use.

The appraisal uses the Sales Comparison Approach to form an opinion of the value of the GDRC parcel. This approach collects and analyses sales data on a variety of properties with similar characteristics to the property being appraised. This approach is limited by the availability, quantity and quality of this data. The appraisal examined five recent, nearby property sales and found an average cost per acre for all five of $8,600.00. Using this Sales Comparison Approach, the appraised value of the approximately 14 acre Moonstone parcel was determined to be $120,000.00. The appraisal results may be inflated due to utilizing sales to private entities. This appraisal gives insight into the potential cost for property acquisition to enhance public access to the Little River estuary, and also the potential for development on the property that could be incompatible with the future Little River Trail. The complete appraisal can be reviewed in Appendix E.

4. Feasibility Analysis of Alignment Alternatives

This section describes the trail alignment alternatives examined and discusses the criteria used in refining these alignments, which eventually led to the preferred alternative. A brief overview of the area and some of the overarching considerations are used as an introduction to the process of determining the alignments. The alignments are segmented into options north of the Little River, bridge crossing alternatives and potential alignments south of the river. Each of these alignments will be reviewed with a list of opportunities and constraints including policy and management considerations.

Major Considerations for the Little River Trail Alignments

The Little River Trail project area contains topographical, hydrological and geological features that were pivotal in determining the alignments. A steep fill slope angling down from Highway 101 towards the Little River defines the northern section. There is also a steep rocky section southwest from the end of Scenic Drive. A flat bench is present at the southern end of the northern trail section, a remnant from old Highway 1. This bench is located out of the flood zone but also contains one parameter wetlands. The flat areas west of the fill slope and old highway bench encompass the alluvial zone, flooding regularly with king tides and heavy storms. These wetlands were considered an area unsuitable for trail placement. South of the Little River the proposed trail is predominantly located in dune substrate previously disturbed by the building of rail lines and highways, including the current Highway 101 and Crannell Road off ramp.

Sea level rise projections also played a pivotal part in determining trail alignments. The California Coastal Commission Draft Sea-Level Rise Policy Guidance (2013) considers the National Research Council Committee on Sea-Level Rise in California, Oregon and Washington (NRC) report (2012) to be the best available science on sea-level rise in California. The report predicts a range of 10cm – 143cm sea-level rise north of Cape Mendocino by 2100. For the purposes of this Feasibility Study the high end of this range was used to determine all potential effects of sea-level rise on the proposed trail alignments.

Figure 3 shows the alignments alongside the predicted 100-year inundation at mean higher high water assuming 1.4 meter sea level rise along this stretch of coastline. Figure 3 uses data from Heberger and Herrera (2009) to visualize the approximate location of the higher end of the predicted sea-level rise range in 2100.

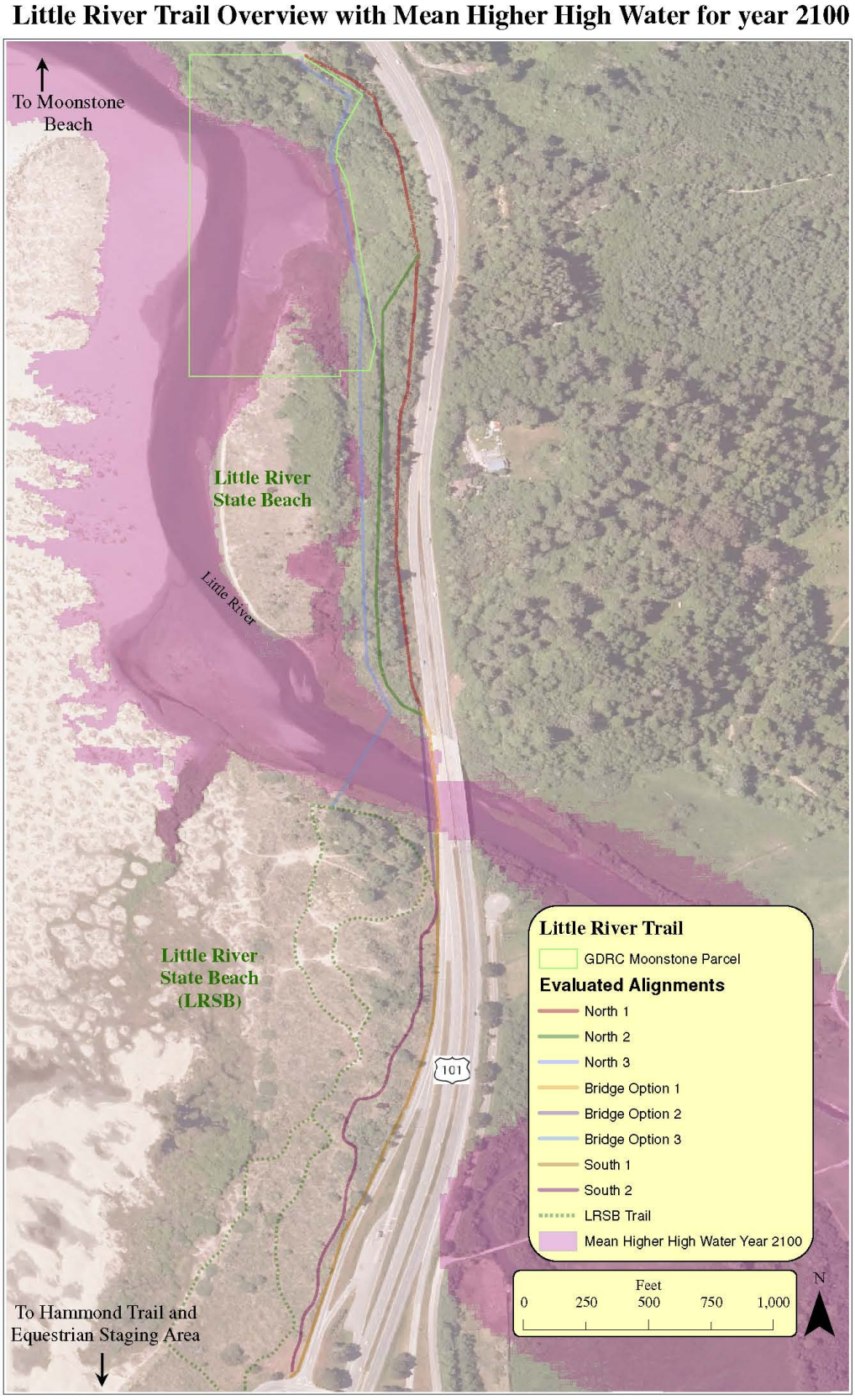

Figure 3 This map shows the trail alignments considered with highest estimated 100 year tide elevation in pink (Source: Sea Level Rise data from Pacific Institute, Heberger and Herrera, 2009)

The review of previous studies determined that the east side of the highway was not feasible for a trail (see Chapter 3 Planning Context Review). Thus, this study focused solely on possible alignments west of the highway. Also, both Caltrans and State Parks requested that trail alternatives include alignments entirely outside of their right-of-way. Each agency wanted to ensure due diligence in trail research before agreeing to a trail in their respective right-of-ways.

Topography and hydrology along the trail alignments were a significant consideration, especially north of the river. A significant rock outcropping and steep terrain heavily influenced the alignments in this section. Although possible to traverse this obstacle using crib steps, this type of trail treatment would not meet the intention of creating a trail accessible to the most users. Therefore, the project team developed trail alignments that headed southeast from Scenic Drive along the fill prism of Highway 101.

Also of concern in the northern section of the trail is the riprap present near the base of the highway fill prism. The boulders that make up this stabilizing element were seen as a feature to avoid and also as a somewhat reliable boundary between upland areas and the areas more prone to flooding and more likely to contain wetland indicator species.

The Little River bridge crossing section of the trail was defined by the existing highway bridge, which could not be adversely effected by any new construction, and the natural hydraulics of the Little River. First, any new proposed structure could not have an adverse effect on the river hydraulics affecting the highway bridge. Second, any new structure would have to have a span and height similar to that of the existing highway bridge to be able to withstand drastic changes in river level.

The southern trail section, from the Little River to Crannell Road was largely influenced by the dune system that abuts the Crannell Road off ramp and the Little River State Beach trail system. The Highway 101 right-of-way encompasses a significant portion of this dune area, which has previously been disturbed from past road building. Working with State Parks, project staff worked towards a Little River Trail that would complement the LRSB system south of the river.

These considerations helped guide the development of initial alignments, which were then refined with a feasibility analysis.

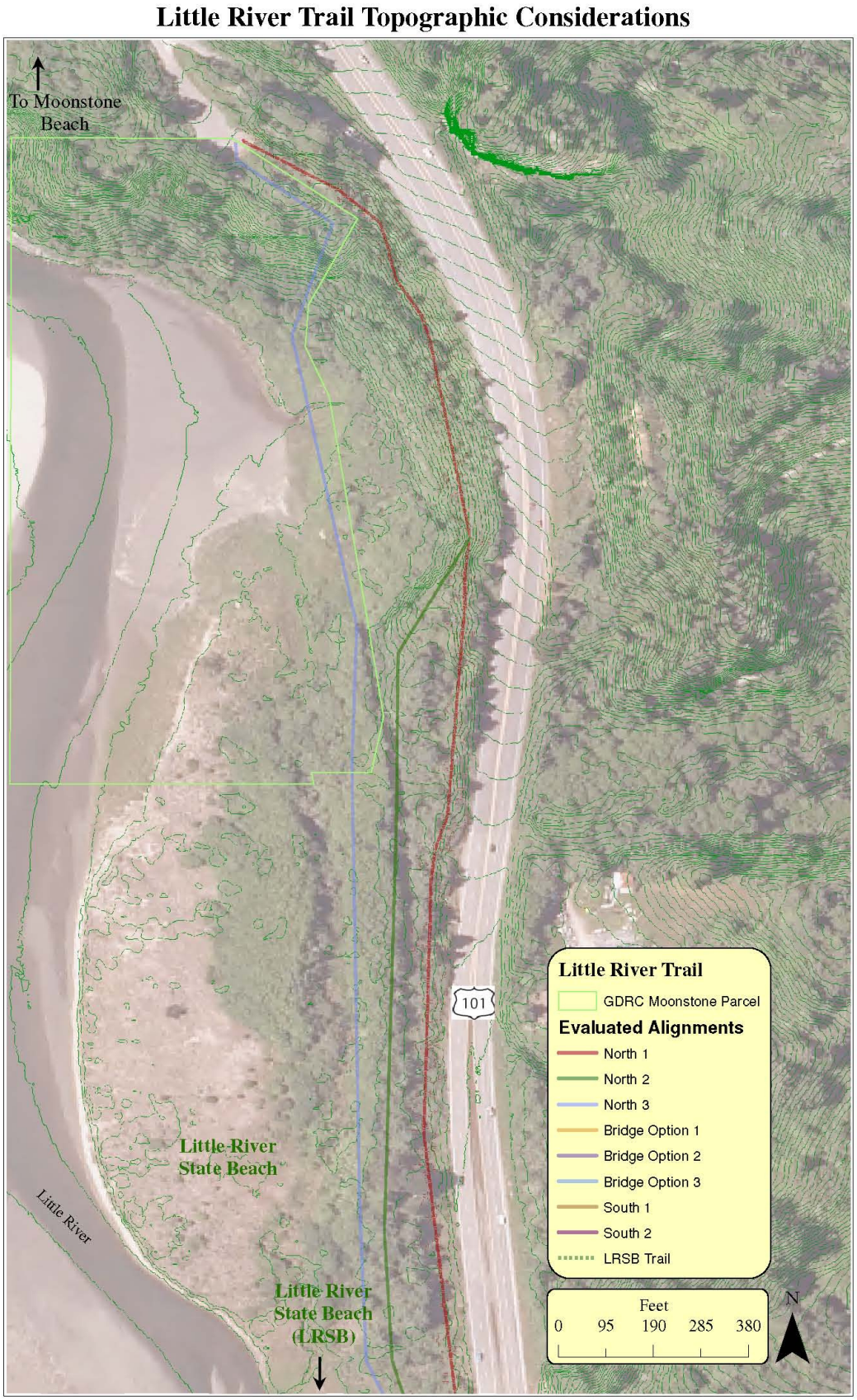

Figure 4 Little River North Topographic Map (source Department of Commerce, NOAA, NOS, CSC. 2012)

Evaluation of Alignments

The period prior to the agency workshop, held in July 2013, saw alternatives developed internally by project staff and vetted with agency staff during one-on-one meetings. The alignments presented at the agency workshop represented a starting point in which to examine the alignment evaluation process. At this point in the evaluation there were two basic alignments based largely on conversations with Caltrans and State Parks staff. An alignment close to the highway for the majority of the trail seemed to be the most practical considering environmental constraints and cost, but in order to justify encroaching into Caltrans right-of-way it was also necessary to examine a trail alignment entirely outside of this right-of-way. The alignments North 1, Bridge Options 1 and 2, and South 1 and 2 represented trail route options within Caltrans right-of-way, whereas alignments North 3 and the existing Little River State Beach trails traversed areas entirely outside of the Caltrans right-of-way. A number of the alignments considered early on in the feasibility study process were determined to be infeasible and not included in further refinement of the alignments; however, some of these alignments are detailed below in order to fully detail the alignment evaluation process.

The agency workshop led to two nuanced options to analyze for a trail on the existing highway bridge that were not considered previously. One option involved revisiting the cantilever trail option as recommended by Caltrans' Headquarters Design Team (Bridge Option 1.1). The second option was the 'lane shift alternative' (Bridge Option 1.2), which would utilize existing bridge width in excess of Caltrans design standard requirements for the trail. This 'lane shift alternative' would shift the driving lanes east on the bridge to enable space for a barrier-separated bike/ped trail on the west side of the bridge. Morrison Structures reviewed the highway as-built designs and concluded that the bridge footings could not structurally support a fully-weighted cantilevered trail structure. Bridge Option 1.2 lane shift alternative, after examination by Morrison Structures, was determined to be more expensive than the bridge widening option (Bridge Option 1.3), requiring extensive road resurfacing and realignment of the existing weigh station and Crannell Road off ramp.

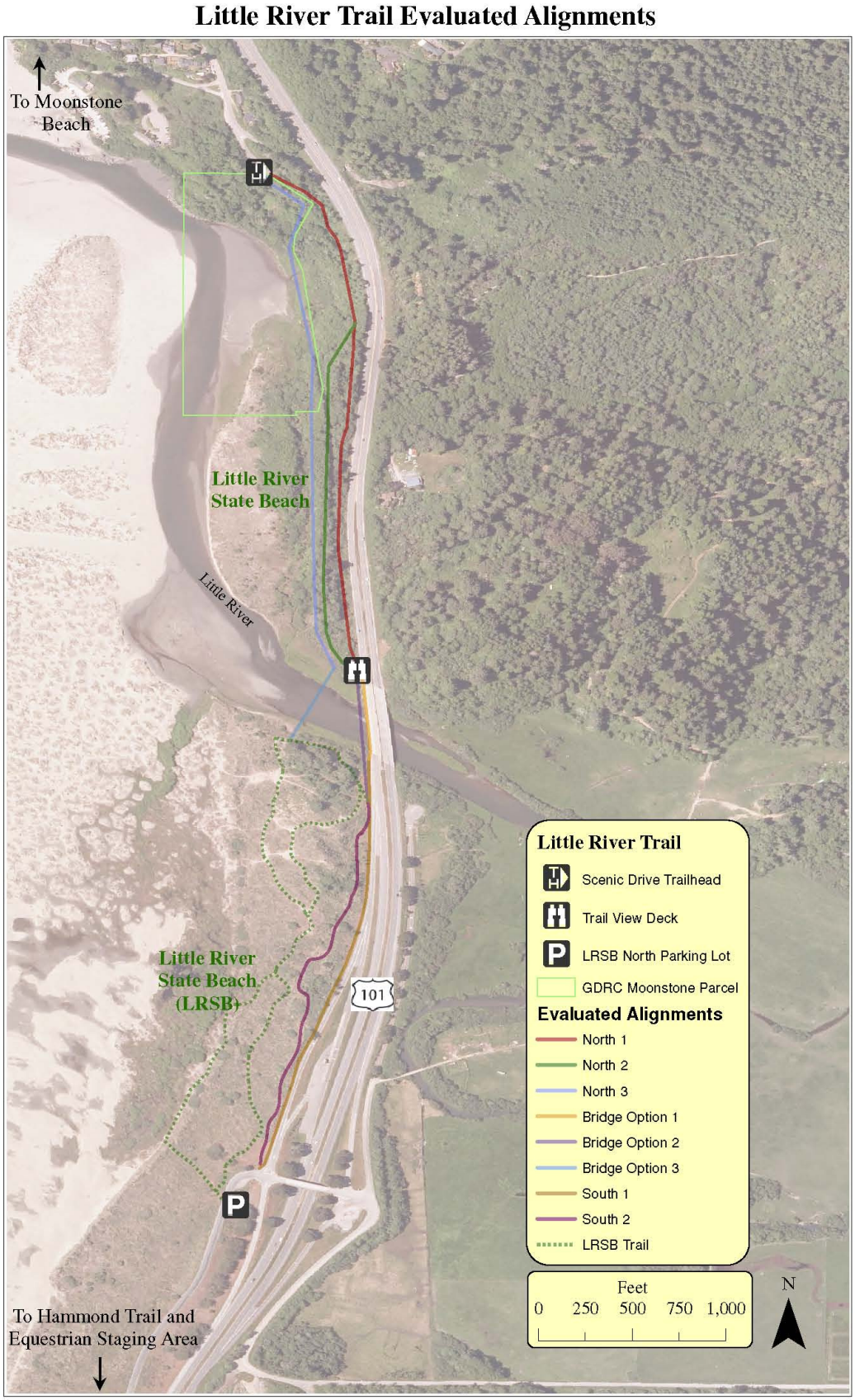

Figure 5 Overview of Evaluated Alignments

In order to thoroughly assess potential trail alignment alternatives, a feasibility analysis was conducted by utilizing a set of evaluation criteria. These criteria were developed by considering the goals of the feasibility study, the opportunities and constraints encountered during alignment research and feedback from agency staff on alignment and management considerations. Alignments were evaluated by these criteria, which helped the project team recommend a preferred trail alignment.

The feasibility analysis criteria included the following:

- Environmental resource protection and regulatory considerations,
- Cultural and historical resource protection,
- Consistency with adjacent public access and land use plans,
- Trail management opportunities
- Topographical feasibility,
- Cost feasibility,
- Scenic experience,
- Safety and Alignment with California Coastal Trail goals,
- Access to all non-motorized users,
- Maintains an ADA grade,
- Outside of floodplain and impacts from sea level rise.

A matrix detailing the evaluation of each alignment with the above criteria is included in Appendix F. These criteria were developed through discussion with the Little River Trail Task Force and incorporated public comment and concern. The opportunities and constraints of each trail alignment below outline the key criteria which aided in the evaluation of the alignment.

Alignment North 1 (N1):

This alignment traverses the highway fill slope within the Caltrans right-of-way from the south end of Scenic Drive until reaching the Little River.

Opportunities:

- Follows a consistent grade parallel to the highway with a steady elevation gain from south to north, enabling the possibility of maintaining a 2% grade per Americans with Disabilities Act (ADA) guidelines
- Less expensive trail construction, less grading needed and fewer environmental impacts along highway shoulder and fill slope
- Direct alignment and consistent grade beneficial for non-transportation uses

Constraints:

- Need to identify trail manager(s) as Caltrans cannot maintain the trail within their right-of-way
- May require additional barriers and/or cyclone fencing between the trail and the highway
- Would require geocell placement, or other form of slope stabilization, for portions of trail construction

Alignment North 2 (N2):

This alignment north of the bridge connects to the old Highway 1 bench. N2 negotiates a steep slope from Alignment N1 down to the old Highway 1 bench. Wetland indicator species found along N2 have developed since the highway has been realigned and are interspersed with remnants of old highway pavement.

Opportunities:

- Further removed from current highway, yet remains on old highway fill
- Remains in Caltrans right-of-way
- Could be considered for future natural surface pedestrian spur trail

Constraints:

- May require more mitigation, due to more wetland encounters
- May require the removal of some trees, but if hand constructed with California Conservation Corps volunteers this would be greatly minimized

Alignment North 3 (N3):

This alternative remains outside of the Caltrans right-of-way and traverses State Parks and Green Diamond properties. This alignment would require managing a steep descent from

Scenic Drive and a higher possibility of flooding, wetland impacts and historic and cultural resource disturbance.

Opportunities:

- May provide a high quality trail experience close to the estuary and far from the highway reducing noise and exhaust fumes
- Avoids Caltrans encroachment permit
- Potential to tie in to scenic estuarine habitat

Constraints:

- Difficult to maintain a gradual trail slope and would require more costly trail infrastructure
- Requires acquisition of the Green Diamond parcel. Although the purchase of this property is being considered and an appraisal is being done as part of this feasibility study, this alignment would be contingent on its purchase.
- Entering State Parks property requires adhering to State Parks trail guidelines, such as if the trail is paved (State Parks preferred asphalt over gravel due to management concerns) the trail must meet ADA requirements.
- Significant wetland mitigation would be required
- Additional creek crossings may be required
- Within the 100-year floodplain
- Lies within the impacted zone for sea level rise in 2100 and currently in flood zone
- Would require amendment to Little River State Beach Restoration and Enhancement Plan
- Boardwalk construction may be necessary for sections

Alignment South 1 (S1):

On the south side of the river this alignment parallels the Crannell Road off ramp and southbound Highway 101 between Crannell Road and the river, requiring a barrier-separation between the trail and highway off ramp.

Opportunities:

- Minimal impact to dunes in order to keep the Class I standard trail width
- Direct route for non-motorized transportation uses
- Consistent with Little River State Beach Restoration and Enhancement Plan

Constraints:

- Lower scenic quality
- Trail separation by a barrier (and possibly fence) may not be appealing to trail users
- Higher cost than Alignment South 2 for a barrier between highway and trail

- Potential safety issues with trail directly adjacent to highway and highway off-ramp
- May be difficult to identify a trail manager for trail section directly adjacent to highway
- May require retaining geocell (or other) retaining walls for sections in which there is not enough existing flat area for a Class I trail next to highway

Alignment South 2 (S2):

This trail alignment traverses a stabilized dune system from Crannell Road to the river and remains within the Caltrans right-of-way except for a short excursion into State Parks property to avoid a wetland dune hollow.

Opportunities:

- High scenic quality
- Scenic viewshed opportunities such as whale watching, snowy plover viewing and panoramic views of sea stacks
- Relatively straight forward trail construction in dune area previously disturbed by highway building
- Further distance from Highway 101 travel lanes and off-ramp
- More likely to identify a willing trail manager

Constraints:

- Would require replacing existing fence along Caltrans right-of-way
- Potential impacts to dune habitat
- Less direct trail route for non-motorized transportation corridor

Little River State Beach Paved Trail Option

This alignment would follow an existing section of the Little River State Beach (LRSB) dune trail just south of the Little River on State Parks property but would entail paving the trail corridor and retaining soft shoulders alongside the trail.

Opportunities:

- High scenic quality trail experience
- Existing trail corridor
- Trail could potentially be maintained and managed by State Parks

Constraints:

- Potential loss of equestrian trail access
- Would require amendment to Little River State Beach Restoration and Enhancement Plan
- May be difficult to achieve a 2% grade for ADA

- Potential impacts to dune habitat
- Not supported by State Parks North Coast District management team
- Currently limited capacity and funding for State Parks to take on new projects

Bridge Design Recommendations

The proposed Little River Trail bridge crossing would help close a key gap in the Humboldt County Coastal Trail. There were three trail crossing options considered for this study. Bridge Option 1 represents a barrier-separated trail on the existing bridge structure, Bridge Option 2 would be a separate trail bridge structure within Caltrans right-of-way and Bridge Option 3 would be a separate structure outside of Caltrans right-of-way. The options were selected by working closely with Caltrans staff and discussing opportunities during the Agency Workshop.

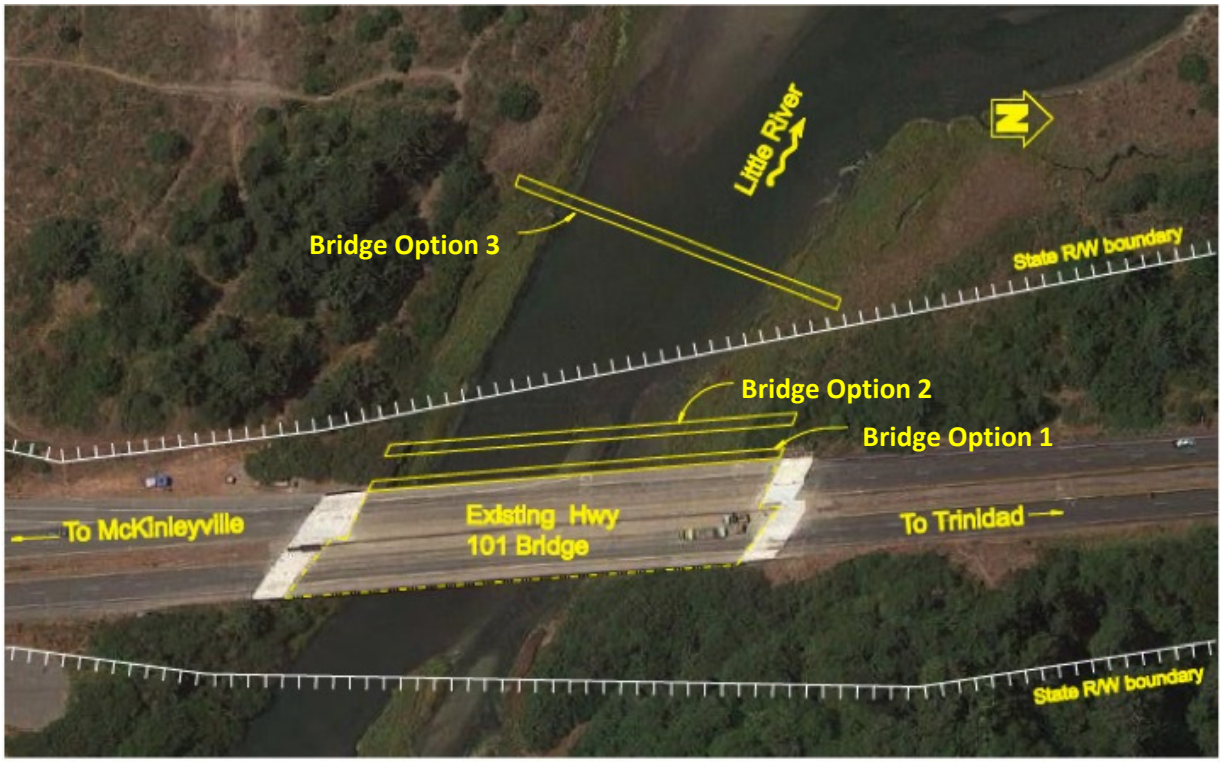

Figure 6 Bridge Alternatives

Little River Trail – Bridge Options						
Alternative	**Length (ft)**	**Total Width (ft)**	**Maximum Span (ft)**	**Depth (ft)**	**Structure Type**	**Construction Cost ($)**
Bridge Option 1	374	11.2	50	3.15	Reinforced Concrete, T-Girder	$1,900,000
Bridge Option 2	374	12	100	3.1 to 4.6	Prestressed, Cast-in-place Box Girder	$2,100,000
Bridge Option 3	310	12	124	3.6 to 5.3	Prestressed, Cast-in-place Box Girder	$1,800,000

Table 1 Bridge Option Costs

Bridge Option 1 – On the Existing Highway 101 Bridge

Bridge Option 1 consists of locating the trail on, or attached to, the existing Highway 101 bridge. Three variations were considered before settling on widening of the existing bridge as Bridge Option 1.

The first variation was the possibility of cantilevering off of the existing bridge. The cantilever option was re-introduced to the discussion by the Caltrans District 1 Design Team. However, Morrison Structures reviewed the Little River Trail Bridge as-built documents and determined that the current structure would not support cantilevering.

The second Bridge Option 1 variation examined reconfiguring the current bridge deck to contain the four travel lanes and a separated Class I bike trail. By shifting the four travel lanes east there would be appear to be sufficient width for the additional separated bike trail. However, multiple problems arose when examining this variation further. The existing bridge was originally built as two separate structures. Caltrans noted that elevation differences between the northbound and southbound bridge sections, resulting from each section's different structural origins, would be problematic for shifting driving lanes. A pavement overlay and restriping of the bridge and its approaches into new lane alignments could remedy the elevation difference and accommodate the trail; however, an overlay of asphalt onto concrete bridge decks is not current practice or preference because of different temperature expansion/contraction rates and the difficulty to inspect concrete decks after an overlay. The overlay and restriping under this variation would affect approximately 3,200 feet of highway

costing approximately $4,000,000 in construction costs or two times the amount to widen the existing structure. Lastly, the lane shift would require reducing the center median to below Caltrans' design standards at the approaches. While a design exception to this standard could be pursued, the added to the cost and other constraints discussed above make this variation less feasible.

The third variation of trail options on the existing highway bridge entailed widening the existing bridge on the downstream side immediately adjacent to the southbound shoulder. Widening the existing structure to accommodate a trail became Bridge Option 1.

The proposed bridge widening for Bridge Option 1 consists of constructing a 374-foot-long, 11.2-foot-wide, 7-span, cast-in-place reinforced concrete T-girder addition to the existing bridge. The widening will provide a clear width of 10'-0" between barriers and match the existing bridge structure depth, structure type, profile, and supports. Both the north and south trail approaches to the bridge would be on widened fill embankment closely matching existing conditions. Stream hydraulics will not be appreciably affected. The typical section for the proposed bridge is shown in Figure 10.

A steel pedestrian railing as shown on the right side of Photo 8, can be used to provide a more open appearance, but will require additional maintenance of the steel. A concrete pedestrian railing could also be used to minimize rail maintenance costs.

The existing bridge barrier and deck slab along the southbound shoulder and a portion of each bent cap will need to be removed and replaced. Traffic control and temporary barriers along the highway will be required to construct the widening. A work bridge and work within the water will be necessary to drive piling, widen the bridge piers, and construct falsework supports.

Opportunities:

- Limits in-stream disturbance to area adjacent to the existing structure
- Caltrans has agreed to maintain the trail on their structure
- Cost effective

Constraints:

- Potentially less scenic than the separated bridge options as it remains adjacent to highway conditions
- Widening requires additional pile driving to support new footings, and thus would be expected to have some environmental impacts

Bridge Option 2 – Separated Bridge within Caltrans Right-of-Way

Bridge Option 2 consists of a trail bridge constructed within Caltrans right-of-way, downstream, some distance from the existing Highway 101 bridge. The separated bridge would be a 374-foot-long, 12-foot-wide, 4-span, cast-in-place pre-stressed concrete box girder with spans of 100, 100, 100, and 74 feet. The typical section for the proposed bridge is shown in Appendix D.

To provide a slender-looking structure, the soffit of the box girder will be cast with a parabolic haunch. The superstructure varies in depth from 3.1 feet at mid-span to 4.6 feet at intermediate supports. Clear width between barriers is 9 feet 8 inches, allowing for bridge and trail maintenance vehicles to travel over the bridge. The bridge is located downstream, see Figure 5, within Caltrans right-of-way, about 30 feet clear of the existing Highway 101 structure. The elevation of the bridge deck will be similar to the elevation of the existing highway bridge deck. The substructure would consist of pile supported short seat abutments and single column bents. The span arrangement was selected to provide bent locations in line with the existing highway bridge pier walls to maximize hydraulic conveyance.

Both the north and south trail approaches to the bridge will be on widened fill embankments closely matching the existing highway bridge abutment conditions. The existing overhead utilities could be carried within the bridge if desired. Limited traffic control would be required along Highway 101 in order to facilitate construction. A work bridge and work within the water will be necessary to drive piling, construct the bridge bents, and construct falsework supports.

Opportunities:

- More aesthetically pleasing experience for users than the bridge widening option as it is removed from highway conditions

Constraints:

- Potentially more disruptive to the viewshed from both the highway and Little River State Beach existing trails
- Would require maintenance to be conducted by an agency other than Caltrans, which could be costly over time

Bridge Option 3 – Separated Bridge outside Caltrans Right-of-Way

Bridge Option 3 consists of a trail bridge constructed outside of Caltrans right-of-way, further downstream with abutments on Little River State Beach lands. The proposed bridge would be a 310-foot-long, 12-foot-wide, 3-span, cast-in-place pre-stressed concrete box girder with spans of 93, 124, and 93 feet. The typical section for Bridge Option 3 is shown in Appendix D. To provide a slender-looking structure, the soffit of the box girder will be cast with a parabolic haunch. The superstructure varies in depth from 3.6 feet at mid-span to 5.3 feet at

intermediate supports. Clear width between barriers is 9 feet 8 inches, allowing for bridge and trail maintenance vehicles to travel over the bridge.

The bridge will be located downstream, as shown in Figure 5, outside of Caltrans right-of-way, and perpendicular to the river channel with bridge deck elevation similar to the existing highway bridge. The substructure would consist of pile supported short seat abutments and single column bents. Both the north and south trail approaches to the bridge would be on widened fill embankment on State Park lands, with the non-motorized trail leading to Caltrans right-of-way. The existing overhead utilities could be carried within the bridge if desired.

Since the proposed bridge is located outside of Caltrans right-of-way, it will not be directly affected by future widening or replacement decisions made on the existing Highway 101 bridge. This structure is also located far enough downstream and with improved span arrangement so as to not have an effect on the existing highway bridge hydraulics.

Opportunities:

- The most scenic bridge option as it is the most removed from highway conditions

Constraints:

- Most disruptive option to the viewshed from both the highway and Little River State Beach existing trails
- California Coastal Commission and State Parks have weighed in against this option
- The costs associated with bringing the trail to the bridge would be higher than the other two Bridge Options
- Environmental and potential cultural resource disturbance could be greatest of the three options
- Would require maintenance to be conducted by an agency other than Caltrans, which could be costly over time

5. Preferred Trail Alignment

The preferred trail alignment for the Little River Trail includes north section N1, Bridge Option 1 and south section S2. This alignment represents the most feasible option for completing this section of the California Coastal Trail, connecting the communities of the Humboldt Bay and providing residents and visitors with the most rewarding trail experience. This alignment considered future connections that would enhance the experience of the LRT and further the County's goal of providing non-motorized transportation options and accessible recreation.

The preferred alignment minimizes environmental impacts while providing an excellent user experience. These alignments create a constructible trail connection that will link Clam Beach and communities to the south, via the Hammond Trail, to Scenic Drive and Trinidad. Scenic Drive has minimal motorized traffic and with fantastic scenic views receives high pedestrian and bicycle use. The preferred Little River Trail alignment helps to fill in an important link in the California Coastal Trail.

The alignments chosen are buildable, cost effective, scenic, and logically sited to connect the areas south of Little River to the areas north of Little River. There are no significant environmental impediments and the necessary lands are publically owned. The privately held GDRC parcel, discussed in Chapter 3, would provide additional opportunities for coastal and river estuary access.

The Little River Trail will be a banner project connecting coastal communities, serving coastal visitors. By removing a major non-motorized transportation barrier it will become a vital transportation corridor for hikers, bicyclists, and others.

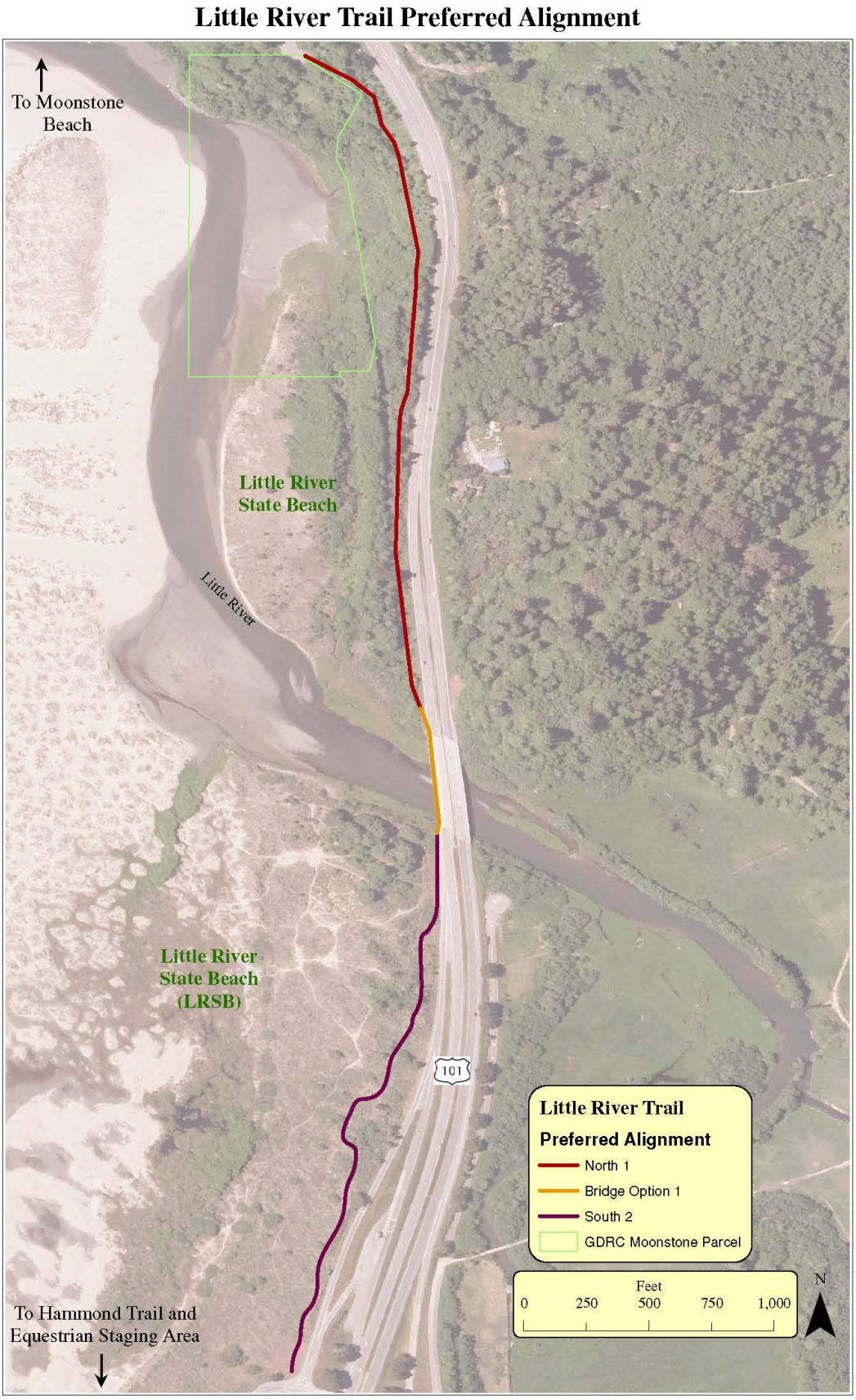

Figure 7 Map of Preferred Alignment

Preferred Alignment Description

Alignment N1 stretches from the south end of Scenic Drive to the existing Highway 101 bridge over the Little River. From the north, N1 starts at the end of Scenic Drive and veers east-southeast, just east of the GDRC parcel, into Caltrans right-of-way below the Highway 101 roadbed but along the highway fill slope. Due to the elevation difference and vegetation between the trail alignment and Highway 101, there is an enhanced scenic experience despite the relative proximity to the highway. The N1 alignment allows for coastal views, through coastal scrub and alder forest, encompassing Little River State Beach to the south, and the sea stacks beyond Moonstone Beach to the north. Poised higher on the fill slop, the N1 alignment avoids the more environmentally and culturally sensitive areas of the estuary allowing for viewing opportunities and the future possibility of unpaved spur trails leading to estuary overlook and bench access.

The N1 alignment reaches the Little River and Bridge Option 1 where the possibility exists for an overlook along the trail. Opportunities exist along the N1 alignment to install resting terraces for ADA compliance.

Bridge Option 1 entails a modification of the existing bridge by widening the southbound side for a barrier-separated trail. This option would likely have the least environmental impacts of the three viable bridge crossing options. It will not disturb the viewshed of those experiencing the LRSB trails, nor, with approved railings, interfere with the coastal view from the highway. In addition, because Bridge Option 1 is to be attached to the existing structure Caltrans has agreed to maintain it. The cost for operating and maintaining the crossing has been a considerable factor for agencies considering LRT management options.

The Little River Trail bridge crossing will be a Caltrans Class I Bike Facility, allowing for comfortable 2-way pedestrian and cyclist traffic. The California Type ST-10 railings are recommended along the traffic side of the widening. A curb mounted metal pedestrian railing, using posts and pickets, is recommended along the outside of the widening. These railings could be painted green like the railings on the Mad River Bridge further south on Highway 101.

This widening will allow for a 10’ clear width, which meets Caltrans’ Highway Design Manual Section 1003.1 (2) design standard. The bridge widening will be designed to carry live loads meeting current American Association of State Highway and Transportation Officials (AASHTO) LRFD Bridge Design Specifications and Caltrans Amendments. The design will also meet current Caltrans seismic design criteria.

The bridge widening will likely require driven concrete piles at the abutments and piers similar to the existing bridge. During the study, other structure types were considered. Precast concrete girder type superstructure is an option but less economical than reinforced concrete

T-girder. A steel girder superstructure is also an option, however, steel girders are less economical than concrete T-girder and more costly to maintain.

Alignment S2 extends from Bridge Option 1 to the Crannell Road overpass and remains within Caltrans right-of-way for most of its length. The alignment traverses the dune area parallel to the existing Caltrans fence which serves as a boundary between Caltrans and Little River State Beach. It is recommended that this fence be removed, as it contains many access breaches and has extensive salt corrosion, and new chain link fencing would be installed east of the trail. The project team does not recommend constructing the trail with fences on both sides due to perceived safety concerns regarding fenced in corridors and greatly decreasing the scenic value of the trail. It will also be necessary to be mindful of the LRSB trails viewshed, the viewshed from Highway 101 in addition to that of the future Little River Trail users. This alignment provides ample opportunity for wildlife viewing of whales, snowy plover, other coastal birds visiting the estuary and LRSB as well as views of the sea stacks off of Moonstone Beach.

Where Alignment S2 intersects with Crannell Road there are options for connecting with the existing LRSB parking area. A cross walk could extend from the southern terminus of the trail across Crannell Road to the parking area, or a trail connection could skirt around the bend in Clam Beach Drive/ Crannell Road to the existing crosswalk across Clam Beach Drive. Because of the curve in the road, and the potential for limited sight lines, routing the path around the bend in the road to connect with the existing cross walk may be the best option. Some geo-cell or similar retaining walls could be built to maintain a bed and keep grade, or the trail can slope downhill to the LRSB trail that then comes up to Clam Beach Drive at the staircase. Maintaining grade and having both options may be preferred.

Preferred Alignment, North Trail Section: N1

Photo 5 N1 Existing Conditions

Photo 6 N1 Existing Conditions

Opportunities:

- Positive scenic experience
- Traverses previously disturbed highway fill slope reducing environmental, archeological and historical disturbance
- Vertical separation from the highway for increased safety and less noise impacts
- Feasible alignment without the purchase of the Green Diamond Moonstone Parcel
- Allows for a consistent grade from Scenic Drive to the Little River Bridge, which with resting areas would be ADA compliant
- Remains within Caltrans right-of-way
- Future connection with the N2 alignment would add to the overall experience of the Little River estuary and increase safety for all trail users
- Low maintenance construction techniques available

Constraints:

- Trail design will need to minimize interference with highway fill prism
- Drainage concerns may require additional trail construction infrastructure
- Cross-slope is such that geo-cell retaining walls may be necessary in sections

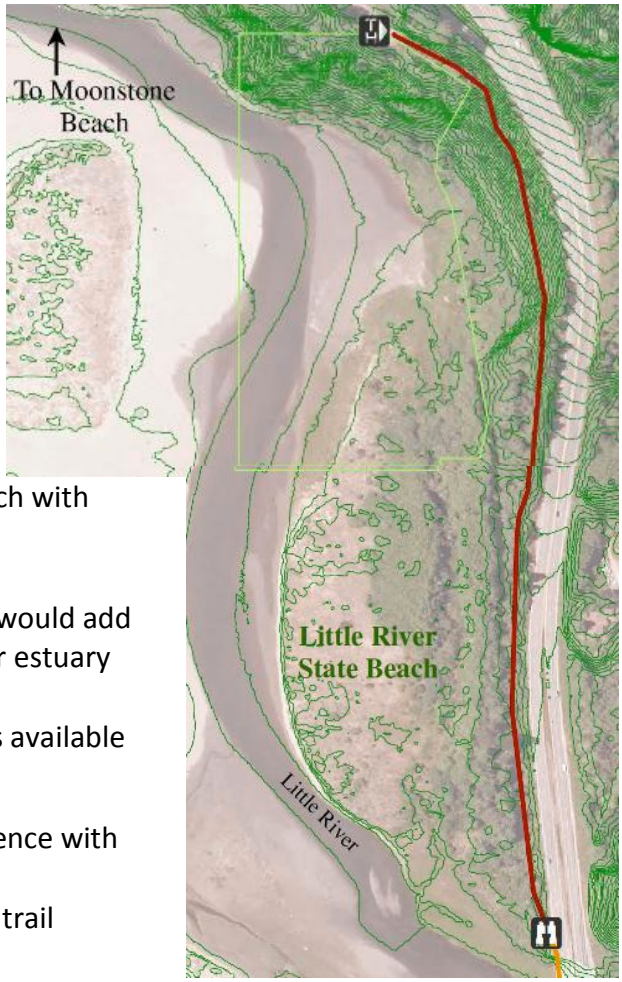

Figure 8 N1 from Scenic Drive to Little River Bridge

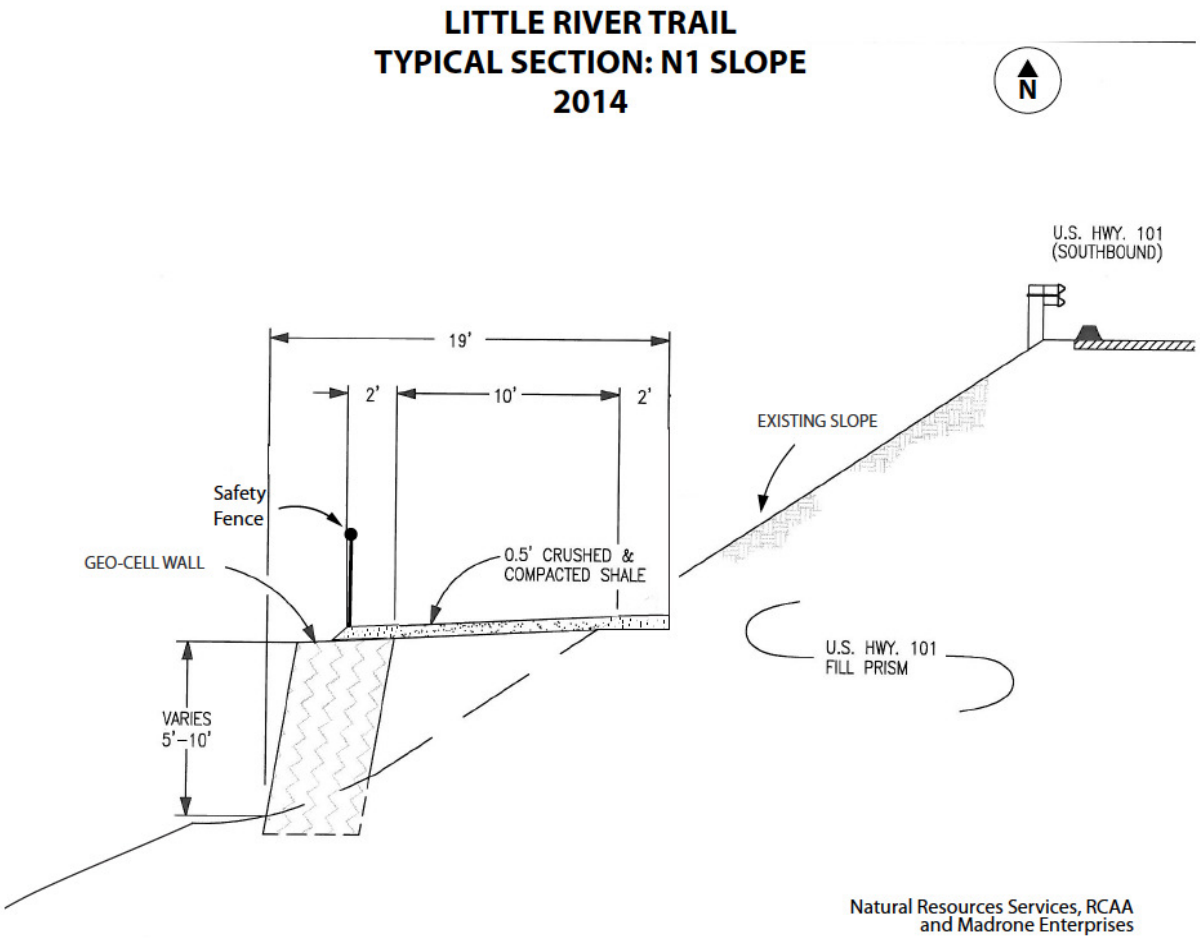

Figure 9 N1 cross section of outsloped trail without drainage with existing US HWY 101 Metal Beam Guardrail

The **N1 cross-sections** above and below depict two general areas along the slope on the north side of Little River. Most areas within the N1 alignment do not have pipes and can be outsloped along the trails length (Figure 9). Several areas have existing drainage pipes that will need to be interfaced and often modified to work with the trail (Figure 10) The trail alignment is very constructible with techniques utilized successfully at the Vista Point and Widow White Sections of the Hammond Trail.

The Little River Trail N1 section contains a significant slope and drainage needs. The cross sections illustrate a 10' clear path with 2-3' shoulders, also made of crushed and compacted shale, staying within the guidelines for a Class I bicycle path. The paths will need to be built in some stretches using a geocell, or similar retaining wall, with a height dependent on the slope. Where the height of the retaining wall is greater than or equal to 4' a protective fence will be installed for safety. Figure 9 shows sections that will be built on top of the existing fill prism to minimize any potential impact to the fill prism and to avoid riprap buried under the fill.

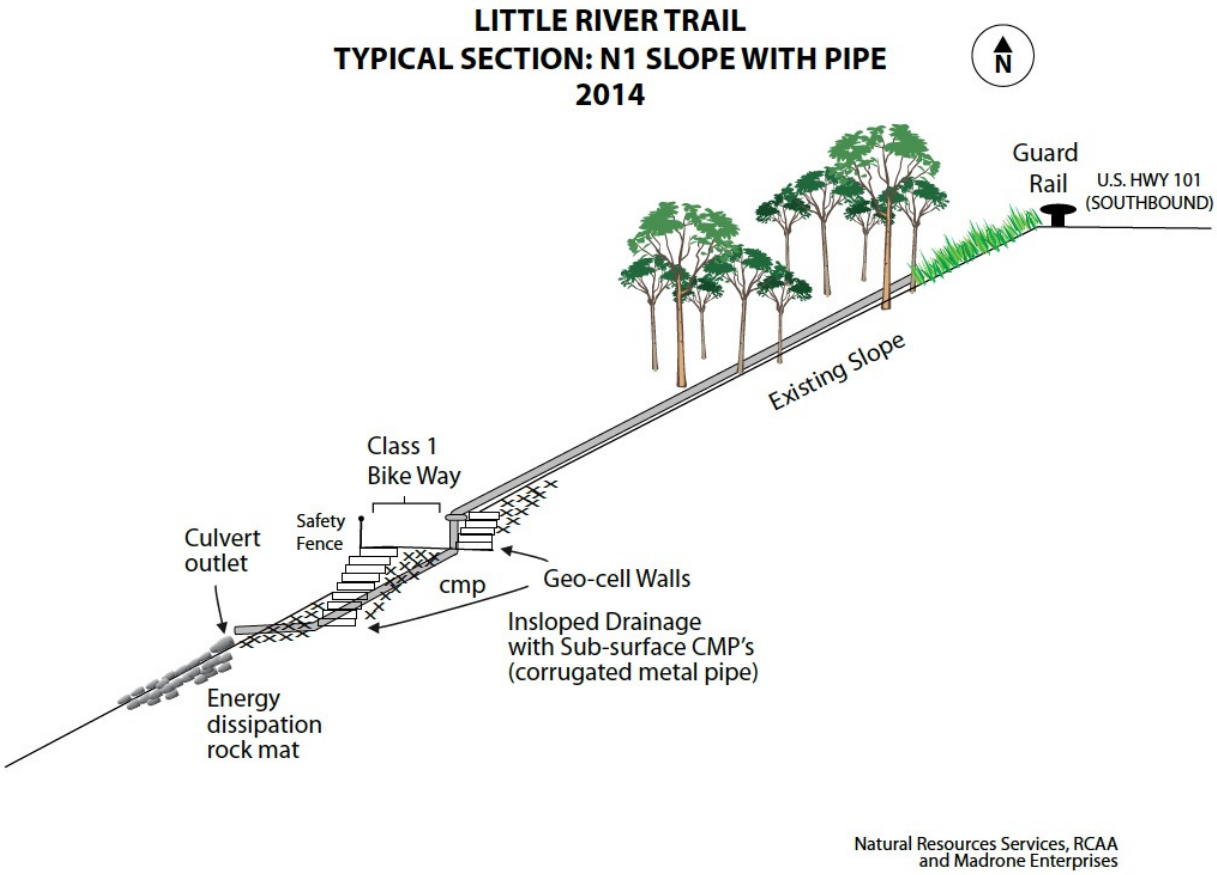

Figure 10 N1 Slope With Drainage Pipe Cross Section

Little River Trail N1 section encounters a drainage pipe approximately 200-300 feet from the end of Scenic Drive. This cross section shows that pipe being redirected under the path and then out past the geo-cell wall to an energy dissipation rock mat. This will protect the trail from runoff erosion. Although this section is specific to the section of N1 traversing the drainage pipe it should be noted that the possibility for redirecting runoff exists throughout N1. Similar drainage improvements are recommended for these areas. The trail will be designed to work with and enhance existing drainage structures and maintenance access

Preferred Alignment, Bridge Trail Section: B1

Photo 7 Bridge railing on Highway 101 over the Mad River, Humboldt County

Opportunities:

- Limits in-stream disturbance to area adjacent to the existing structure
- Caltrans has agreed to maintain the trail on their structure
- Cost effective

Constraints:

- Potentially less scenic than the separated bridge options due to proximity to highway conditions
- Widening requires additional pile driving to support new footings, and thus would be expected to have some environmental impacts

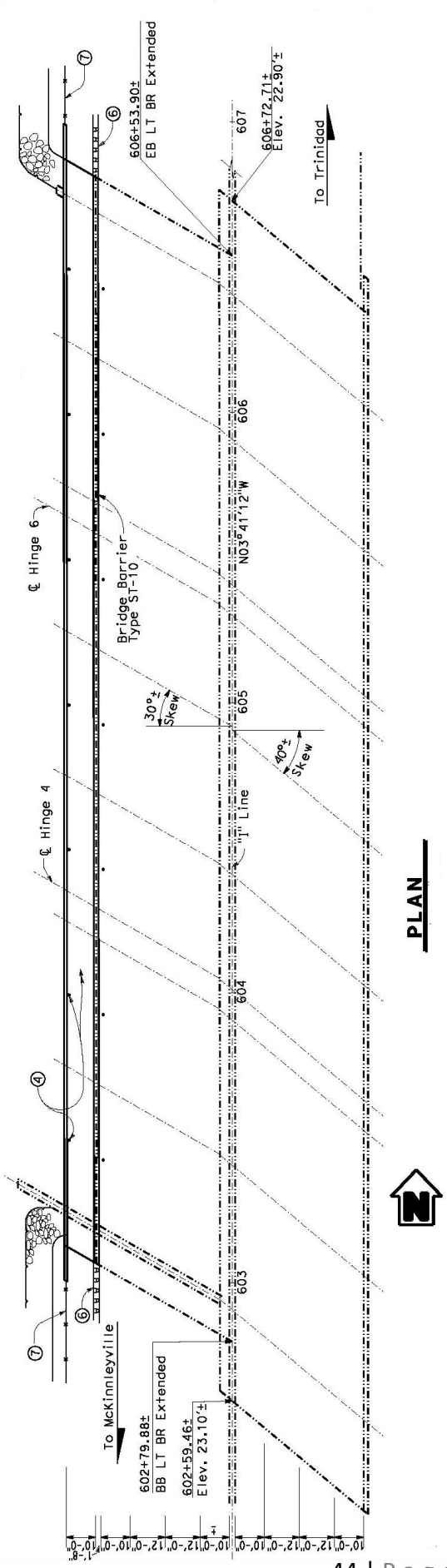

Figure 11 (Right) Bridge Option 1 Plan View Note: The circled "4" indicates drainage holes, the circled "6" is a Metal Barrier Guard Rail (ST-10) and the circled "7" is the metal pedestrian and bicycle railing.

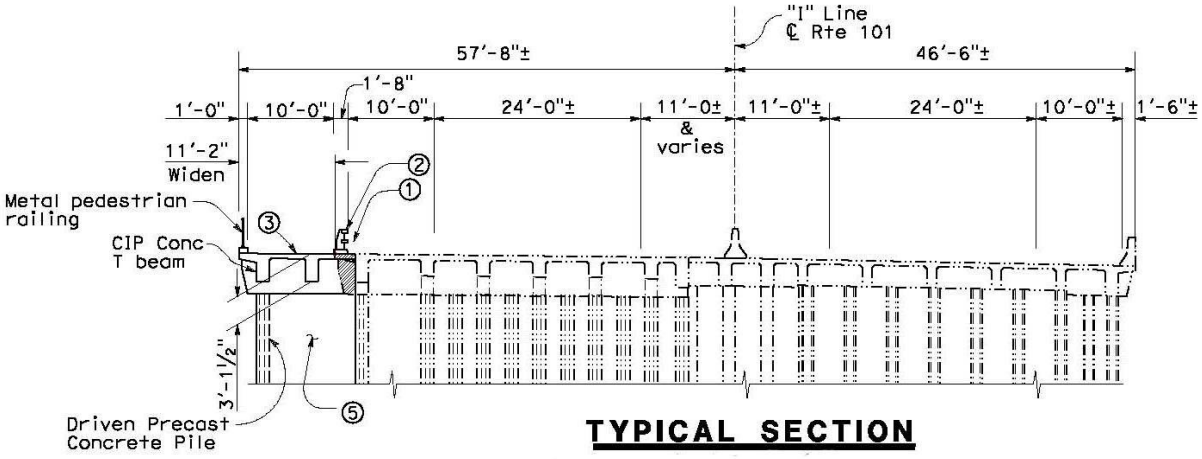

Figure 12 Bridge Option 1 Typical Section

The B1 section above shows the 10' wide trail on the left side of the section adjacent to the southbound lanes. The circled "1" refers to the removal of the existing Type 27 concrete barrier. The circled "2" is where the California ST-10, similar to that shown in photo [x] would be placed. The circled "3" is noting that the existing grade and cross slope will be matched and the circled "5" shows where the solid reinforced concrete wall panel would be placed to match the existing structure.

Preferred Alignment, South Trail Section: S2

Photo 8 Caltrans right-of-way fence at Crannell Road looking north

Figure 13 Section S2 from Little River Bridge to Crannell Road

Opportunities:

- Positive scenic experience with excellent coastal views
- Straight forward constructability, much like the Clam Beach section of the Hammond Trail
- Minimizes impacts to the existing LRSB trail system
- Allows for potential connectivity with the LRSB trail system
- Physical separation from Highway 101 for safety and viewshed benefits
- Anticipated minimal environmental, cultural and historical disturbance
- Remains in Caltrans right-of-way except for a small portion which skirts around a dune hollow minimizing the impact to the LRSB trail system
- Removal of dilapidated Caltrans right-of-way fence, improving the viewsheds from LRSB and Highway 101

Constraints:

- Would require replacing existing fence along Caltrans right-of-way
- Disturbance of some dune habitat through cut and fill in order to maintain a suitable grade
- Need to bypass existing wetland dune hollow within Caltrans right-of-way

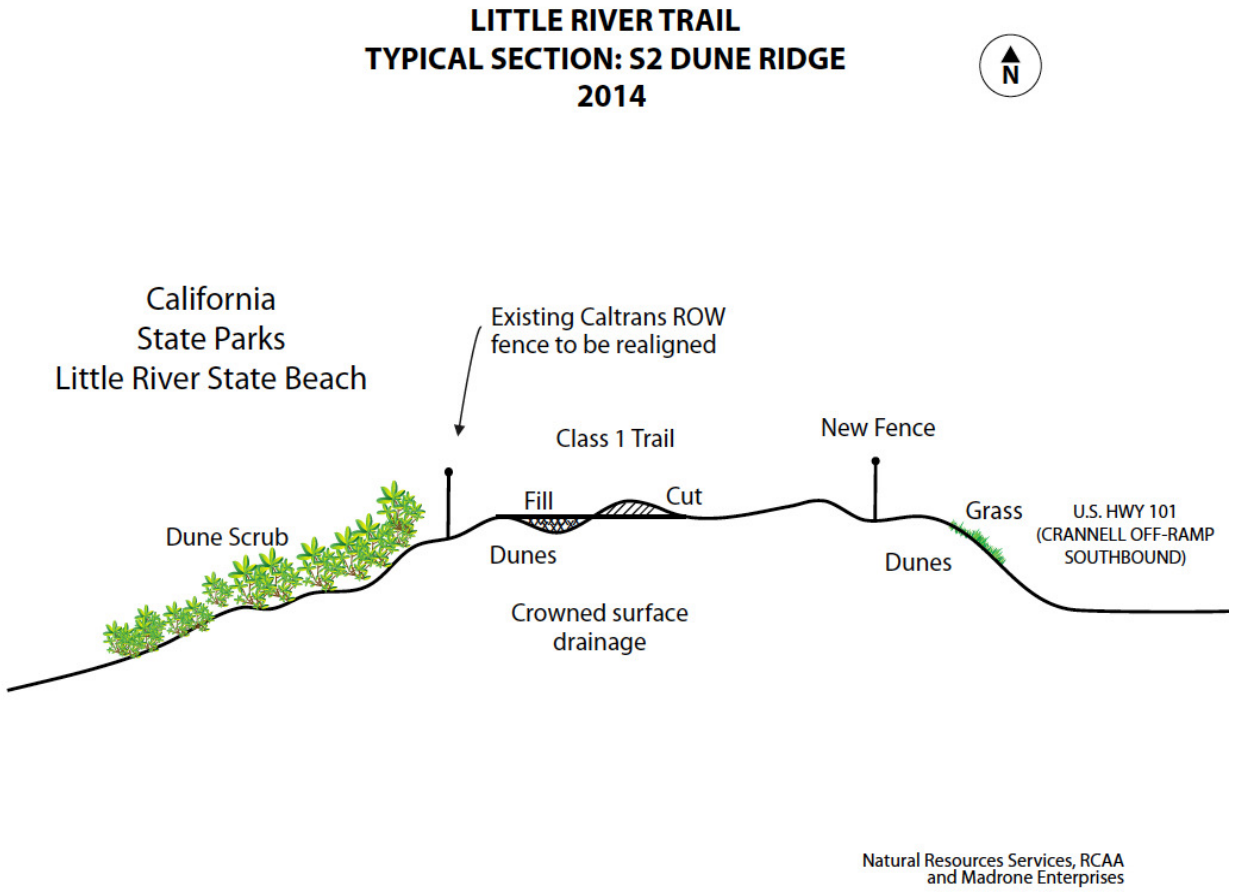

Figure 14 S2 dune ridge typical section

The **S2 typical section** shows the advantage of having several parameters all come together. The S2 alignment of the LRT meanders along the dune ridge west of the Crannell Road off ramp. Currently there is a fence, shown above as the Existing Caltrans ROW fence. This fence is in poor condition and could be removed to enhance viewshed and trail user experience. The removal of this fence will allow for an uninterrupted view from S2 towards the coast and also improve the view from LRSB trails east, towards the dune ridge. The new fence, which will prevent access from the trail to the highway, will be less visible from the LRSB trail system. Replacing the existing fence in its existing location would create a fenced-in trail, which would severely impact the scenic experience and reduce safety for users.

Construction in most areas involves simple and small cuts and fills on the dune tops and all dune hollows are to be avoided. One such large hollow will have the trail route go into State Parks property for a short distance. This trail section is very constructible and will require little to no drainage structures. The trail will be built crowned in most locations in section S2.

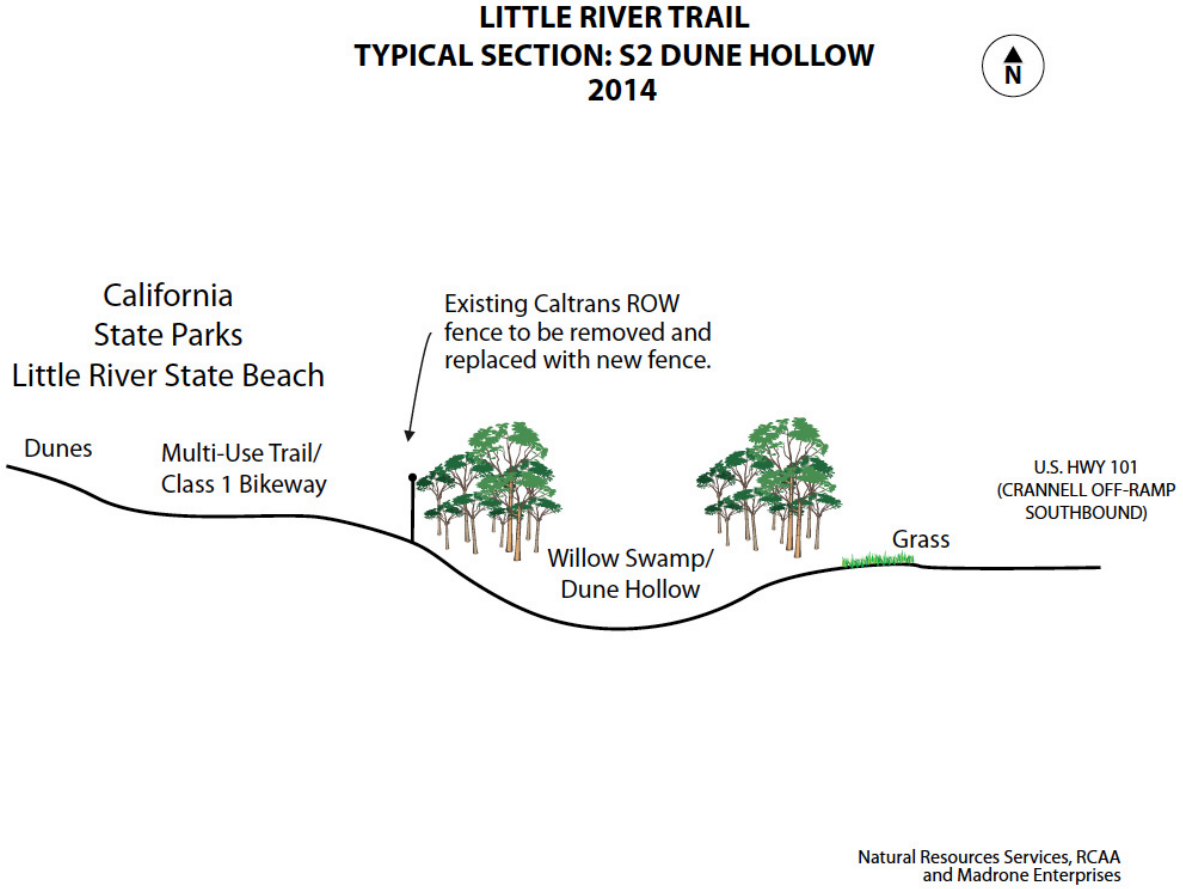

Figure 15 S2 dune ridge alignment with dune hollow cross section

The **dune hollow section of the S2** trail avoids a dune hollow that stretches from the Caltrans right-of-way fence to the Crannell Road off ramp near the Highway Patrol Weigh Station. In order to avoid this habitat the S2 section briefly traverses into State Parks property. The trail will skirt the dune hollow to the west, on a ridge that runs between the existing LRSB trail system and the dune hollow. This incursion into State Parks property may also necessitate environmental review separate from the other trail sections. Funding State Parks to perform this review may be a requirement of the incursion.

Cost Estimates

Cost estimates for Little River Trail construction were calculated by comparing the trail construction costs of recent nearby completed trail projects. These construction costs were then scaled to a per foot estimate to apply to our cost estimate for the Little River Trail. These estimates were then adjusted to conform to years 2016-2018. This assumed slight increases each year for fuel and equipment costs as well as for workers compensation rates and labor. The trail is expected to be constructed using small "trail excavators and dozers" combined with significant support from California Conservation Corps type labor crews. The LRT was divided into three sections for ease of planning and to provide for the differences in geology and topography. The North 1, Bridge Option 1 and the South 2 have been chosen as the preferred alignments. The Bridge Option is further detailed in the 30% Bridge Design attached and the Bridge Analysis Section above.

The preferred North 1 (N1) alignment, approximately half a mile between Highway 101 mile-post 97.801 to R97.569, has a steep grade and will require drainage structures and fill. The Hole-in-the-Hammond section of the Hammond Coastal Trail and the Hikshari' Trail in south Eureka were more recent trails completed in the coastal zone. The Hole-in-the-Hammond cost included wetland mitigation and stream bank stabilization while the Hikshari' costs included benches, lighting, a 20-foot long by 8-foot wide bridge and interpretive display design fabrication and installation. **Using these comparable trail costs as a guide, the estimated cost without permitting and documentation, for the N1 section came to between $750,000 and $900,000**.

The South 2 (S2) section of the Little River Trail meanders along the top of the dune just east of the existing Caltrans fence, save for one section that crosses into State Parks to avoid a dune hollow. This south section was found to be similar to the Hikshari' Trail in design and trail amenities needs. S2 is approximately 0.4 miles long between Highway 101 post mile R97.469 and R97.069. The trail construction would entail balancing cut and fill and re-vegetating coastal scrub. A new vinyl coated cyclone fence would be recommended along the eastside of the S2 alignment. **The estimated cost, without permitting and documentation, for the S2 section came to between $500,000 and $600,000.**

Thus, the trail costs, excluding the bridge, are estimated to be between $1,250,000 and $1,500,000. The Bridge Option 1 was estimated to cost $2,565,000 including design engineering, studies, surveys, construction engineering and administration, see Appendix D for cost details. Assuming an additional 10% of project costs for environmental studies, documentation and permitting, **the total cost for the Little River Trail is estimated between $4,196,500 and $4,471,500**.

Comparable Local Trails	Cost Per Linear Foot	Amenities Included	Environmental Documentation and Permitting	Year Built	Comments
Hole-in-the-Hammond (Hammond Trail Murray Road to Letz Ave – Multi-use Trail)	$245	200' Stream Bank Stabilization 70' Foot Bridge	Not included	2007	Run-off stabilization and small foot bridges may be necessary for pieces of the N1 section of the LRT
Hikshari' Trail	$175	Interpretive Signage, Benches, Some Lighting, 20' Foot Bridge, Wetland Mitigation	Not Included	2013	LRT would include Interpretive signage, some benches, lighting and any wetland mitigation

Table 2 Trail Comparisons for Cost Estimation

Little River Trail Section	Cost Range
North 1	$750,000 - $900,000
Bridge Option 1	$2,500,000
South 2	$500,000 - $600,000
Environmental Permitting and Documentation at 10% of Total	$380,000 - $410,000
Total LRT Trail	$3,900,000 - $4,500,000

Table 3 Little River Trail Estimated Costs

6. Anticipated Environmental and Regulatory Requirements

The Little River Trail and bridge crossing will require a number of regulatory permits and environmental compliance documentation prior to construction in order to comply with federal, state and local regulations and laws. The next phase of the Little River Trail project should include engineered designs, environmental and cultural resource surveys, draft CEQA documentation and draft permits. Due to the location of the trail in the coastal zone, proximity to coastal wetlands and anticipated impacts to Little River for the bridge crossing, project proponents are assumed to have a number of expected environmental and regulatory requirements to meet.

The following is a list of anticipated environmental and regulatory requirements for the trail:

- Wetland Delineation and Biological Resource Surveys
- Cultural Resource Study (in consultation with local tribes)
- CEQA
- NEPA (only if federal funding is used for construction)
- Coastal Development Permit (CDP)
- Regional Water Quality Control Board (RWQCB): Section 401 Water Quality Certification and Storm Water Pollution Prevention Plan (SWPPP)
- U.S. Army Corps of Engineers (COE) Section 404 Nationwide Permit
- Federal Endangered Species Act (ESA) Compliance (may be needed if there is a potential to cause adverse impacts to federally-listed threatened or endangered species)
- California Department of Fish & Wildlife Section 1600 (Streambed Alteration) Permit
- California Endangered Species Act (CESA) consultation with California Department of Fish & Wildlife (may be required if bridge construction is expected to impact state-listed threatened and endangered species)
- County of Humboldt Grading Permit and Stream Side Management Area Permit
- Caltrans Encroachment Permit
- Memorandum of Understanding with State Parks for section of trail through Little River State Beach
- Mitigation (type and extent to be determined)

While many of these permits and regulatory processes are well understand by project proponents, several have been researched further during this feasibility study and warrant further discussion in the context of the Little River Trail.

Coastal Act Considerations

The Little River Trail falls entirely within the Coastal Zone and therefore is subject to all applicable Coastal Zone policies and regulations of the California Coastal Act. The trail will require a **Coastal Development Permit (CDP)** and likely the development of mitigations for impacts to small pockets of wetlands in the Coastal Zone. The current zoning (Public Recreation with Coastal Wetlands) allows trails, therefore eliminating the need for a Conditional Use Permit. The Little River Trail project area falls within the both the California Coastal Commission permitting jurisdiction and local permitting jurisdiction (County of Humboldt) with an opportunity for appeal to the Coastal Commission. As the trail will likely be permitted as one project and for ease of processing, the County of Humboldt may authorize a consolidated CDP under the jurisdiction of the Coastal Commission. Thus, the CDP would be reviewed and approved by the Coastal Commission for consistency with the Coastal Act as the standard of review.

The current **Humboldt County Local Coastal Program** is divided in to area plans, of which the McKinleyville Area Plan and the Trinidad Area Plan are applicable to the Little River Trail. The LCP has not yet been updated to include the latest planning and development of the CCT. Proponents of the CCT are in touch with Humboldt County Planning and Building Department to include route and policy updates for the CCT in the next updating of the County's LCP. The existing LCP does mention a general route for the CCT along the Little River and along the Hammond Coastal Trail corridor, "a coastal hiking, biking, and equestrian trail has been proposed in the California Recreational Trails Plan and the adopted Humboldt County Trails Plan. In the McKinleyville Planning Area, this is proposed [and] has been built to run along the Little River and Clam Beaches and then up the coastal bluff to Vista Point and along the terrace paralleling US 101 to Letz Road and is proposed to be extended to Murray Road, then west to follow the old Hammond Railroad right-of-way to the Mad River."

The completion of the CCT and public access along the coastline is supported within the Coastal Act policies; however, coastal resource and habitat protection may sometimes be at odds with enhancing public access. Thus, there may be other strategies to employ to ensure approval of a CDP for the trail, improve public access and coastal resource education in the Little River area, and protect sensitive coastal and estuary habitat. Many jurisdictions throughout California have successfully completed CCT projects through sensitive habitat areas by carefully designing projects to offer increased public access while complying with other priorities in the Coastal Act. Public access projects impacting wetlands and requiring wetland fill may be approved through a balancing resolution if the trail is a coastal or resource dependent use that will

provide public access and recreation while potentially allowing for **nature study as a coastal resource dependent activity**. Thus a CDP for the Little River Trail may be more likely to be approved if the route and interpretive amenities emphasize the unique and diverse coastal habitats present in the Little River area and along the Little River Trail alignment. If wetland areas are be impacted by the trail, it is more likely that a scenic nature study opportunity would be approved. It will be imperative to include environmental and cultural interpretive content and design development in the next phase of the Little River Trail project in order to further the concept of nature study.

Project designs in the coastal zone often need to consider visual resource protection and environmental resource protection. Railing, fencing, and access control designs should be prioritized that reduce impacts to public views of the coast. Fortunately, the Coastal Commission and Caltrans have recently developed **bridge and railing designs** that meet highway safety standards and allow for reduced visual impacts in the Coastal Zone, see *Bridge Rails and Barriers, A reference guide for Transportation Projects in the Coastal Zone* listed in the References and Resources.

Bridge and railing designs have recently been implemented on successful bridge projects in the coastal zone in other parts of Caltrans District 1 along the Mendocino Coast and over the Mad River. In addition, **construction methods for bridge widening** should be carefully considered as the Coastal Commission is required to approve the least environmentally damaging feasible alternative.

In addition, project designs in the coastal zone must strive to protect environmentally sensitive habitat areas (ESHA). The project area may have some unique habitat including dune plant communities and rare plant ESHA that may be identified during the next project phase. Trail alignment and designs will be sought that minimize impacts to these areas and other resources in the project area including cultural and archaeological resources.

Mitigation Considerations

Despite best efforts to reduce coastal resource impacts, the trail will likely require nearby mitigation to offset disturbance to sensitive areas. These types of sensitive areas to mitigate for may include dune hollows or coastal estuary habitat. Recently, mitigation requirements for the Hikshari' trail in south Eureka required a 9:1 mitigation for disturbance to coastal salt marsh habitat. Disturbance to other coastal habitats may be mitigated at a ratio closer to 4:1. In addition, there may be an opportunity to enhance the coastal viewshed as mitigation for trail bridge widening by routing overhead utility lines with the improved bridge. Mitigation requirements will be determined through the CDP process in consultation with the Coastal Commission. The design and construction phase of the Little River Trail project should include time to fully design, implement and monitor required mitigation areas. . Wetland mitigation will require compliance and performance monitoring to assure that the mitigation meets the

success criteria as defined in the mitigation and monitoring plan that will need to be developed for the project. A mitigation site will need to be identified and subjected to a wetland delineation using the Coastal Commission standards to determine that it is not currently a wetland. There may be opportunities within the Green Diamond property to create a wetland mitigation site.

Bridge widening will also require mitigation if new bridge piles are required. Mitigation will be required to minimize temporary impacts to endangered fish species (coho salmon [*Oncorhynchus kisutch*] and possibly tidewater goby [*Eucyclogobius* newberryi]) during construction. These requirements will likely include seasonal restrictions on construction activities within the channel, installing exclusionary fish screens around construction areas within the Little River channel, removing fish and amphibians from within the isolated area and releasing them in similar habitat outside the isolated construction area, de-watering the construction area, discharging turbid water in a settling pond to avoid increasing turbidity in the river, and an acoustical curtain for sound dampening if pile-driving is required within the Little River channel.

Zoning Considerations

Existing zoning of lands through which the trail would travel should not be a barrier to the trail. Besides Caltrans' transportation right-of-way, the GDRC property is zoned Public Recreation with Coastal Wetlands; Beach & Dune Areas; & Design Review, both of which are compatible with the development of the Little River Trail.

Cultural and Archaeological Resource Study

As the Little River was the boundary of the ancestral territory of the Yurok Tribe and Wiyot Tribe, there is a rich cultural history in the area (as detailed in Chapter 2). We had close coordination with Tribal Historical Preservation Officers (THPOs) from tribes with ancestral ties to the Little River area during the course of this feasibility study. Feedback from THPOs from several tribes (Blue Lake Rancheria, Wiyot Tribe, Bear River Band of the Rohnerville Rancheria and the Yurok Tribe, and limited correspondence with the Trinidad Rancheria THPO) indicated that there are fewer concerns about cultural resource impacts with the trail on the west side of the highway as these areas have previously been disturbed/covered by highway fill. Our initial report from the North Coast Information Center (NCIC) yielded that there have been several cultural resource studies completed within the project, and three archaeological resources have been recorded in the lower Little River area and with the potential for cultural resource sites to be present as well.

We recommend that the CEQA Initial Study, during a future phase of the Little River Trail development, employ the expertise of an archeologist/cultural resource specialist who can assist with the more detailed assessment of potential cultural and historical impacts along the

trail footprint. The NCIC Report recommends a professional archaeological assessment as part of the CEQA preparation as well as careful construction with potentially a qualified observer present on site in case of excavation of cultural or historical resources.

As the proposed trail alignment mostly traverses areas that have been disturbed for highway building, we do not expect high impacts to cultural or historical resources. In the next design and permitting phases of the project, THPOs from tribes with ancestral ties to the Little River area should continue to be thoroughly engaged. In addition, direct consultation with tribal governments should be pursued in order to increase transparency and foster local support of the trail.

Caltrans Encroachment Permit and New Access

In addition to regulatory permitting requirements, project proponents will need to work with Caltrans District 1 right-of-way and permitting offices to permit implementation of the trail within the Highway 101 right-of-way. An **encroachment permit** application should be submitted after a CEQA document has been completed and in conjunction with other permitting requirements. The encroachment permit may entail multiple entrances and exits from the state highway right-of-way, depending upon the final design of the trail; however, these should be grouped together into one permit application. Trail proponents will likely also need to **request a new access point** to the Caltrans right-of-way at the northern terminus of the trail at Scenic Drive. In contrast, the southern terminus at the Crannell Road overpass is already an existing access point for the highway. As Caltrans will be an active partner in the development of the portion of the trail crossing the Little River, it is hoped these processes could be expedited. The Caltrans staff rate for processing encroachment permits is estimated to be $82 an hour.

7. Trail Support Facilities

Clearly defined and welcoming trail heads and trail access points at both the north and south ends of the Little River Trail will be crucial to ensure the Little River Trail is inviting and accessible to residents and visitors alike. Trail heads help orient users to the local area, history and trail experience and can be designed to fit with the natural and cultural surroundings of the local area. Fortunately, there are ample opportunities for safe, clear trail access points to the Little River Trail that will help connect residents and visitors alike to the trail other nearby park facilities and amenities. There are also opportunities to connect to and utilize existing trail support facilities at other public access areas nearby. Having strong partnership and maintenance agreements between the different management entities in the area will be important to ensure safe and efficient trail support facilities.

Trail support facilities include trail heads, directional, regulatory and interpretive signage and other trail amenities (e.g. site furnishings, trash cans, lighting) that help ensure proper use of the trail and enrich the trail user experience.

Photo 9 Example trail amenities along the Eureka Waterfront Trail Boardwalk including benches, trash cans, lighting and bicycle racks

Trail support facilities for the Little River Trail should enable safe, easy access to the Little River Trail while also helping to connect trail users to other attractions in the area including the Hammond Coastal Trail, Little River State Beach, Clam Beach County Park, Moonstone Beach County Park and visitor services in Trinidad.

Trailhead Locations

The Little River Trail's northern terminus will be at the south end of **Scenic Drive**, formerly the old Highway 101 and now a right-of-way maintained by the County of Humboldt. Scenic Drive dead ends as a cul-de-sac near the Highway 101 on ramp at Moonstone.

Photo 10 Proposed northern trailhead for the Little River Trail at the south end of Scenic Drive just past Moonstone

This location has ample opportunities to serve as a destination trailhead to access the Little River and Moonstone Beach areas. Although Moonstone Beach with parking and public access is nearby, the distance is great enough to warrant a separate trail head facility for the Little River Trail. The trailhead would be accessible from southbound Scenic Drive and northbound along the Little River Trail. This location has a history of illegal dumping, and creating a more welcoming and more frequently used public access trail head at this location could discourage this type of illicit activity.

Trail head parking, lighting, and an informational kiosk are recommended to serve trail users at this location. Trail head lighting is often encouraged at public access areas on cul-de-sacs to enhance the feeling of safety. The informational kiosk, with a map and interpretive signage, would help orient trail users to the area and show connections to other nearby public access areas. Depending upon public/non-profit acquisition of the Green Diamond Moonstone parcel which includes part of the Scenic Drive cul-de-sac, parking could be designed closer to the end of the cul-de-sac or closer to the on-ramp.

The southern terminus of the Little River Trail will be at **Crannell Road**, near the overpass over Highway 101 and the northern extent of Clam Beach Drive. This terminus will connect users to the Little River State Beach dune trails directly to the west and an existing State Parks parking area near the Crannell Road overpass. This southern trail head for the Little River Trail may be

easily accessed from Highway 101, from the east along Crannell Road from Dows Prairie and northern parts of McKinleyville, and from the south along Clam Beach Drive. Chapter 5 details options for routing the trail at this southern terminus at Crannell Road to allow for a smooth transition to the trail and a safe trail crossing of Crannell Road.

Photo 11 Southern terminus of the Little River Trail at the Crannell Road overpass

This study recommends utilizing the existing State Parks parking area for accessing the Little River Trail, by developing a partnership and maintenance agreement with State Parks. This existing parking area and on-street parking along Clam Beach Drive should be sufficient to meet the demand of users starting their trip along the Little River Trail from the south.

Photo 12 Day use on-street parking along Clam Beach Drive

Many cyclists will likely start their trip elsewhere before accessing the Little River Trail from the south, along the Hammond Coastal Trail in particular, and would not utilize this southern terminus for parking. This study recommends enhancing the existing informational kiosk at

State Parks' parking area, in partnership with State Parks personnel, to include information and maps for the Little River Trail and nearby destinations.

Photo 8 Existing Little River State Beach parking area at the planned southern terminus of the Little River Trail

Additional Trail Support Facility Considerations

Another trail support facility proposed for the Little River Trail is a **viewpoint** along the trail just north of the river. This viewpoint would only be accessible from the Little River Trail itself and would provide a short distance destination and resting point for trail users walking from the southern or northern trail heads. The viewpoint would also allow space for bird watching or picnicking along the Little River Trail and would be close to the river estuary to allow for unique wildlife viewing opportunities. The viewpoint is envisioned as a wide section in the trail with an additional deck and railing to allow for greater views of the river. Additional amenities could include benches, interpretative signage and wildlife viewing scopes.

Photo 14 Example wildlife viewing scope at a trail overlook

Photo 15 Viewpoint at Redwood Creek estuary operated by Redwood National and State Parks

Equestrian access for the Little River Trail is recommended to **utilize existing equestrian support facilities** maintained by State Parks and the County of Humboldt further south along Clam Beach Drive.

Photo 16 Equestrian parking and staging area near Clam Beach

Equestrians utilizing the Little River Trail will likely also access dune trails and the beach in Little River State Beach and Clam Beach County Park, providing for many loop options and a varied trail experience. State Parks and the County each maintain pull-through parking areas with equestrian specific trail support facilities that ensure ease of equestrian access and adequate staging areas for horses.

Access management at trail head locations will be important to ensure safety near and along adjacent roadways and Highway 101. As Chapter 5 discussed needs for fencing and barrier separation along the trail, access management strategies will also be required at trail support facilities. Clear trail crossing markings and delineations will be needed for the southern access point at Crannell Road. A railing or safety barrier may be needed at certain areas with adjacent steep slopes at the north trail head, or trail routing should be diverted significantly from these areas. Using signage, pavement markings and/or landscaping to discourage motor vehicle use is also suggested at the north trail head. Strategic vegetation planting may be required at trail heads to ensure motorized vehicles do not access the trail. If motorized vehicle use becomes an issue once the trail is implemented, trail managers could consider installing bollards, which are placed in a multipurpose trail but allow non-motorized users to pass on each side. Bollards can be successful at discouraging motorized traffic on trails but should be minimized as they are obstacles for bicyclists and other trail users.

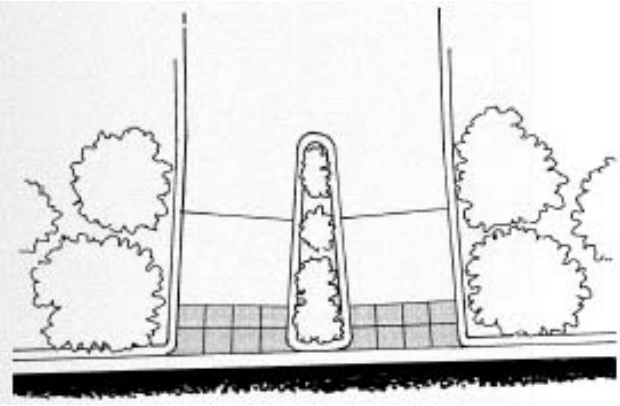

Figure 16 A landscaped median at the trail entrance may discourage motorized vehicle use without being an obstacle for non-motorized trail users. Credit Federal Highways Administration.

Interpretative Plan

A comprehensive interpretive and signage plan enhances any trail and public access area. Wayfinding signage, regulatory signage and interpretive displays are essential for a complete trail user experience. The Little River Trail project area is rife with interpretive display

possibilities. Interpretive efforts will highlight aspects of cultural and natural history resources unique to the Little River Trail project area and are explored at the end of this section.

Signage proposals and visitor experience has been broken down into the following:

1. Highway 101
2. North and South Trailheads
3. Bridge and Proposed View Deck
4. Along the Trail

The **Highway 101** section includes potential Caltrans signage alerting highway users of approaching on and off ramps to and from the project area. The southbound Crannell Road off ramp and Scenic Drive on ramp as well as the northbound Westhaven off ramp are considered here. Wayfinding signage along frontage roads approaching trail heads could also be considered. These signs will range in size from 30" x 96", Figure 11 to 24" x 24", Figure 13. Signs will meet Caltrans standard specifications for aluminum panel size, retro-reflexivity and font lettering.

Sample Wayfinding Signage:

Figure 17 30" x 96" Example wayfinding sign from Highway 101

Figure 18 Example of wayfinding sign from frontage road

Figure 19 24" x 24" Example wayfinding sign from Highway 101

Figure 20 Example trail head wayfinding sign

Parking area trailheads will have a mix of regulatory (on posts) and orientation/informational signage (in kiosks). Standard regulatory signage dimensions are 12” x 18” aluminum panels, affixed to posts (figures 15 and 16). RCAA will coordinate with the County of Humboldt sign shop in the further development of signage. Kiosks can be fabricated out of wood, a Trex-like composite, concrete or a combination of these materials. Kiosks will host either one large or two smaller panels, dependent on information and messaging needs. Single panels can range from standard 24”w X 36” h to 48” x 48”. Panel material can be aluminum or high-pressure laminate.

Figure 21 Example of 12"x18" regulatory sign

Figure 22 Example of 12"x18" regulatory sign

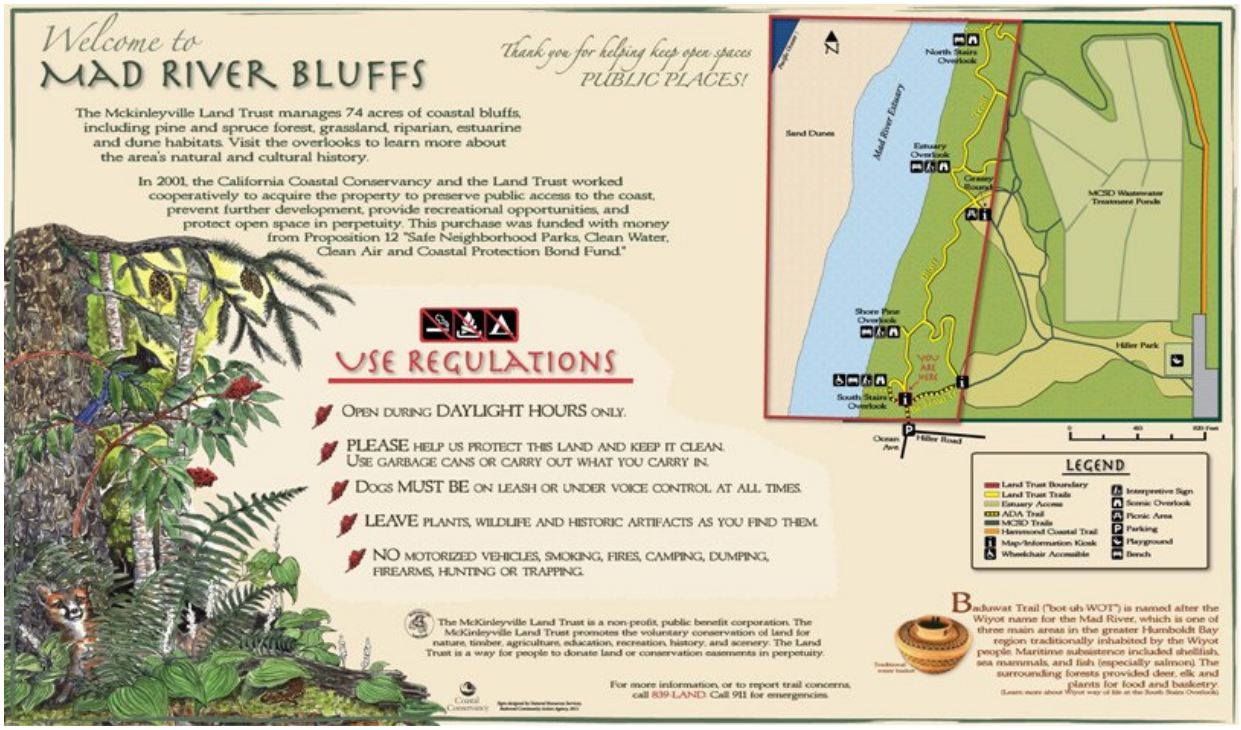

Figure 23 Sample kiosk panel containing orientation, informational and use regulation

Photo 17 Example of kiosk as built

Figure 24 Example of kiosk signage

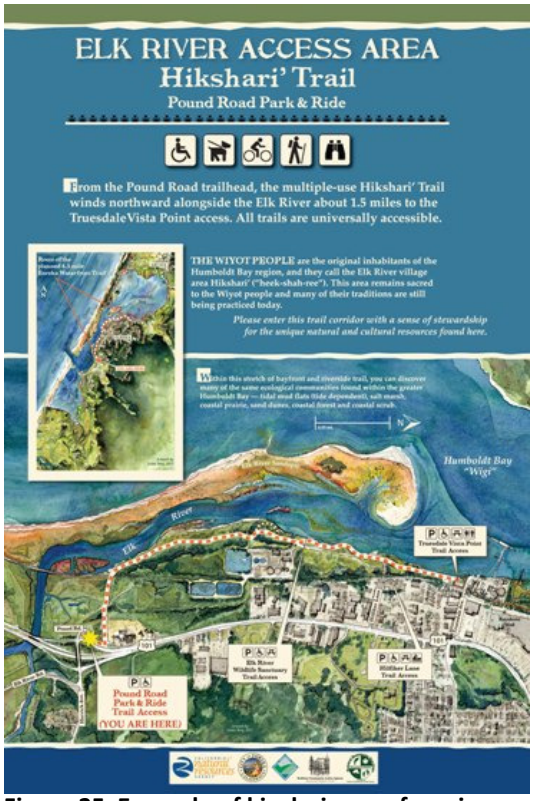

Figure 25 Example of kiosk signage focusing on wayfinding

The bridge spanning Little River, connecting southern and northern trail sections, and the **proposed trail view deck** have interpretive potential. The cultural significance of the Little River and conventional bridge symbolism, could be used to create a visual representation of the importance of this place. Native tribal banner art or other symbols could be incorporated into the structural design of the bridge, either along the railing or embedded in the surface concrete.

Sample Tribal Banner Image (Basket Weave)

The proposed view deck at the northern end of the bridge has potential to serve as a destination along the trail with interpretive displays and other amenities. Viewing stations/decks/platforms including stationary binocular viewers or bird/duck blinds would provide wildlife viewing opportunities and bring estuary, coastal and ocean views into focus.

There are **many interpretive opportunities along the trail** alignment. The Little River Trail traverses areas rich in nature study potential from up close bird watching in the dune hollows to distant whale watching and viewing of sea stacks. Along the southern section of the preferred trail alignment the dune ridge is higher in elevation than the majority of the Little River State Beach, allowing opportunities to interpret and highlight more viewshed opportunities. Interpretive signage could highlight Snowy Plover nesting information and dune swale ecology. Sign panels (up to 24”hx 36”w) can be fabricated from either aluminum or high-pressure laminate and be mounted on custom posts (branching tree motif) or standard National Park Service-style pedestals. RCAA has developed myriad interpretive panels with coastal themes that can be adapted for this site.

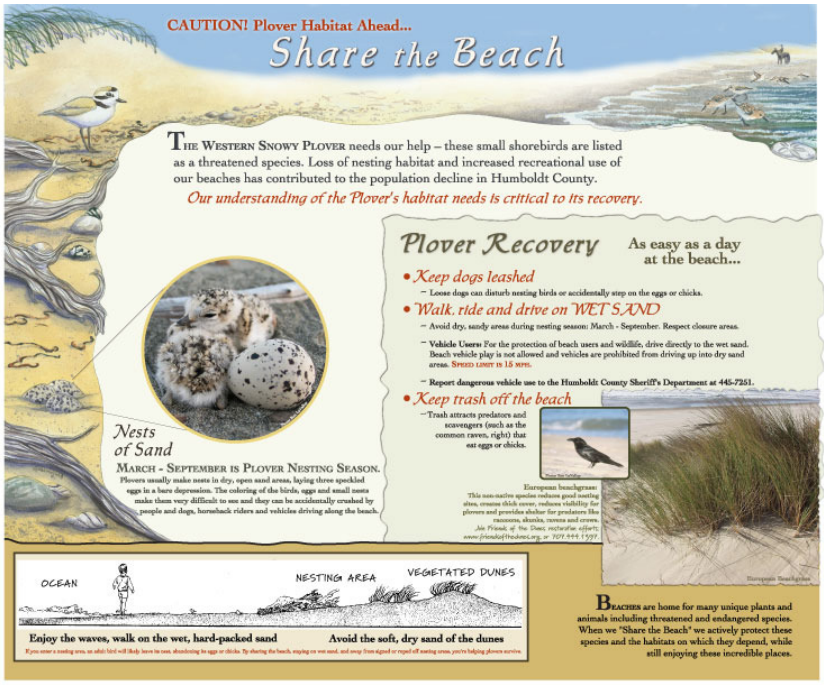

Figure 26 Sample snowy plover signage

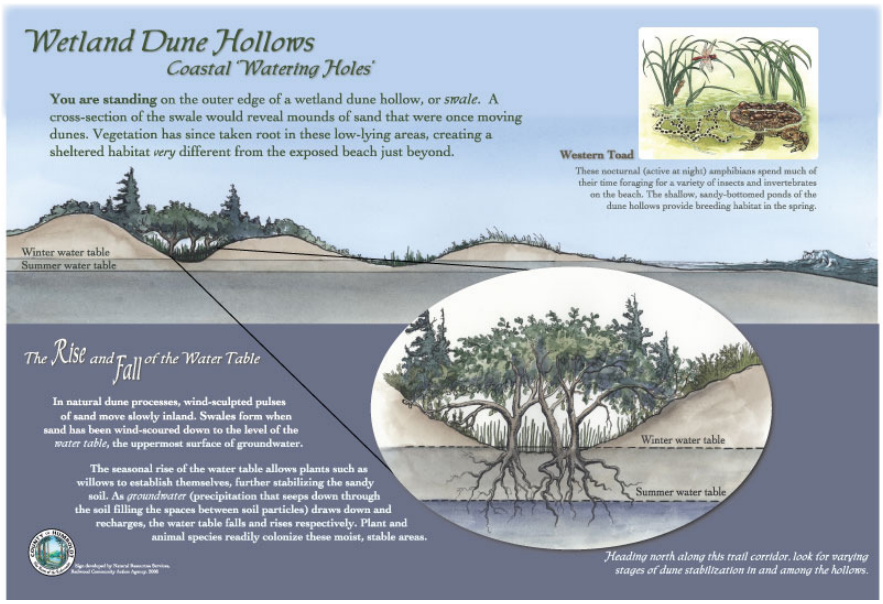

Figure 27 Sample dune hollow signage

Photo 18 Interpretative panel with standard pedestal

Photo 19 Interpretative panel with standard pedestal

Potential Interpretive Themes

The proposed Little River Trail preferred alignment transverses a coastal dune ecosystem and the Little River estuary. The willow thickets, wetland dune hollows and grasses of the dunes attract migrating and resident shorebirds, raptors and songbirds in addition to mammals and amphibians. The potential for nature study is myriad along the trail, from whale watching to bird watching. In addition the preferred alignment allows for viewing of Snowy Plover and endangered Tidewater Goby habitat.

As the historic boundary between Wiyot and Yurok ancestral lands, the Little River and its associated resources hold a piece of the cultural story of this area. The Little River was home to eulachon, *Thaleichthys pacificus*, which was an important resource for both the Wiyot and Yurok in this area. Working with the Wiyot Tribe, Yurok Tribe, Bear River Band of the Rohnerville Rancheria and Blue Lake Rancheria Tribal Historic Preservation Officers will ensure that the interpretive work along the trail respectfully incorporates learning opportunities and a celebration of the cultural history of the Little River area.

The 1800s brought timber harvest and with it an extensive rail system. Part of this system crossed very close to where the Highway 101 bridge crosses the Little River today. With this increased timber harvest more families began to move into the area and a schoolhouse was

needed. This Little River School was erected within the project area and existed for a few of the early years of the 20th Century. The Little River played a part in all of these activities. The interpretive signage could incorporate some of this lore and information into the trail experience at Little River.

The communities of Westhaven to the north and McKinleyville to the south have grown as well as Highway 101 that connects the coastal communities. The Little River Trail will serve as part of the larger California Coastal Trail, and visitors to this area currently are primarily recreation-based; however, the increased connectivity between residential areas of Westhaven and Trinidad and the Hammond Trail is expected to bring more commuters through the Little River area on a daily basis.

8. Trail Management Strategy

The realization and success of the Little River Trail extension of the Hammond Coastal Trail will likely only come to fruition through strong community support and cooperation between several public jurisdictions and community-based organizations. As the burden of increased maintenance is often the driving factor that limits expansion of trails and public spaces, creative cooperative agreements for trail management and maintenance may be crucial to ensure completion of the Little River Trail and other local multipurpose trails.

Maintenance costs along existing regional trail systems are not insubstantial. While often implementation grants can be received for trail construction, there are fewer funding operations to pay for ongoing maintenance and operation costs. Over the past decade along the Hammond Coastal Trail, Humboldt County Public Works has dedicated on average $5,000 per mile per year on maintenance costs. This annual maintenance cost is similar to that of the Bear Creek Greenway in Jackson, County Oregon, which has averaged close to $6,600 per mile per year and which is apportioned to each jurisdiction through which the trail passes.

Trail monitoring and safety is another component to trail management which may entail volunteer “eyes and ears” on the trail but also periodic patrols by parks maintenance staff and law enforcement. In particular monitoring trail heads, which are the most publicly accessible and visible sections of the trail, will be important to deter illicit uses. Well-designed trail heads with lighting in key locations can reduce the ongoing maintenance needs incurred by poorly laid out trail support facilities.

Fortunately Little River Trail project partners are in close communication through the Little River Trail Task Force and there are many helpful precedents for creative cooperative maintenance agreements among jurisdictions and community groups. Many communities throughout the nation have been able to expand their trail systems by formalizing multi-agency collaborations to maintain trail sections and distribute long-term cost-share commitments for operations and maintenance among cooperating agencies. These communities demonstrate that having multiple entities maintain sections of trail may be more feasible than identifying one lead trail manager for the entire length of trail.

Example Cooperative Trail Management Agreements

The Humboldt County Association of Governments (HCAOG) has compiled several examples of cooperative trail management agreements and Memorandums of Understanding (MOUs) between counties, cities, state departments and other governments and local entities to help aid the planning of trails across jurisdictional boundaries here in Humboldt County. Some maintenance agreements entail fiscal partnerships between jurisdictions while one jurisdiction conducts the actual maintenance along the entire trail length. Other agreements outline how multiple jurisdictions plan to maintain distinct trail sections and other amenities within their

jurisdiction. In addition, many cooperative agreements have been developed between a government entity and an independent group or non-profit for specific trail building and maintenance tasks.

These trail management and maintenance agreement examples may serve as models for Little River Trail proponents to develop long-term cooperative partnerships along this 1.5 mile length of trail. This Feasibility Study found that the Little River Trail is ripe for strong collaboration in trail development and management. So what type of collaboration for trail development and management will be the best fit for the Little River Trail?

Potential Trail Management Partners

Many state, local and non-profit entities have expressed interest in continuing discussions around identifying a lead entity for the implementation of the Little River Trail and also creating a trail management agreement to share in the responsibility of trail upkeep and operation. Although HCAOG, as a planning agency, would likely not enter a trail management agreement, support from HCAOG will continue to be essential for fund seeking, regional coordination and development of a cooperative trail management agreement.

The following details the capacity and interest of potential trail management entities.

The **County of Humboldt Public Works Department** manages the existing sections of the Hammond Coastal Trail, except for the section through Hiller Park maintained by McKinleyville Community Services District, and would be a likely trail manager for the Little River Trail because of the proximity of the Hammond Coastal Trail and the County's extensive experience operating multipurpose trails. The County successfully manages an extensive network of 17 County parks totaling over 900 acres, including Clam Beach and Moonstone Beach just south and north, respectively from the Little River. The County Public Works Department has expressed interest in partnering to assist the extension of the Coastal Trail north towards Westhaven, especially if the trail route added to the scenic quality of the existing sections of the Hammond Coastal Trail. Thus, as detailed in Chapter 5, this study recommends the more scenic route of the southern section of the trail through the dunes.

Although the County may be the most experienced operating multipurpose trails and have the greatest capacity for ongoing trail maintenance, the County is currently taking on the development of other new trail systems and public access areas which could limit its capacity to advance the Little River Trail. The County has been taking the lead on furthering designs for sections of the Humboldt Bay Trail and is considering accepting property in the Ryan Creek watershed to create a new community forest. These ongoing projects could limit the resources the County has to be the lead on the Little River Trail.

California Department of Transportation (Caltrans) District 1 has been an active partner on this feasibility study and has significantly supported the development of this study through staff

time and resources. Caltrans has been involved in the Little River Task Force since its inception and has formally agreed to collaborate for a non-motorized crossing of the Little River. Caltrans has a vested interest in ensuring safety for all modes along its roadways and has recognized that the current Highway 101 bridge over Little River is not adequate for pedestrians traversing the California Coastal Trail. Caltrans also coordinates the Pacific Coast Bike Route (PCBR) along Highway 101 and is currently examining opportunities for clearly marked scenic alternate routes throughout District 1 for touring cyclists to traverse alternative routes parallel to Highway 101.

Caltrans has been actively involved in advising and reviewing bridge crossing design options for this feasibility study, including seeking design review consultation from Caltrans headquarters. As the preferred trail alternative includes a proposed deck widening of the existing highway bridge, Caltrans' involvement and leadership will be essential for the realization of the complete Little River Trail. Following this study, Caltrans should help advance this bridge modification project through their project development process and serve as the lead for this trail section. The State Coastal Conservancy and local trail advocates will continue to support Caltrans to further this trail bridge section through Caltrans' project development process.

Under the new transportation bill and the Active Transportation Program SB-99 (2013), Caltrans cannot be the recipient of bicycle and pedestrian project funding, namely funding through the Active Transportation Program. Therefore, Caltrans and local trail advocates should support prioritization of regional transportation funding through HCAOG and utilization of Caltrans District 1 specific funding (e.g. Minor A or Minor B funding) to complete the Little River Trail bridge section.

Even though the majority of the Little River Trail alignment may be within Caltrans right-of-way, Caltrans will likely only maintain the portion of the trail on the modified highway bridge structure. The trail lead entity will need to pursue an encroachment permit for the trail sections within Caltrans right-of-way (see Chapter 6 for more details). In addition, trail managers will need to enter in to a maintenance agreement with Caltrans in order to maintain and operate the trail facility within Caltrans right-of-way.

California State Parks operates the Little River State Beach, adjacent to the proposed Little River Trail on both the north and south sides of the river. The North Coast Redwoods District is very supportive of closing the gap in the Coastal Trail across the Little River, and believes that Little River State Beach provides an excellent opportunity for public access to the beach resources in the area as well. However, the District has limited staff availability and financial flexibility and not able to actively advance the trail at this time. In addition, State Parks tries to avoid managing facilities outside their property boundaries. State Parks preferred not to explore a paved multipurpose trail through the dunes in Little River State Beach, as this trail purpose does not fit with State Parks' trail standards. Staff were concerned that a multipurpose trail within Little River State Beach could create conflicts with equestrian access, and

acknowledged the difficult in potentially modifying the existing Little River State Beach management plan to accommodate a paved trail.

The existing Little River State Beach management plan denotes the Coastal Trail traversing the Caltrans right-of-way outside of Little River State Beach and emphasizes the need for another entity to pursue the completion of this CCT section. Fortunately, the management plan does include a trail connection from existing State Park trails to the proposed Little River Trail bridge crossing. This connection would be essential to connect the new Little River Trail and bridge crossing to the scenic trails on Little River State Beach accessible to pedestrians and equestrians.

State Parks was also open to the prospect of designing a short routing of the Little River Trail through State Parks property to avoid a dune hollow wetland along the preferred alignment. Continued collaboration in the next design phase for the trail will identify which entity would take the lead for environmental compliance for the section of trail that traverses State Parks' property. Project proponents would likely pursue a memorandum of understanding with State Parks to define responsibilities of trail permitting, implementation and maintenance for the short section of trail through Little River State Beach.

The **McKinleyville Community Services District (MCSD)** provides water, wastewater, lighting, library and parks and recreation services to the unincorporated community of McKinleyville (over 15,000 people). MCSD's service boundary includes the southern portion of the Little River Trail, as the district provides water and wastewater service to the California Highway Patrol weigh station near the Crannell Road off-ramp. MCSD has interest in expanding their reach of services in the greater McKinleyville area to better serve residents in communities north of Humboldt Bay and south of Westhaven and Trinidad. In addition MCSD already manages several lengths of multipurpose trail within McKinleyville including a portion of the Hammond Coastal Trail through Hiller Park and the School Road Trail spur off the southern section of the Hammond Coastal Trail. MCSD's experience providing trail management services for sections of the Hammond Trail system and working closely with the County of Humboldt Public Works department along with their equipment capacity for maintenance and capital improvements could be an asset for the management of the Little River Trail. While MCSD would likely not be able to sponsor the project and serve a lead entity, the district could partner for maintenance duties once the trail is constructed.

There is also growing interest from **local tribes and land trusts** that may be considered non-traditional partners in the development and management of multipurpose trails including the Trinidad Rancheria and the Trinidad Coastal Land Trust.

The **Trinidad Rancheria**, located south of Trinidad and 2.3 miles north of the northern Little River Trail terminus, is highly interested in expanding quality of life resources for its tribal members and visitors to its business ventures, and is very interested in staying involved in the advancement of the Little River Trail. The Rancheria has also been very successful at leveraging

local, regional and state and private funding to enhance infrastructure and economic opportunities for the Rancheria. Rancheria staff emphasize that regional partnerships will be key to completing the trail and expanding tourism opportunities in our region. There may be opportunities for the Rancheria to join a maintenance partnership as this project progresses, perhaps utilizing funding for maintenance of infrastructure through the Tribal Transportation Program. In addition, partnerships may be possible for trail head patrols by Trinidad Rancheria security staff.

The Trinidad Rancheria is in the beginning stages of working with Caltrans to create a new interchange off Highway 101 south of Trinidad. This new interchange seeks to improve access to the Rancheria and their business ventures including the Cher-Ae Heights Casino and a proposed hotel. Although this project may be in the 8-10 year timeframe, there may be opportunities for the Little River Trail through mitigation from this interchange project or other projects' impacts.

Local land trusts, operated by dedicated community volunteers, such as the Trinidad Coastal Land Trust, may be well suited to collaborate on a lower level of trail maintenance duties. There is now no restriction on Caltrans entering into maintenance agreements with eligible non-profits, which could enable local non-profits to assist with trail maintenance duties within Caltrans right-of-way.

The **Trinidad Coastal Land Trust (TCLT)** has agreed in principle to accept ownership of the Green Diamond property at Little River in order to facilitate the completion of this section of the California Coastal Trail. The TCLT is a 501(c) (3) non-profit based in the Trinidad area and has been involved in the Little River Trail since the formation of the ad hoc Little River Task Force in 2008. TCLT was formed in 1978 as the Humboldt North Coast Land Trust and its mission is to acquire, hold, use, and develop land for public access to promote the ecological protection of the North Coast and to retain those lands as open space for the benefit of all people. TCLT owns seven properties in fee and holds open space and public access easements on thirteen other properties. In 2013 TCLT accepted the Loop Place Trail easement, approximately one-half mile north of the northern terminus of the Little River Trail at Scenic Drive, to provide a more direct route to Houda Point and the beaches along Scenic Drive from the residential heart of Westhaven. TCLT accepted another beach access easement near Patricks Point State Park in 2013 as part of its mission to ensure public access to the coastline. Accepting the Green Diamond property at Little River would similarly ensure and enhance public access opportunities in the Trinidad – Westhaven area and would be in line with TCLT's mission.

TCLT has a seven to eleven person Board of Directors and several advisors who work on special projects for TCLT. TCLT has a membership of approximately 150 upon whom TCLT relies for financial support through annual membership dues and assistance with projects such as trail construction and maintenance, monitoring, and tabling at local events. The Green Diamond

Moonstone property at Little River is important to TCLT as both open space and as an access route to TCLT properties and other coastal access points. The Little River property falls within TCLT's area of interest and mission.

If the TCLT is able to accept the Green Diamond property, there will be more options for routing of the Little River Trail through this property south from the Scenic Drive trail head, and additional opportunities for public access to the Little River estuary will abound. The TCLT provides volunteer maintenance and occasional in-depth, contracted maintenance on their existing properties. The TCLT would likely serve in a volunteer trail stewards role for the section of trail that would traverse the Moonstone property, in partnership with other trail management entities.

The **California State Coastal Conservancy** (SCC) has been a vital partner helping to advance the Little River Trail, as the completion of the California Coastal Trail is a top focus of the SCC. Besides grant awards for coastal access projects, SCC staff also provide valuable technical assistance and grant writing assistance. The SCC has continued to seek acquisition funding for the GDRC parcel and further opportunities to fund the design and permitting of the Little River Trail.

Community Involvement in Trail Maintenance

Photo 20 Volunteer Trail Stewards at work on the Hikshari' Trail

Fortunately, over the past several years the Humboldt County region has advanced collaboration in regional trail efforts and community involvement in trail maintenance to lessen the burden of trail maintenance from individual jurisdictions and municipalities. A volunteer supported program, the **Volunteer Trail Stewards (VTS)**, was formed several years ago as a cooperative partnership between two local non-profits the Humboldt Trails Council and Friends of the Dunes. The VTS aims to help jurisdictions meet the challenges of operations and maintenance along existing and future trails. Volunteers act as eyes and ears on the ground, aiding jurisdictions in monitoring trail usage and performing light maintenance duties on local trails. The program trains Stewards to report back on trail conditions after each walk, provide trail information to other users, help prioritize maintenance needs, and organize monthly maintenance days to improve the trail environment. Currently the VTS are working with the County of Humboldt along the Hammond Coastal Trail, Friends of the Dunes along their trails in Manila, the City of Arcata in the Arcata Community Forest and with the City of Eureka along the Hikshari' Trail. The VTS program has

demonstrated capacity to consistently get neighbors and frequent users of trails involved in the daily operations and maintenance of their local trails and reduce this maintenance burden for the jurisdictions actively building more trails. The Trinidad Coastal Land Trust and VTS are well positioned to bring this community involvement in trail maintenance to the Little River Trail.

Funding Trail Operations and Maintenance

It is often difficult to find dedicated funds for ongoing operations and maintenance of trails. Currently a large percentage of funding for maintenance of the Hammond Coastal Trail comes **from Transportation Development Act (TDA) funds**, technically the third priority for TDA funds following funding for transit services and planning. TDA funds are state block grants awarded through HCAOG local jurisdictions for transit, bicycle, and pedestrian projects. As additional transit needs and other transportation needs arise in the unincorporated County, there may be less TDA funds available for trail maintenance.

Another opportunity may be seeking a **maintenance endowment** during the negotiations of the purchase of the Green Diamond Moonstone property. This endowment could assist the Trinidad Coastal Land Trust in maintaining this property and any trail sections that traverse the property. Including a maintenance endowment with the sale of a property can be common under negotiations with land trusts and greatly enables the accepting organization to perform future trail maintenance.

Crews from the **California Conservation Corps (CCC)** may be able to assist with specific annual maintenance and repair along the trail; however, CCC labor may not be used to perform regular maintenance duties. The CCC is a public service program employing youth in natural resources and also occasionally provides assistance on construction projects. The CCC may be written into grant applications as a project partner, and project sites must be public land or publicly accessible.

Several local cities have passed **ballot measures** providing for additional sales tax to support and enhance public safety, infrastructure and trail and park maintenance. The City of Arcata passed Measure G in 2008 which levies a 0.75 percent increase in sales tax for projects that increase bicycle and pedestrian safety. The City of Eureka passed Measure O in 2010, funds from which support increased public safety staffing and activities. The City of Trinidad voters approved a sales tax increase through Measure I in 2008 to provide additional support for trail and park maintenance and protection.

Funding from a similar ballot measure, passed on a regional level of the Humboldt Bay and Trinidad regions, could support trails and open space in the greater Humboldt Bay region. There may be opportunities to support a regional ballot measure for a sales tax increase to support a diversity of transportation improvements, including trails and improvements on local roads. HCAOG is continuing to research this opportunity and is planning to conduct polling around this

issue in a year or two. This new source of funding could assist in development of regional projects like the Little River Trail.

9. Final Recommendations and Next Steps

This Little River Trail Feasibility Study sought to outline a preferred alignment for a multipurpose trail connecting the Hammond Coastal Trail to Westhaven, identify a preferred trail crossing of the Little River, research property acquisition opportunities with a willing seller along the proposed trail route, advance progress on trail management strategies and further develop community support to advance a next phase of the California Coastal Trail.

This draft feasibility study will be reviewed by State Coastal Conservancy staff, agencies of the Little River Trail Task Force and interested members of community-based organizations and the public including attendees at the public site visit.

It is recommended that the preferred alignment of the Little River Trail and bridge crossing be incorporated into future updates of the County of Humboldt Local Coastal Program (LCP). As the County seeks funding to update portions of their LCPs it will be important to ensure the preferred alignment for the Little River Trail, recommendations for other portions of the CCT through Humboldt County and supporting CCT policies are incorporated into future LCP updates. There could be future opportunities to ensure CCT easements if certain coastal parcels change ownership.

Although this feasibility study explored many aspects to advance the progress of the Little River Trail, there are many remaining next steps for subsequent phases of work. These next steps include engineered designs and environmental compliance for the trail and bridge crossing, fund seeking for trail design and compliance, implementation fund seeking, acquisition of the GDRC parcel and furthering cooperative trail partnerships. The commitment of a lead entity for the trail and cooperating agencies and organizations will be essential for the design and permitting phase of the Little River Trail.

As the steps below indicate, implementation of the Little River Trail will take several years, perhaps 5-10 years. In addition, continuing to garner community support for the Little River Trail within the Trinidad, McKinleyville and Westhaven communities and at HCAOG will be key to seeking competitive implementation funding and programming funds at the regional level.

Engineered Designs, CEQA and Environmental Permitting

The next project phase for the Little River Trail should seek detailed engineered designs and draft environmental compliance documentation for the Little River Trail. Unlike many of our region's other priority multipurpose trails in progress, the Little River Trail does not follow the North Coast Railroad Authority (NCRA) right-of-way; reducing potential conflicts in rail-with-trail design negotiations and approvals that are currently being worked through elsewhere across the region.

With adequate funding this phase should work towards 75% engineered designs, an Initial Study and CEQA compliance document, permit application and interpretive signage design and content. This next phase should also identify the lead agency for environmental compliance and trail implementation, (see discussion below). Environmental compliance will occur in parallel with the creation of trail and bridge crossing designs. Although a lead agency will need to be identified for the majority of the trail length, Caltrans will be the lead entity for compliance for the bridge section. Additionally, the next design phase will identify a partnership with State Parks for any potential incursion on to State Parks' property along the southern section of the trail. In addition, a firm with archaeological and cultural resource expertise or tribal historic preservation officers with local tribes should be retained to assist with a thorough cultural and historic resource investigation to support CEQA compliance for the trail and ensure trail design and implementation does not impact cultural resources in the Little River area.

There are several areas that will require further research during the trail design phase:

- A survey of the southern section of the proposed trail route to accurately ascertain the location of Caltrans right-of-way and State Parks' property
- Trail routing options to skirt the dune hollow affecting the southern section of the trail
- The junction and crossing of the trail at Crannell Road
- Design needs through gullied sections of highway fill slope along the northern trail section
- Designs and specifications for trail amenities (e.g. benches, signage, etc)
- Design and layout of the northern trail head at Scenic Drive

Caltrans will continue to be an integral partner to ensure completion of the Little River Trail as the preferred bridge crossing alternative utilizes the existing highway bridge. Caltrans has agreed to pursue a Project Study Report (PSR) for the bridge crossing segment of trail. A PSR is an engineering report whose purpose is to document agreement on the scope, schedule and estimated cost of a project so that the project can be brought in to Caltrans' project development process and considered for inclusion in future funding programming, such as the State Transportation Improvement Program (STIP). It is hoped with future funding Caltrans may be able to advance the redesign of the Little River bridge through internal processes to reach a 75% to 90% design with associated environmental compliance documentation. The Little River Trail Task Force would also help support Caltrans seeking additional funding for this bridge design phase. Little River Trail proponents will also need to stay in close communication with Caltrans staff as the Little River bridge is advanced as a project to ensure coordination with the next phase of trail design and permitting.

It is likely that final design and permit submissions for the trail will occur once implementation funds are secured.

Implementation Fund Seeking

The Humboldt County region recognizes that creative funding requests will be needed to further the goal of connecting communities through a regional trail system. The Little River Trail is ripe for creative partnerships in the funding arena.

The trail funding climate has changed considerably since several Coastal Trail implementation projects have been completed in the Humboldt Bay area. Several sections of the Hammond Coastal Trail and the Elk River Hikshari' Trail in south Eureka utilized state proposition funding through the Natural Resources Agency and State Coastal Conservancy for design, permitting and construction. These state proposition funding sources were essential in realizing the completion of these important regional trails. However, these proposition funding sources have now been almost fully allocated, and trail proponents will need to be more creative in attracting funding for design, permitting and construction. Utilizing federal transportation funding programs including the Active Transportation Program and local business partnerships will be essential for the Little River Trail.

Existing partnerships with the **SCC** will continue to help support and advance the next phase of the Little River Trail. Although proposition funding has dwindled at the state level, SCC staff have been instrumental in grant writing and fund seeking for public access endeavors throughout the coast. Additional support from the SCC to get the Little River Trail "shovel ready" may assist in implementation funding seeking from other sources.

The bulk of non-motorized transportation funding available to the state of California through the federal Moving Ahead for Progress in the 21st Century Act (MAP-21) transportation bill has now been coalesced into the **Active Transportation Program (ATP).** Previously separate programs including the Transportation Enhancements, Bicycle Transportation Account and Safe Routes to Schools program have been joined in to one program for non-motorized transportation projects, while Safe Routes to Schools programs retain a set aside amount of the ATP fund.

The ATP will include a call for projects every two years starting in March 2014, and the program is administered by the California Transportation Commission (CTC) and Caltrans. With the ATP call for projects every other year, there will be less frequent opportunities to seek non-motorized transportation funding. The ATP call for projects involves a statewide competition for eligible projects and a set aside of funds competitively available to jurisdictions in small urban and rural regions. The ATP program currently has a small urban and rural region set aside of $36 million in its first round of funding allocations in 2014.

Through HCAOG, the region has prioritized completion of the Humboldt Bay Trail, and HCAOG is working closely with the Caltrans, the County, the City of Arcata and City of Eureka to fully fund the Humboldt Bay Trail by the time Caltrans will be submitting their Coastal Development Permit for the Eureka-Arcata Corridor Improvement Project in 2016. These agencies are working cooperatively to submit applications to the ATP for the call for projects cycle in 2014 and 2016. Thus it will be imperative to keep the Little River Trail at the forefront of regional non-motorized project priorities at HCAOG to realize support for these competitive ATP funding opportunities.

The **Environmental Enhancement and Mitigation Program** (EEMP), which several trail projects throughout the north coast region have utilized in the past, will continue to be a standalone program with revised guidelines. The EEMP program provides funding to projects that contribute to the mitigation of the environmental effects of nearby transportation projects. The 2014 EEMP program now has three main categories of eligible projects: Urban Forestry, Resource Lands and Mitigation Projects Beyond the Scope of the Lead Agency. The Resource Land category of EEMP projects could be applicable for the Little River Trail and Moonstone Parcel as eligible projects can involve acquisition, restoration or enhancement of resource lands to mitigate the loss of resource lands nearby to a transportation project. An EEMP project can also expand public access to outdoor wildlife/nature-oriented recreation.

The **Recreation Trails Program (RTP)** is another potential funding source, overseen at the state level by California State Parks, that currently has $1.47 million for the entire state of California for 2013/2014 fiscal year. A strong partnership with our local State Parks district could assist in being competitive for the RTP as the Little River Trail could serve as a vital connection and recreation amenity between existing State Parks properties and trails. Further developing the vision for the Little River area as a recreation and tourism destination for bicyclists, pedestrians and equestrians will be essential to be competitive for the RTP.

Recently, HCAOG voted to set aside **2% of the region's Transportation Development Act (TDA) Local Transportation Fund (LTF)** for non-motorized transportation projects. For the 2013 fiscal year, this resulted in about $80,000 for the HCAOG Technical Advisory Committee (TAC) to allocate to local jurisdictions. While these 2013 funds were allocated towards the Humboldt Bay Trail, future allocations could assist the Little River Trail to further progress in final design and environmental permitting.

Recently **Caltrans District 1 has utilized Minor A and B funding**, allocated from Caltrans Headquarters to each district, to help advance trail and bicycle-related infrastructure improvements along the North Coast. Caltrans District 1 has utilized Minor B funds for highway shoulder improvements along Highway 1 in Mendocino County, heavily traveled by bicycle tourists. Minor B funds are limited to $270,000 and are fiscally constrained. Caltrans also offered Minor A funding as a match in support of the City of Arcata's Rail with Trail Connectivity

Project in conjunction with the Eureka-Arcata Route 101 Corridor Improvement Project. Dedication of Minor A funds requires approval from Caltrans Headquarters and rarely occurs for projects outside of the Caltrans. As Caltrans has been an active partner during this feasibility study and will continue to be an active partner in further the bridge crossing section of the Little River Trail, utilizing small funding opportunities such as Minor B funds could help advance the trail.

Bikes Belong is an organization sponsored by bicycle manufacturers with the intent to increase bicycle riding in the United States. Bikes Belong provides grant opportunities up to $10,000 to non-profit organizations and public agencies seeking to support bicycle facility and advocacy efforts. Funding from Bikes Belong must not exceed 50% of a project's budget. Eligible projects include paved bicycle paths, rails-to-trails and mountain bike trails.

A highly competitive federal grant program through the U.S. Department of Transportation, Transportation Investment Generating Economic Recovery (**TIGER**), has continued for a sixth round in 2014. In order to be competitive, projects must have full design and environmental compliance complete and demonstrate strong partnerships and community need and support for the project. Many Humboldt communities, including the City of Arcata for the northern section of the Humboldt Bay Trail, are applying to TIGER in 2014. The next round of TIGER may include planning grants, which could be a potential funding source for next steps for the Little River Trail.

In addition, it is anticipated that the state of California may pursue a voter-approved bond for natural resource and coastal projects as early as 2016. A future bond could enable additional funding opportunities for coastal access projects, like the Little River Trail.

Acquisition of the Moonstone Parcel

The acquisition of the Moonstone Parcel from Green Diamond Resource Company will be critical to realize the long-term vision for public access and coastal resource protection in the Little River area. In particular, the Moonstone Parcel would be essential to ensuring safe access and a welcoming entrance at the proposed northern trail head for the Little River Trail, as the parcel straddles half of the Scenic Drive cul-de-sac. This parcel's amazing diversity of habitat and access to the Little River estuary would also greatly enhance the interpretive, nature study and conservation goals of the Little River Trail project. The acquisition would also provide an opportunity for off-channel habitat enhancement at the estuary, particularly important for high-flow refugia for juvenile salmonids and other species. The SCC, TCLT and RCAA will continue to seek funding opportunities for this acquisition and look for joint funding opportunities with other high priority coastal habitat properties along the north coast. Acquisition funding sources may include the North American Wetlands Conservation Act, State Coastal Conservancy, EEMP or other state and federal habitat conservation and acquisition funding sources.

Cultivating Regional Support

Community support and partnerships have been be essential in regional planning efforts to ensure trails and "complete streets" projects are moved forward as priority transportation projects in our region. Many local advocates and organizations have demonstrated that these "complete streets" projects and an expansion of our regional trail system are important to the health of our communities, quality of life and economic vitality. As dedicated trail funding dwindles, local advocates need to make the case for these multi-modal and non-motorized projects as priority transportation needs of the community.

RCAA and community partners will seek to present the final Feasibility Study to the HCAOG Board and Technical Advisory Committee, McKinleyville Community Services District and Trinidad City Council in order to elevate the discussion of the Little River Trail within local decision-making bodies that have an opportunity to help advance partnerships for completion of the trail. Although the trail does not traverse through the City of Trinidad, the city has an avid interest in expanding the trail system in the greater Trinidad area. Support from city representation on the HCAOG Board could help grow support for the Little River Trail at HCAOG.

HCAOG, as the regional transportation planning agency for Humboldt County, is leading local coordination of prioritizing transportation projects and planning for programming of transportation funding. Community members and cooperating agencies in the McKinleyville, Westhaven and Trinidad communities will need to **grow further support for the Little River Trail in order to ensure the Little River Trail is elevated as a regional transportation priority** – not only as a priority multipurpose trail connection but also as a priority *transportation project* to connect the communities of McKinleyville and Westhaven where currently Highway 101 is the only public right-of-way connection. Indeed, the Little River Trail has been included as a priority transportation project in the draft 2014 Regional Transportation Plan (RTP) update lead by HCAOG. Community involvement in local and regional decision-making around transportation will be essential to further the Little River Trail.

Closing

The Little River Trail promises to create a safe, non-motorized connection between coastal communities, enhance coastal access opportunities and inspire appreciation of this natural area. The goals of transportation, coastal appreciation and resource protection can be met through the Little River Trail project. Many opportunities exist for partnering for trail management, maintenance and funding to ensure completion of the Little River Trail. Let's keep expanding our regional system for connected communities in coastal Humboldt County!

Appreciation

The project team would like to thank the individuals and agencies involved in the Little River Trail Task Force for guidance, feedback and leadership throughout this planning process. The team also received many helpful comments and input from community members who recreate in, live near and love the Little River area. As the California Coastal Trail continues to develop throughout Humboldt County, we are deeply appreciative of the state vision for coastal access for all users along the coast of California. The leadership of the state legislature to set the vision for the CCT, and the steadfast work of the State Coastal Conservancy and California Coastal Commission to advance the CCT has enabled the California coastline to remain a natural beauty and quality of life asset for generations to come.

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Appendices

Appendix A – California Historical Resources Information System (CHRIS) report

Not Included In Public Document

Appendix B – Little River Trail Task Force Workshop Summary

Appendix B: Little River Trail Task Force Workshop Summary

The Little River Trail Task Force convened for a workshop on Wednesday, July 10, 2013 at Trinidad Town Hall to discuss the goals of the feasibility study, an initial analysis of trail alignment options and research needs and funding opportunities and next steps for the completion of the feasibility study. Attendees included representatives from groups previously engaged in the Little River Trail Task Force, tribal historic preservation officers from several tribes, and consulting bridge engineers. An overview presentation was provided on the history of the Little River Trail effort, initial trail alignment research, trail bridge crossing considerations and trail management, and funding strategies. Next, workshop participants provided assistance to guide next steps in trail alignment research, feedback on funding opportunities, and potential trail management structures. This input helped guide subsequent steps on the feasibility study. The following pages details the attending organizations and summary of discussions from the workshop.

Attending Organizations:

Bear River Band of the Rohnerville Rancheria

Blue Lake Rancheria

Caltrans

Green Diamond Resource Company

Humboldt County Association of Governments (HCAOG)

Madrone Enterprises

Morrison Structures

Redwood Community Action Agency (RCAA)

State Coastal Conservancy (SCC)

Trinidad Coastal Land Trust (TCLT)

Wiyot Tribe

Brief History

An effort to develop a non-motorized, paved multipurpose trail connection across Little River has been ongoing for over 27 years. There has been much interest from the Westhaven and Trinidad communities to have safe off-highway access south to connect with Humboldt Bay communities. Highway 101 is the only public road across Little River, and although pedestrians and bicyclists are allowed on Highway 101, safe, separated facilities do not exist to encourage non-motorized users. The Hammond North Coastal

Trail Analysis took a macro-level look at alternatives to cross Little River, preliminarily looking at options on the west and east side of Highway 101. The east side was determined to be less feasible due to private property concerns, topographical constraints, and wetland impacts. The Humboldt County Coastal Trail Implementation Strategy (2011) deemed this section a gap in the California Coastal Trail (CCT).

Previous efforts tried to incorporate a separated bike/pedestrian facility during the Highway 101 bridge upgrade in the late 1980s and also looked at crossing options on the existing bridge. A cantilever trail option was deemed infeasible by Caltrans due to possible weight limitations of such a structure on the existing footings. The Little River Trail Task Force met in 2008 and learned that recent seismic and structural upgrades to the highway bridge filled in the middle section of the bridge, enabling other separated, non-motorized facility options to be considered on the existing bridge.

The Little River Trail Task Force met again in 2012 to outline next steps and prepare for a grant application to conduct a feasibility study. The State Coastal Conservancy awarded RCAA a grant to conduct the Little River Trail Feasibility Study in cooperation with the task force. This current study, to be completed by January 2014, involves examining trail alignments and bridge crossing opportunities and advancing the opportunity for non-profit or public acquisition of the Green Diamond parcel just south of Scenic Drive and west of Highway 101.

State Parks has completed the Little River State Beach (LRSB) trails south of the Little River bridge. One of the trails that is currently classified as pedestrian only may be re-classified as an equestrian trail. There may be opportunities for the proposed trail to tie in to the trail system at LRSB. The Little River area is rich in history and is recognized as the boundary between Yurok ancestral territory to the north and Wiyot ancestral territory to the south. Presence of cultural resources will be carefully considered in the design and permitting phase of the project through further consultation with the Tribal Historic Preservation Officers.

Trail Alignments

The draft alignments shown attempted to balance environmental, topographical, and the concerns of all the agencies involved to connect the southern end of Scenic Drive with Clam Beach Drive. This effort seeks to connect the California Coastal Trail between Scenic Drive and Clam Beach Drive. Alternative 1 alignments remain entirely within Caltrans right-of-way from Scenic Drive to the Crannell Road interchange. Alternative 2 alignments traverse Green Diamond and State Parks property entirely outside the Caltrans right-of-way.

It was mentioned that the Scenic Drive onramp onto Highway 101 has a relatively recent guardrail that creates dangerous conditions for cyclists. The onramp requires motorists to get up to speed fairly rapidly, while watching for southbound cyclists on the on ramp and also checking for traffic southbound down the highway, which is partially concealed by trees and the hillslope that block the view of the merging traffic. This is a very dangerous point of conflict between cyclists and motor vehicles, one that this trail would alleviate.

The terrain of the northern most section contains steep slopes towards the highway and wetlands and dunes towards the river and ocean. There is a large rock outcropping to the southwest and south of the Scenic Drive cul-de-sac that severely limits trail alignment possibilities and requires a more precise understanding of where the Green Diamond property boundary actually is. This is being addressed with a more detailed survey being pursued by Green Diamond and Caltrans that will help to inform the Feasibility Study.

Alignment 1a remains high on the highway fill slope, keeping the best grade possible and remaining above most of the wetlands. It was noted that this is both a very steep slope. This alignment would likely be built using geocells on top of the existing fill - which would limit the disturbance to possible cultural resources - with drainage pipes from highway runoff passing under the new trail. This drainage will be very important in making this section feasible, as erosion and slope stability will be some of the primary concerns in this section.

Alignment 2a stays as close to the Green Diamond property line as is possible. However, there is a steep drop off shortly after beginning the trail that may be a constraint and would make ADA compliance difficult. This alignment also, after the steep slope, traverses much more wetland area, and would require more mitigation and possibly boardwalk sections.

Alignment 1a, moving south, continues to stay close to the base of the highway fill, whereas alignment 1b branches off of 1a to take the route of the old Highway 1. This route has nice tree cover, and is more buffered from the highway. It was suggested that this alignment could also serve as a spur trail to accommodate pedestrian use only, as a way to separate bike and pedestrian needs. These separated use options are an important consideration on steep long slopes.

Alignment 2a, heading south, encounters more wetland and possible dune habitat. Alignments 2a and 1b would require more ground disturbance in a potentially more sensitive landscape. The blue dashed lines show the potential for coastal access spur trails. This shows two possible locations where non-paved hiking paths could meander towards the Little River estuary, even potentially connecting as a loop trail. It was noted by project consultant Sungnome Madrone of Madrone Enterprises that the current flood plain was established post ~ 1985, as the Little River changed its banks. This could alleviate concerns of disturbing cultural resources in this potential coastal access area. The consultant also mentioned that the ground there was stable enough to not require a boardwalk. A trail and river overlook and destination point, located potentially on the north side of the bridge, could be used as a turn-around, which might be necessary for ADA compliance – especially if the trail is completed in phases.

Little River Bridge and Possible Alignments

Alignment 1a uses the existing bridge, requiring traffic lanes to be shifted slightly towards the east – something that became a possibility by filling-in the center of the bridge. This would also require changes to the approaches to the bridge. These changes may also require realignment of the off ramp to the California Highway Patrol truck scales and inspection station..

It was mentioned that the current bridge is 93' wide and was built in 1964, and retrofitted approximately in 1996. The current bridge design is wider than the required regulations, making it feasible to retain standard shoulder widths and add a 10 foot, barrier separated, bike/pedestrian facility on the southbound side. This realignment would require concept approval from Caltrans headquarters, but this might come soon as reviewers are coming to District 1 in July 2013 and initial approval could occur then.

Alignment 1c is a new bridge with a minimum 8'-10' path, still within the Caltrans' right of way, but separate from the existing bridge. This bridge would have the benefits of not interfering with the current highway alignment, and could possibly use the abutment that remains from the old Highway 1 bridge on the south side. It was noted that this bridge would likely have power lines above it. A separated bridge, remaining in the Caltrans' right of way, must follow Caltrans standards for such things as clearance of flood waters, etc. However these standards would be followed outside the right of way as well. Coastal views from the existing freeway would also be a concern depending on what sort of separate bridge structure was designed.

Alignment 2a is a bridge that would be entirely out of Caltrans right of way. As the bridge location shifts west it will require a much-longer span. The exact location of this bridge would determine how it would connect with the State Parks trails on the southern side of the river.

Bridge railings and fencing options that were taken from the publication issued by Caltrans and the California Coastal Commission, "Bridge Rails and Barriers, A reference guide for Transportation Projects in the Coastal Zone" were shown during the Little River Trail Task Force Workshop. The shown options were all TL-4 Barriers and Rails, the required type for speeds in excess of 45MPH and all met the bicycle and pedestrian standards. Fencing and barriers will be included in trail designs and cost estimates in the next phase of the feasibility study.

Potential Alignments South of Little River Bridge

Alignment 1a continues south of the bridge to follow the off-ramp at Crannell Road. Trucks that stop at the truck-scales are also using this off-ramp. This alignment would require new fencing and a k-rail barrier along its entirety. It would also be directly affected by the off-ramp traffic, potentially creating a less enjoyable experience for trail users.

Alignment 1d stays to the east of the current Caltrans fence, but may require an additional fence, deterring access to the highway. This could have the effect of creating a fenced in trail corridor, however it would also be possible to see across the dunes and the state parks dune trail system, and would be more buffered from the highway off-ramp than alignment 1a. This alignment would traverse through the dunes and could have terrain issues that may require alterations to the dunes to maintain the necessary grade.

The green dotted line shows a section of the current state parks dune trail system. Alignment 2a, coming off of the bridge that would be built entirely outside of the Caltrans' right of way, could follow a section of this trail, paving it, to connect to either Alignment 2b or to 2c further south. Paving any part of this trail, after speaking with State Parks, would require a project level amendment of the Little River State Beach (LRSB) Enhancement and Restoration Plan to change the trail use designation. This same challenge would also apply to alignment 2b. It would be ideal to connect any potential alignment with the State Parks system, using a trail connector that would possibly then require a separate Caltrans' longitudinal encroachment (LE), or may be able to be packaged as one LE for the whole project, just as was the case at Vista Point for the Hammond Trail.

Alignment 2c continues to follow the alignment of 2b, but unlike alignment 2b the grade is considerably more manageable, and next to only a small single wetland area. It would not require additional fencing, which is the same for alignment 2b, and would allow for a scenic trail experience. Following alignment 2b and 2c would allow the current state parks system to remain unchanged, however it would still require environmental review in creating a new trail. Both alignments 2b and 2c have significant terrain considerations, mostly dunes, and could require the alteration of several dunes to maintain a grade sufficient for ADA accessibility.

Where these alignments reach Clam Beach Drive there are some connection challenges with the existing LRSB parking facility. Possibly another trail connector would be needed to get to the existing crosswalk or an additional crosswalk might be needed at the intersection of Clam Beach Drive and the off-ramp, perhaps requiring a stop sign for west bound traffic. It was noted though that there is little traffic from Crannell Road to Clam Beach Drive.

Issues to Follow Up with Regarding Trail Alignments

It was noted that Alignment 1a follows the planned California Coastal Trail alignment in the Little River State Beach Coastal Development Permit and that the Coastal Commission approved this 5 years ago. However, this section of trail along the highway was never planned to be built by California State Parks and it seems that it was not recorded at Caltrans, and therefore potentially not CEQA approved. It was also agreed that although it makes sense to think about construction in phases, all new trails should be permitted as one package.

The question was asked, 'Why are all of the alignments either entirely in or out of the Caltrans right of way'? It was agreed that following opportunities on the ground may make for a better trail regardless of property boundaries.

It was noted that it would be important to get Coastal Commission staff involved and informed early in the process. It was also noted that we should prioritize the planning of the path for those that are currently using the highway, mainly bikes and pedestrians. Although equestrians may access sections of the planned trail in the future, horses typically cross the river at Moonstone Beach except when Little River is at flood stage or experiencing high flows.

There was discussion about potential Wiyot and Yurok village sites on both sides of river and burial sites, the risk of disturbing cultural resources though is higher outside of Caltrans' right of way (and particularly east of the freeway).

Overall there was the need to focus more on cost estimates and more plan details with options, showing things like fencing locations, and some other details to better determine priority alignments at this stage of the planning process.

Funding Sources for Implementation

Many potential funding opportunities were discussed. It may be important to combine funding sources for creating the trail on the bridge with highway operations funds to pay for highway realignment. With the new transportation bill, Caltrans cannot be the direct recipient of bike/pedestrian funding. RCAA will continue to research potential transportation and recreation trail funding opportunities.

With local support, SCC may be able to assist with design and construction; however, the timeframe is crucial, and funds are available only for capital costs.

Operations and Maintenance

Several options for joint trail management were discussed, as multiple entities maintaining sections of the trail may be more feasible than identifying one trail management lead. It was brought up that there is now no restriction on Caltrans' entering into maintenance agreements with eligible non-profits, which could enable TCLT to assist. Humboldt County Association of Governments has collected cooperative agreement examples that may help in the crafting of these agreements.

The following was a list of potential operations and maintenance (O&M) funding:

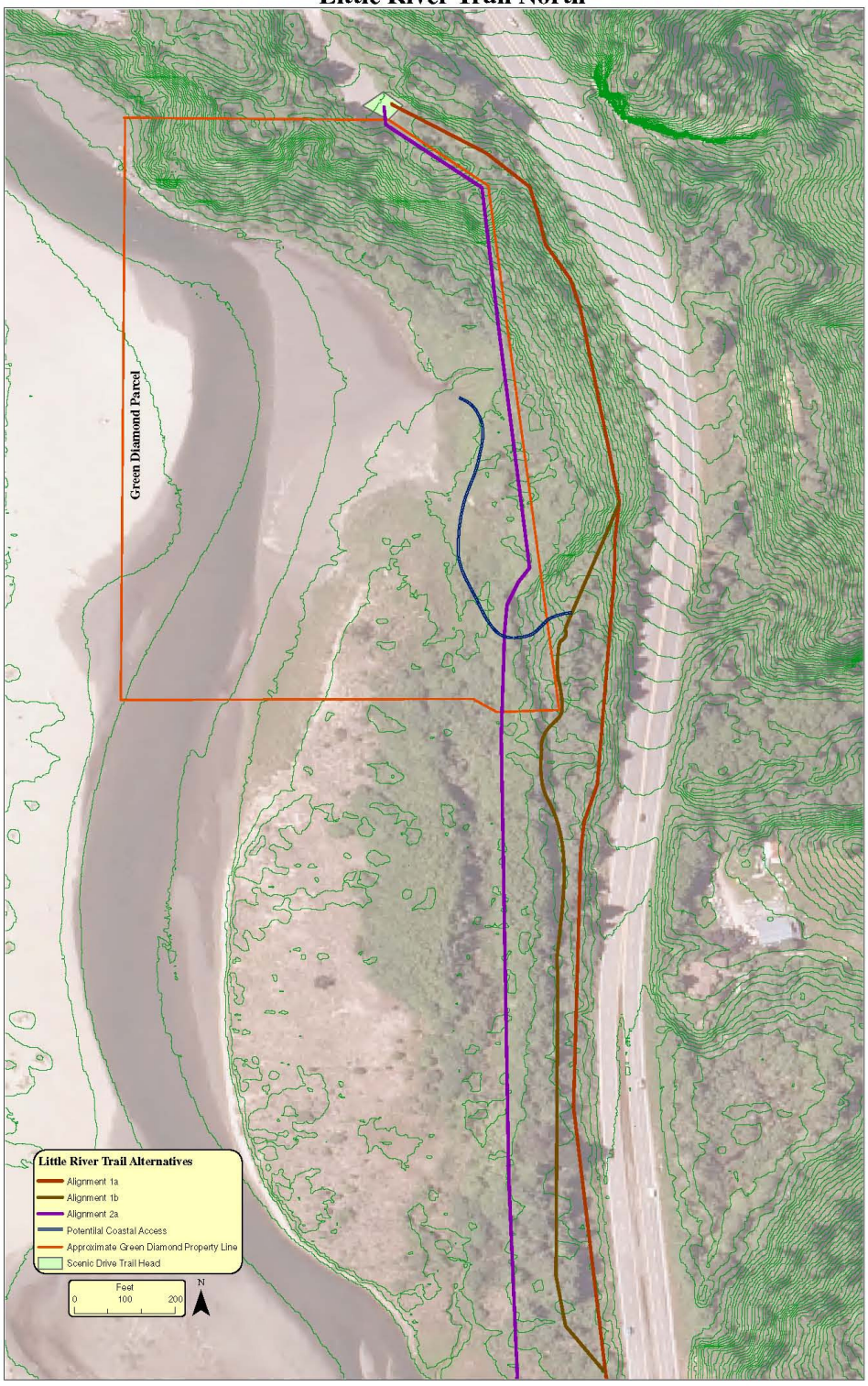
- California Conservation Corps, for maintenance and construction (could bring down costs)
- Trinidad Coastal Land Trust
    - Potential partnership with Humboldt Trail Stewards to assist with maintenance
    - Currently challenged meeting the needs of their current properties
- 2% of TDA Local Transportation Funds through HCAOG (approximately $80,000) is a potential source for O&M
    - These funds are allocated at HCAOG
- Examples of ballot-measure passed sales tax funds
    - Eureka Measure O – Public safety funds
    - Arcata Measure G – Public safety and infrastructure funds
    - Ventura County transportation sales tax – voters supported and committee determines how to spend funds (trails or pot holes) in the north and south parts of the County
    - Need 67% to pass transportation sales tax ballot measure
- Possibly using an endowment from purchase of the Green Diamond property (will follow up)

- Creating an Open Space District, or using an existing entity such as the Humboldt Bay Harbor, Recreation, and Conservation District, to receive maintenance funds through a property assessment, transient occupancy tax, or sales tax

Next Steps

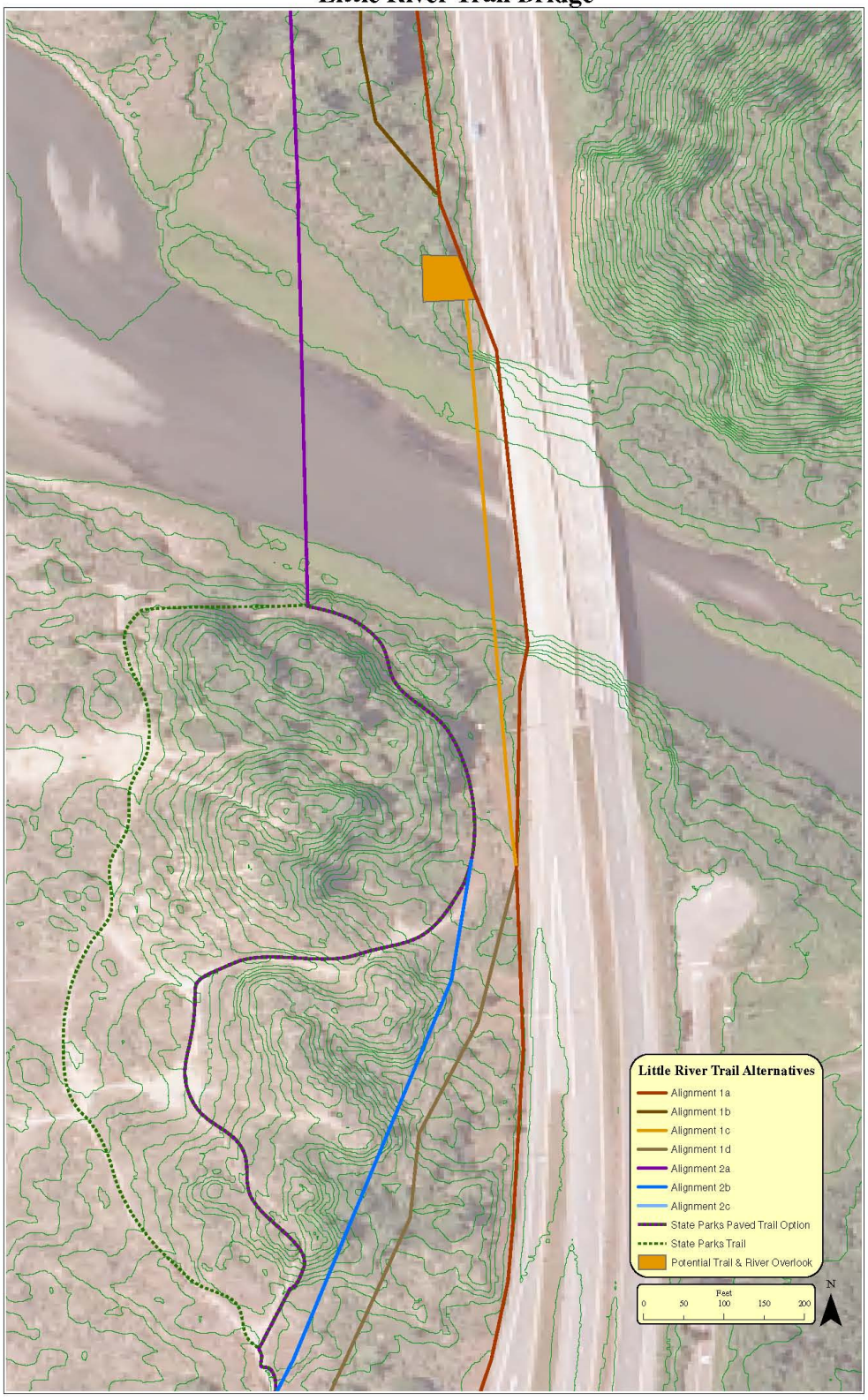
- Refine draft alignments and maps
    - Add existing drainage structures, property boundaries, trail use designations, possible fence/barrier locations
    - Refine clarity of alignments
- Meet with County Public Works
- Generate cost estimates, including permitting and environmental studies, for all crossing options to make the case for the most cost effective option
- Include cost estimates (including fencing/barrier costs) for draft alignments
- Review refined alignments, cost estimates and draft feasibility study by Task Force in Winter 2013
- Continue conversations with Caltrans and Morrison Structures regarding the existing bridge and a field visit in early August
- Plan public site visit for early fall 2013
- Pass along pdfs maps and initial California Historical Resources Information System (CHRIS) report to THPO's who in turn will give further input on cultural considerations

Little River Trail North



Appendix B Figure 1 Overview of North Trail Alignments Discussed at Agency Workshop

Little River Trail Bridge



Appendix B Figure 2 Overview of Bridge Crossing Options Discussed at Agency Workshop

Appendix B Figure 3 Overview of South Trail Alignments Discussed at Agency Workshop

Appendix C – Little River Trail Public Comment Summary

Appendix C: Little River Trail Public Comment Summary

Public feedback on the Little River Trail Feasibility Study was sought throughout the project by reaching out to trail user groups and other stakeholders, hosting a public site visit and walking tour at Little River, and by presenting to specific groups such as the Trinidad Coastal Land Trust.

Little River Trail Public Site Visit Description

A public site visit at Little River State Beach was hosted on October 16 and drew 18 community members for an update on the Little River Trail planning progress combined with a walking tour of the southern area of the proposed trail. Attendees were present from Westhaven and Moonstone Heights, McKinleyville and other communities in the Humboldt Bay area and also represented groups such as the Trinidad Coastal Land Trust, McKinleyville Community Services District, the Volunteer Trail Stewards program, equestrian groups and the Redwood Chapter of the Sierra Club.

A brief presentation was first given which included a brief history, explanation of the vision of the trail, the preliminary alignments being considered, maintenance issues, and next steps in hopes to further enlighten and enliven the discussion. Input from attendees was solicited through comment cards (see below) with questions that were aimed at directing discussion about the trail as well as by project members seeking individual conversations with attendees, asking questions and taking notes. These input strategies enabled the project team to get as much public input as possible. Most attendees to the public site visit presentation also walked along the Little River State Beach Trail to the south bank of the river where project members talked further with members of the community, and discussed more specifics of the potential bridge crossings and opportunities on the project's northern end.

Example public site visit comment card:

Please share any feedback about the Little River Trail! (or email/call Josh at josh@nrsrcaa.org or 707-269-2055)

1) What features along the Little River project area attracted you most?

_____

2) How would you use the Little River Trail? For transportation, recreation or other? How often?

_____

3) Feedback on particular trail alignment alternatives?

_____

4) Any other questions or input?

_____

Public feedback during the Public Site Visit and Walking Tour:

Comments from public site visit attendees have been separated into three categories: *trail alignment, trail management and maintenance and other comments regarding the Little River Trail*. The *Trail Alignment* comments focus on concerns facing alignment options. Making sure the trail has the least environmental impacts, while providing the most scenic experience seemed to be the overwhelming response. Attendees also expressed concerns regarding potential users along the trail. Many attendees desired to separate different user groups, but also to keep the trail design simple as to better ensure implementation.

The comments that are grouped here under *Trail Management and Maintenance Comments* give suggestions on potential partners, possible next steps and potential trail promotion strategies.

The *Other comments regarding the Little River Trail project area* comments show some concern with current bicycle routing around the on/off ramps at Crannell Road and around local highway construction sites. In addition it was noted that the Little River State Beach area is a very popular place for equestrians, with people and horses coming from as far as Redding, regularly to use the trail system and walk/ride along the beach.

Trail Alignment Comments:

- There was a desire to further explore the southbound lane shift to partially accommodate the Little River Trail over the existing bridge.
- Multiple comments were voiced regarding keeping the trail as far from freeway traffic as possible.
- Desire to get a straight bike trail accomplished first, then work towards an expansion of other hiking and equestrian trails in future phases.
- There was concern over which option would have the least environmental impact? Especially between remaining on the Caltrans bridge or creating a new separated bridge?
- Can the separated bridges be lower in order to avoid visual impact?
- It was noted that the new trail should keep close to the highway, preventing more pavement through the dunes area.
- Others preferred a bike trail off the road and would like to see the whole trail paved.
- A commenter wished to see a hiking trail separate from a biking trail.
- It was noted that Alignment 2 on the south side, had the best views and was furthest from the noise of the freeway.

Trail Management and Maintenance Comments:

- It was noted that the McKinleyville Community Service District (CSD) provides water to the weigh station near Crannell Road. A site visit participant who lives along the Hammond Trail and serves on McKinleyville Community Service District Board of Directors suggested presenting to the CSD regarding potential management of the south end of the trail.
- RCAA staff should meet with the CSD General Manager in order to get on the Mckinleyville CSD agenda, to present the Little River Trail options and feasibility study.

- Peter at SCC can help State Parks change management plan if a short paved segment/ or boardwalk segment is needed to meet State Parks' low profile trail standards.
- It was recommended that we receive maintenance cost differences for the bridge options and include these maintenance costs in the overall crossing cost estimate. We should also note that Caltrans would likely handle any maintenance that would be on their facility.
- Survey/ mark the NE corner at Scenic Drive in order to better understand the development potential of the Green Diamond parcel at the large rock South West of Scenic Drive. This could enhance the threat level of potential development impacts to the area, and potentially the appraised value of the Green Diamond parcel. The survey will also allow accurate understanding of where the County's right-of-way ends/begins in order to plan for a potential trailhead at the south end of Scenic Drive.
- Have a look at the Redding Billboards that advertise their investments in trails as a possible model for Humboldt County.

Other comments regarding the Little River Trail project area

- It was noted that cyclists often travel the wrong way/against traffic on Highway 101 north from Crannell Road to Scenic Drive. It was recommended that Caltrans add signage on the southbound off-ramp to discourage wrong way cycling.
- There were concerns regarding the lack of redirection for cyclists through construction zones currently (October 2013) taking place along Highway 101 between Arcata and Westhaven.
- The Little River area is a popular place for equestrians. People come from as far away as Redding to ride along the beach.

Public feedback following a presentation to the Trinidad Coastal Land Trust:

- If the preferred trail alignment potentially skirts the Green Diamond Moonstone property, what is the benefit of its acquisition?
- How thorough was the effort to estimate feasibility of using the existing bridge versus what seems to be the already preferred alternative of a new "side" bridge section for bikes? Seems like a new side bridge construction would cost most and have most environmental impact?

Public feedback from individual conversations and email correspondence:

- I would like to go on record as supporting the preferred bridge alignment and tentative support for the North trail 1 or with more information perhaps North trail 2. However I would much rather see the South 1 trail alignment as it creates far less disturbance to the dune environment with not much more to offer as far a scenic view sheds. South 1 would follow an established road prism that has very little traffic.
- There should not be pavement along existing State Parks trails.
- There is not a need for equestrian traffic to cross the Little River at the dunes, equestrians will continue to cross at the shallow mouth of the river. However, equestrian travel should not be prohibited from the entirety of the Little River Trail.

- Thank you for the update! Looking good! Anticipating further updates including any necessary actions on my part.
- The dune trails at Little River State Beach is part of a historic trail system. All trail users should be able to mix along the trail. Most time horses will not want to crossing over the highway bridge, but there will be rare crossings.
- For the bridge crossing, could narrow the median to four feet north of Little River to provide more shoulder space for the bike/ped trail. Remove the median hazard leading up to the bridge and shift the southbound lanes.

Appendix D – Bridge Feasibility Study

(Draft d) Bridge Feasibility Study

FOR THE PROPOSED

LITTLE RIVER TRAIL BRIDGE
OVER THE LITTLE RIVER
NEAR TRINIDAD
HUMBOLDT COUNTY, CALIFORNIA

Prepared for
Redwood Community Action Agency
Natural Resources Services

December 2013

MORRISON STRUCTURES, INC.
1890 PARK MARINA DRIVE, SUITE 104
REDDING, CALIFORNIA 96001

CONTENTS

TABLES

FIGURES

APPENDIX

(Draft d) BRIDGE FEASIBILITY STUDY

Description of the Proposed Project

The proposed Little River Trail Crossing, as part of the Little River Trail Project, consists of the construction of a key link in the Coastal Trail segments through Humboldt County as part of a larger California Coastal Trail network which will eventually stretch from Mexico to Oregon. The Little River is located between Big Lagoon and the Mad River, on the northern California coast. The trail will extend from the Hammond Coastal Trail, over the Little River north to Scenic Drive and Patrick's Point Drive, and will provide non-motorized access between the communities of Westhaven, Trinidad, and McKinleyville.

The project location is shown on the following Figure 1 - Location Map. The scope of the study included three alternative Little River bridge crossing locations and alignments. Each alternative crossing location is shown in plan view on Figure 2 and described below.

Alternative A – On the Existing Highway 101 Bridge

Alternative A consists of locating the trail on the south bound shoulder of the existing Highway 101 Bridge or on a downstream widening of the Highway 101 Bridge immediately adjacent to the southbound shoulder. This alternative requires highway lane realignment, a bridge widening, or a combination of the two options to accommodate the trail. The existing bridge, built in 1944, is a 374-foot-long, 7-span, cast-in-place reinforced concrete tee-girder on concrete pier walls supported by precast concrete piles. The bridge was originally constructed as a two-lane bridge to replace an older downstream highway bridge. In 1960, a second two-lane bridge, using the same span geometry and structure type, was built adjacent to and upstream of the existing bridge to handle northbound Highway 101 traffic and the original bridge was utilized for southbound traffic. The southbound Highway 101 Bridge was then widened in 1992, and both bridges were joined and widened in 1996 as part of a seismic retrofit project.

Alternative B – Within Caltrans Right-of-Way

Alternative B consists of a trail bridge constructed within Caltrans Right-of-Way, downstream, some distance from the existing Highway 101 Bridge.

Alternative C – Outside Caltrans Right-of-Way

Alternative C consists of a trail bridge constructed outside of Caltrans Right-of-Way, further downstream with abutments on Little River State Park lands.

Highway 101 Bridge Over the Little River - Overall View

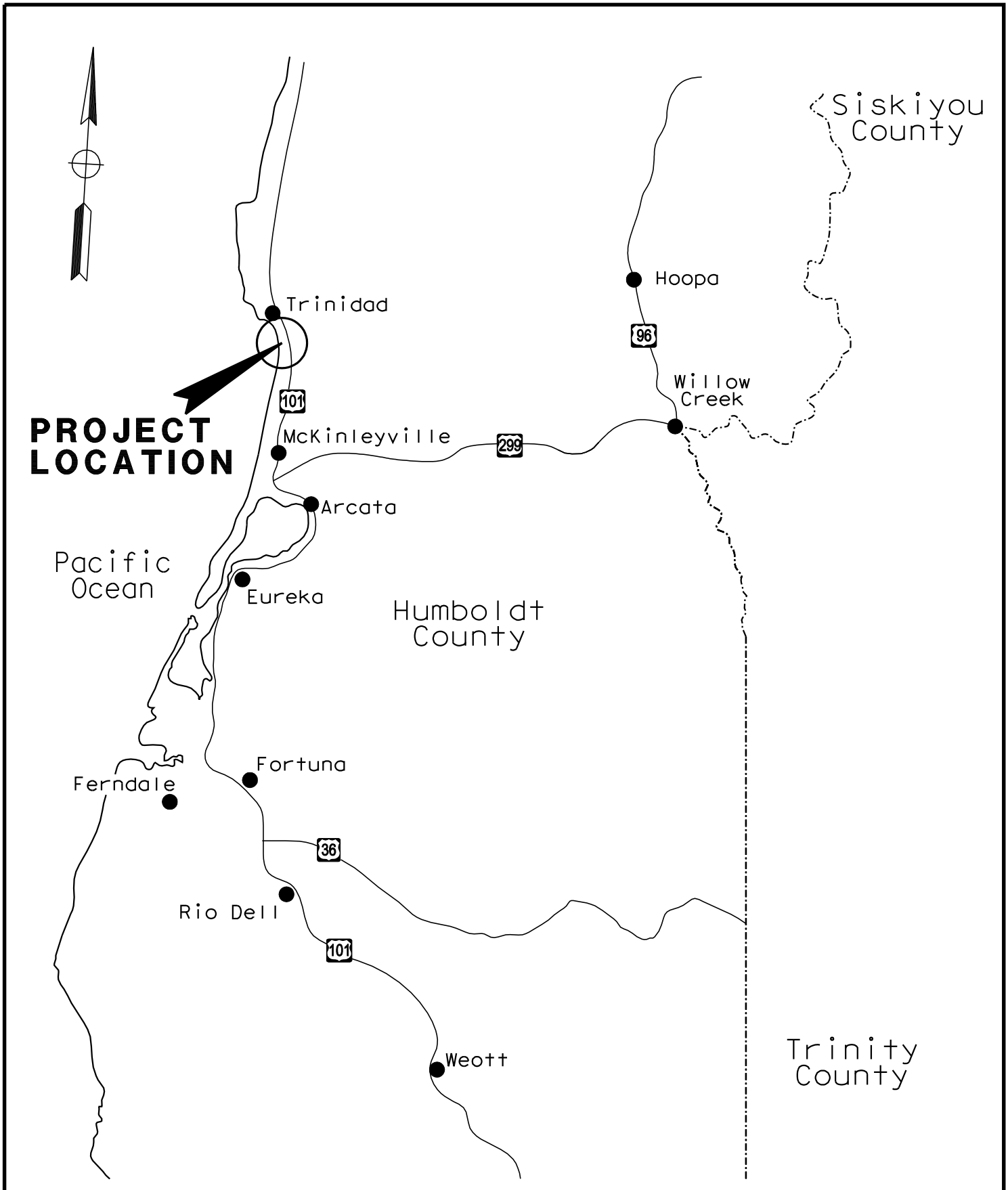
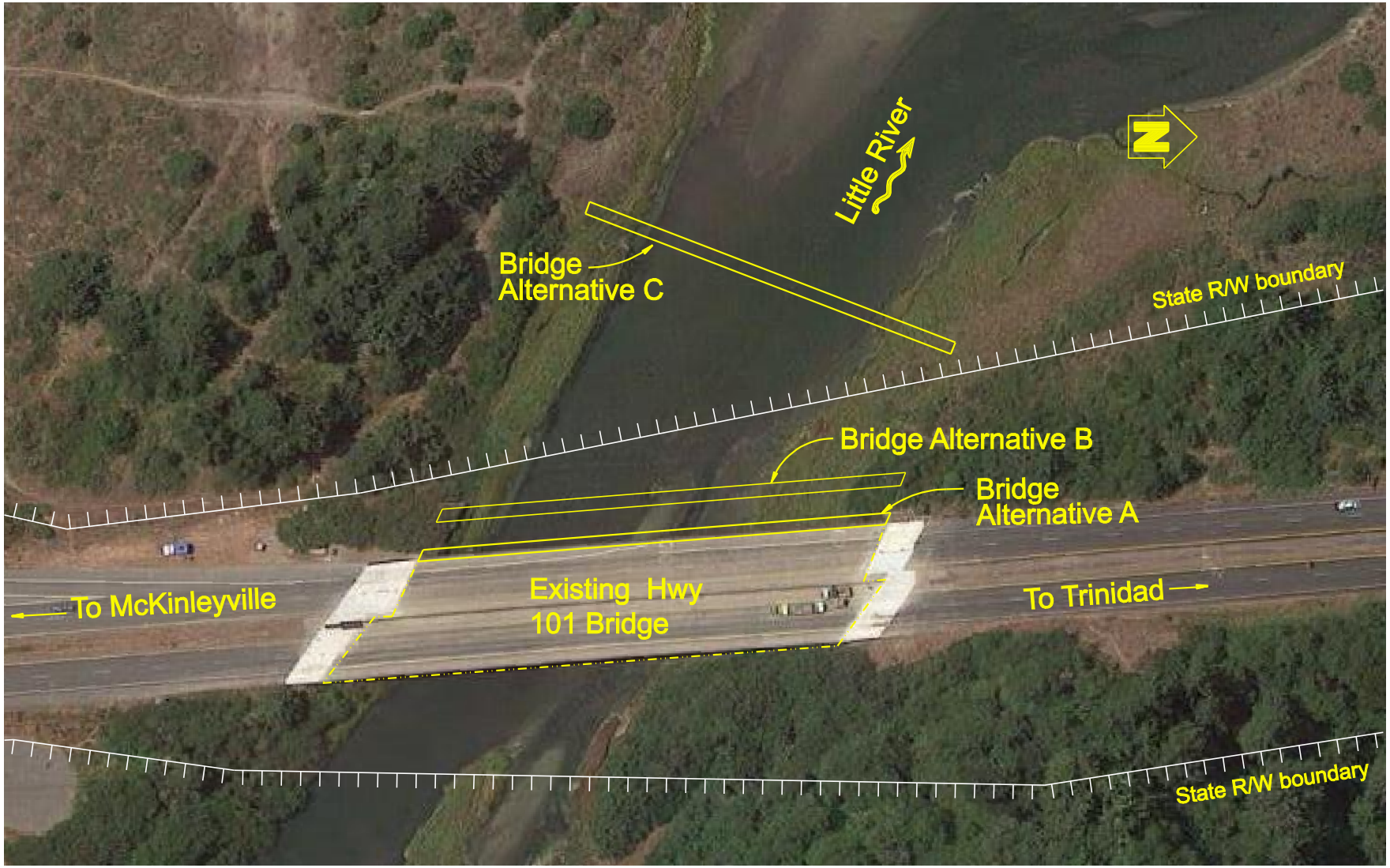


FIGURE 1
LOCATION MAP
LITTLE RIVER TRAIL CROSSING
TRINIDAD, CALIFORNIA

MORRISON STRUCTURES, INC.



PLAN
Scale: 1" = 120'

FIGURE 2
ALTERNATIVE BRIDGE LOCATIONS & ALIGNMENTS

MORRISON STRUCTURES, INC.

Study Purpose

The purpose of this report is to provide the results of our bridge feasibility studies for each alternative crossing of the Little River, and develop an advance planning study (approximately 30% design) for the selected alternative as part of the Little River Trail Project.

Study Findings

Table 1 shows a summary of type, dimensions, and approximate construction cost for each of the three Little River Trail crossing alternatives. The construction cost indicated for each alternative includes the costs of the bridge construction (including traffic control, temporary work bridge, falsework, and approach embankment). The cost of environmental documentation, engineering, permitting, construction engineering and administration, and bridge maintenance is not included.

Table 1
Little River Trail – Bridge Alternatives

Alternative	Length (ft)	Total Width (ft)	Maximum Span (ft)	Depth (ft)	Structure Type	Construction Cost ($)
Alternative A	374	11.2	50	3.15	Reinforced Concrete, T-Girder	$1,900,000
Alternative B	374	12	100	3.1 to 4.6	Prestressed, Cast-in-place Box Girder	$2,100,000
Alternative C	310	12	124	3.6 to 5.3	Prestressed, Cast-in-place Box Girder	$1,800,000

Alternative A – On the Existing Highway 101 Bridge

Lane realignment along Highway 101 and the existing bridge to accommodate non-motorized trail traffic on the shoulder was considered for Alternative A. However, when comparing highway lane realignment with widening the existing bridge it was determined that approximately 3,200 feet of highway will be affected and the cost for the required highway realignment work is more than twice the cost of widening the existing bridge. Therefore, the proposed Alternative is to widen the existing bridge along the downstream edge to provide for the trail traffic.

The proposed bridge widening consists of constructing a 374-foot-long, 11.2-foot-wide, 7-span, cast-in-place reinforced concrete T-girder addition to the existing bridge. The widening will provide

a clear width of 10'-0" between barriers and match the existing bridge structure depth, structure type, profile, and supports. Both the north and south trail approaches to the bridge would be on widened fill embankment closely matching existing conditions. Stream hydraulics will not be appreciably affected. The typical section for the proposed bridge is shown in Figure 3.

The steel pedestrian railing (indicated in Figure 3) can be used to provide a more open appearance, but will require additional maintenance of the steel. A concrete pedestrian railing could also be used to minimize rail maintenance costs.

The existing bridge barrier and deck slab along the south bound shoulder and a portion of each bent cap will need to be removed and replaced. Traffic control and temporary barriers along the highway will be required to construct the widening. A work bridge and work within the water will be necessary to drive piling, widen the bridge piers, and construct falsework supports.

During the study, other structure types were considered. Precast concrete girder type superstructure is an option but less economical than reinforced concrete T-girder. A Steel girder superstructure is also an option, however, steel girders are less economical than concrete T-girder and more costly to maintain.

Alternative B – Within Caltrans Right-of-Way

The proposed bridge is a 374-foot-long, 12-foot-wide, 4-span, cast-in-place prestressed concrete box girder with spans of 100, 100, 100, and 74 feet. The typical section for the proposed bridge is shown in Figure 4.

To provide a slender-looking structure, the soffit of the box girder will be cast with a parabolic haunch. The superstructure varies in depth from 3.1 feet at mid-span to 4.6 feet at intermediate supports. Clear width between barriers is 9 feet 8 inches, allowing for bridge and trail maintenance vehicles to travel over the bridge.

The bridge is located downstream (see Figure 2), within the State Highway Right-of-Way, about 30 feet clear of the existing Highway 101 structure. The elevation of the bridge deck will be similar to the elevation of the existing highway bridge deck. The substructure would consist of pile supported short seat abutments and single column bents. The span arrangement was selected to provide bent locations in line with the existing highway bridge pier walls to maximize hydraulic conveyance. Both the north and south trail approaches to the bridge will be on widened fill embankments closely matching the existing highway bridge abutment conditions. The existing overhead utilities could be carried within the bridge if desired.

Limited traffic control will be required along Highway 101 in order to facilitate construction. A work bridge and work within the water will be necessary to drive piling, construct the bridge bents, and construct falsework supports. This separate crossing inside of Caltrans' Right-of-Way could possibly be affected by their future widening or replacement decisions regarding the existing highway bridge.

Alternative C – Outside Caltrans Right-of-Way

The proposed bridge is a 310-foot-long, 12-foot-wide, 3-span, cast-in-place prestressed concrete box girder with spans of 93, 124, and 93 feet. The typical section for the proposed bridge is shown in Figure 5. To provide a slender-looking structure, the soffit of the box girder will be cast with a parabolic haunch. The superstructure varies in depth from 3.6 feet at mid-span to 5.3 feet at intermediate supports. Clear width between barriers is 9 feet 8 inches, allowing for bridge and trail maintenance vehicles to travel over the bridge.

The bridge will be located downstream (see Figure 2), outside of Caltrans' Right-of-Way, and perpendicular to the river channel with bridge deck elevation similar to the existing highway bridge. The substructure would consist of pile supported short seat abutments and single column bents. Both the north and south trail approaches to the bridge would be on widened fill embankment on State Park lands, with the non-motorized trail leading to Caltrans right-of-way. The existing overhead utilities could be carried within the bridge if desired.

Since the proposed bridge is located outside of Caltrans' Right-of-Way, it will not be directly affected by future widening or replacement decisions made on the existing Highway 101 Bridge. This structure is also located far enough downstream and with improved span arrangement so as to not have an effect on the existing highway bridge hydraulics.

Selected Alternative

Based on the study findings and the recommendations of the Little River Task Force, Alternative A, Bridge Widening, has been selected as the preferred alternative and the design has been advanced to approximately 30% design level. Bridge railings have been recommended to be California Type ST-10 along the traffic side of the widening and a curb mounted metal pedestrian railing (using posts and pickets) along the outside of the widening. These railings will be painted green and match the railings on the Mad River Bridge on Highway 101 to the south.

Type ST-10 (left) and Metal Pedestrian Railing (right) at Mad River Bridge

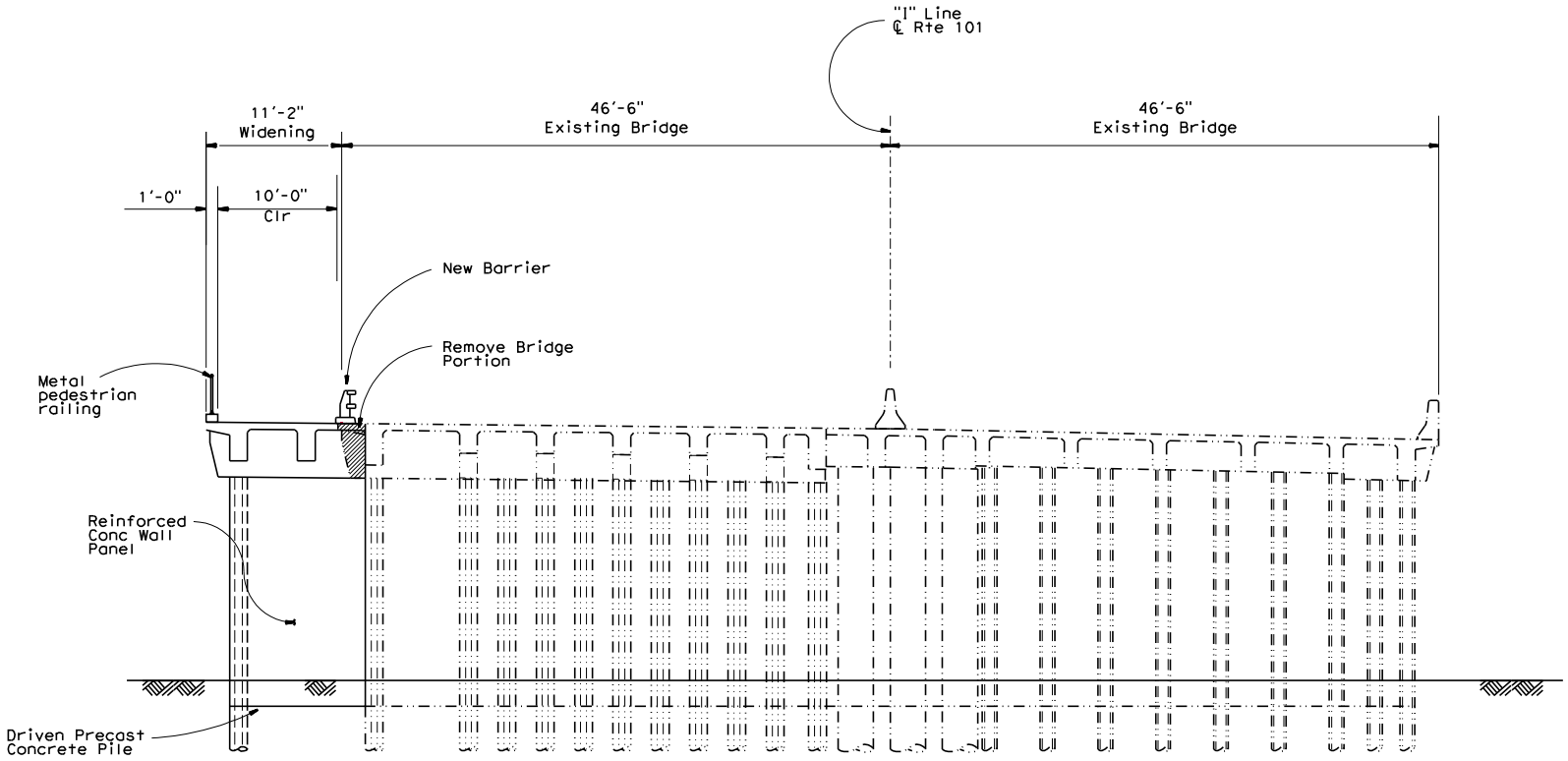
The bridge widening will be designed to carry live loads meeting current American Association of State Highway and Transportation Officials (AASHTO) LRFD Bridge Design Specifications and Caltrans Amendments. The design will also meet current Caltrans seismic design criteria.

The existing bridge is supported on driven concrete piles at the abutments and piers. It is assumed that driven concrete piles will support the widening also.

A Planning Study – General Plan for the Little River Bridge (Widen), with plan, elevation, and typical section is contained in Appendix A. Appendix A also contains a construction cost estimate for the bridge widening. Cost of construction of the bridge is estimated to be $1,900,000. This cost includes 25% contingency and 10% for mobilization. Concrete removal, traffic control and K-railing that will be needed for the work are included.

Other costs associated with the bridge widening are estimated to be:

Design Engineering, Studies, & Surveys	$380,000
Environmental Studies, Documentation, and permitting	$190,000
Construction Engineering and Administration	$285,000
Annualized Maintenance Costs	$ 15,000

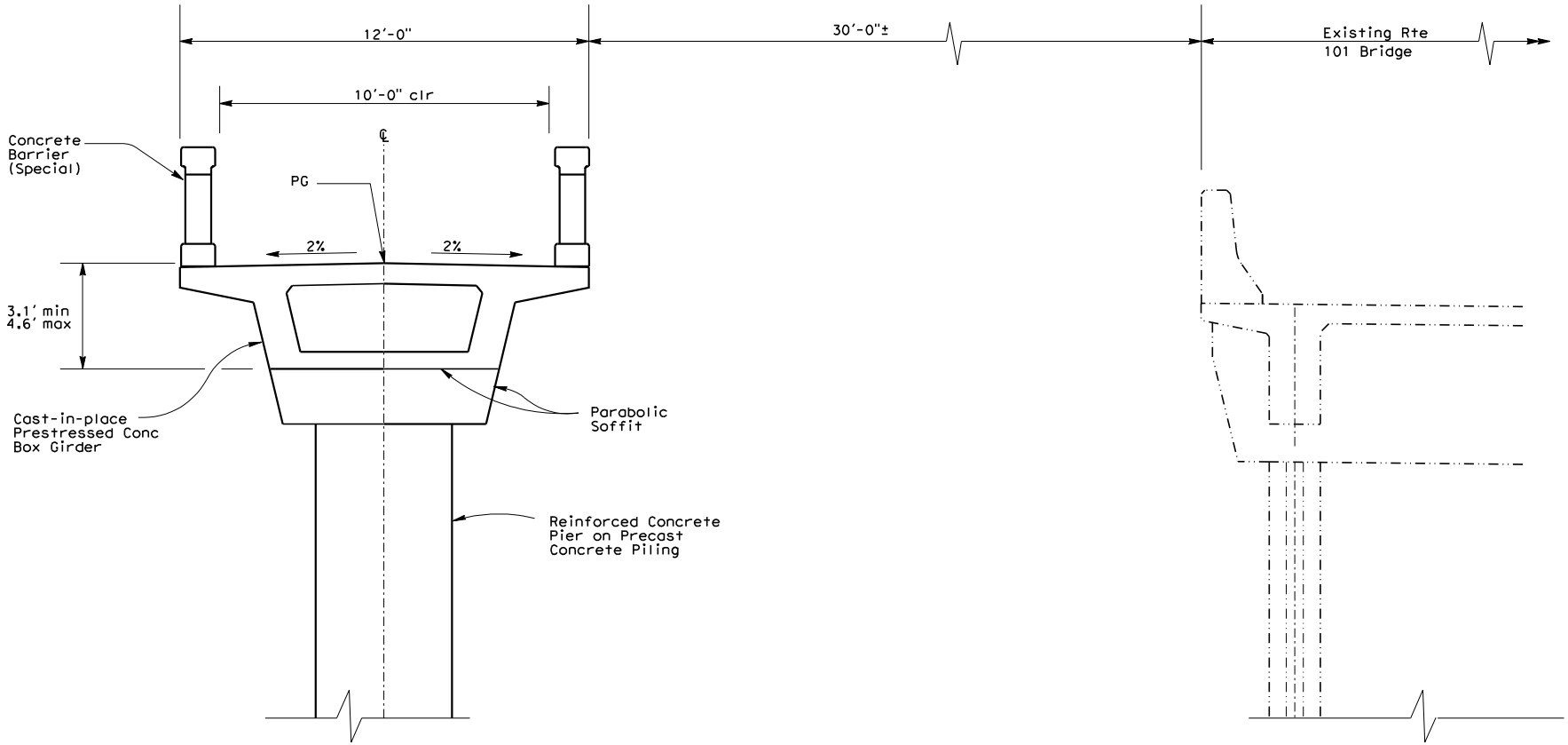


TYPICAL SECTION

Scale: 1" = 16'

FIGURE 3
ALTERNATIVE A
HIGHWAY 101 BRIDGE WIDENING

MORRISON STRUCTURES, INC.

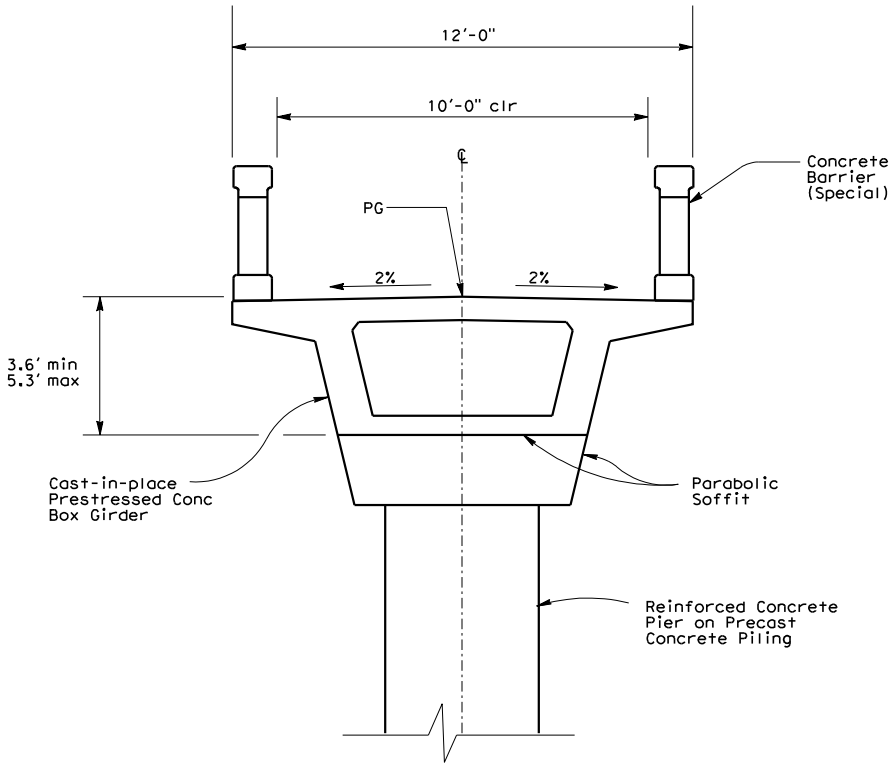


TYPICAL SECTION

Scale: 1" = 5'

FIGURE 4
ALTERNATIVE B
NEW BRIDGE WITHIN
CALTRANS RIGHT-OF-WAY

MORRISON STRUCTURES, INC.



TYPICAL SECTION

Scale: 1" = 5'

FIGURE 5
ALTERNATIVE C
NEW BRIDGE OUTSIDE
CALTRANS RIGHT-OF-WAY

MORRISON STRUCTURES, INC.

APPENDIX

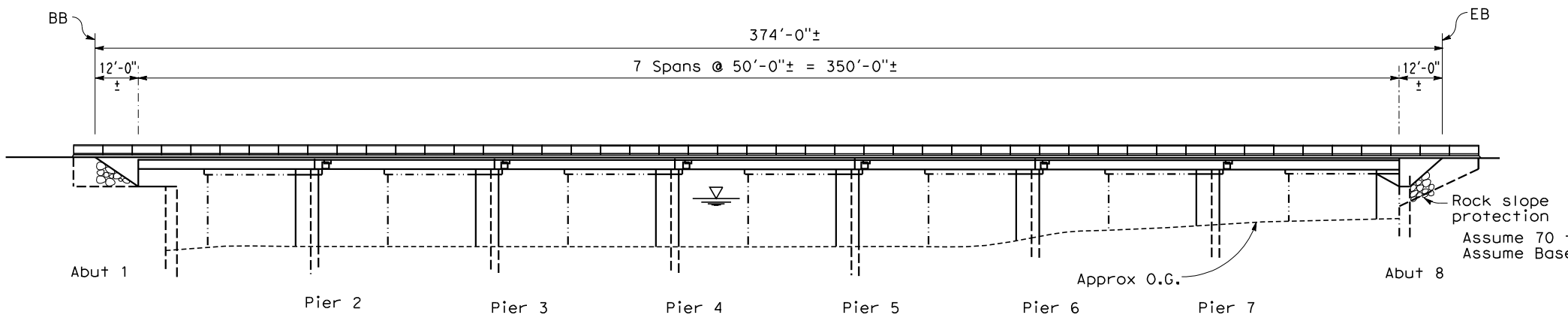
DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT	SHEET No	TOTAL SHEETS
01	Hum	101			

REGISTERED STRUCTURAL ENGINEER

REGISTERED PROFESSIONAL ENGINEER — Robert Morrison, Jr. — No. S3577 — Exp. 3-31-15 — STRUCTURAL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

Prepared by:
MORRISON STRUCTURES, INC
1890 PARK MARINA DRIVE. SUITE 104
REDDING, CALIFORNIA 96001



Assume 70 ton pile footings.
Assume Base Flood Water (Q100) surface elevation = 13.0'

Datum Elev: -30.00±

MIRRORED ELEVATION

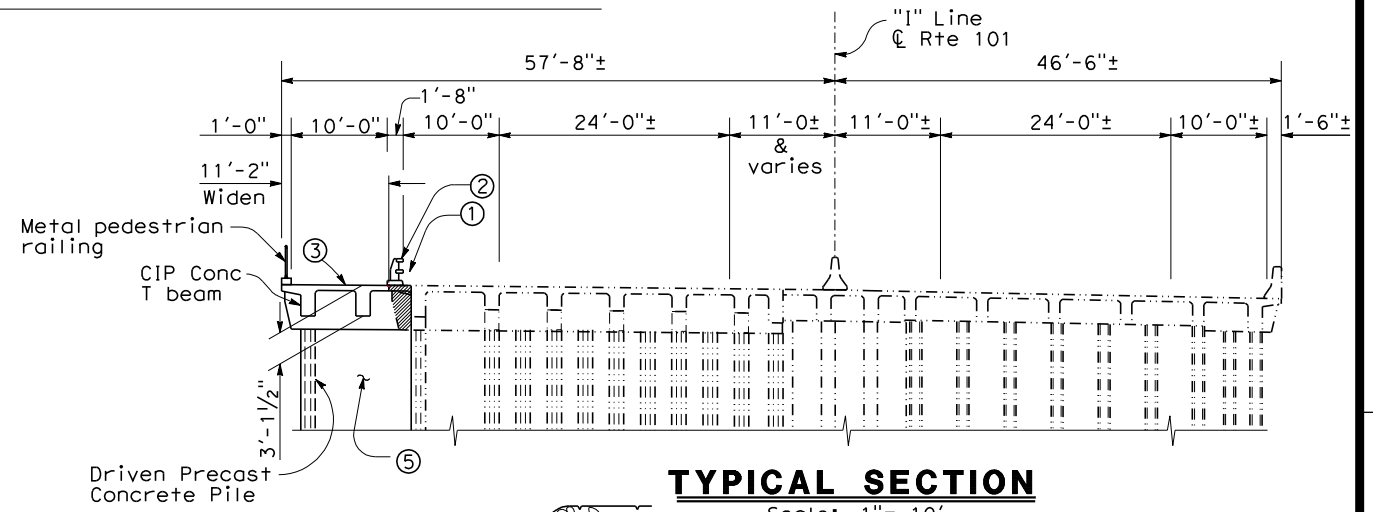
Scale: 1"= 20'

LEGEND

-·-·- Indicates existing structure.
▨ Limits of Existing Deck overhang and pier cap to be removed (Existing reinforcement to remain).
—— Indicates proposed structure.

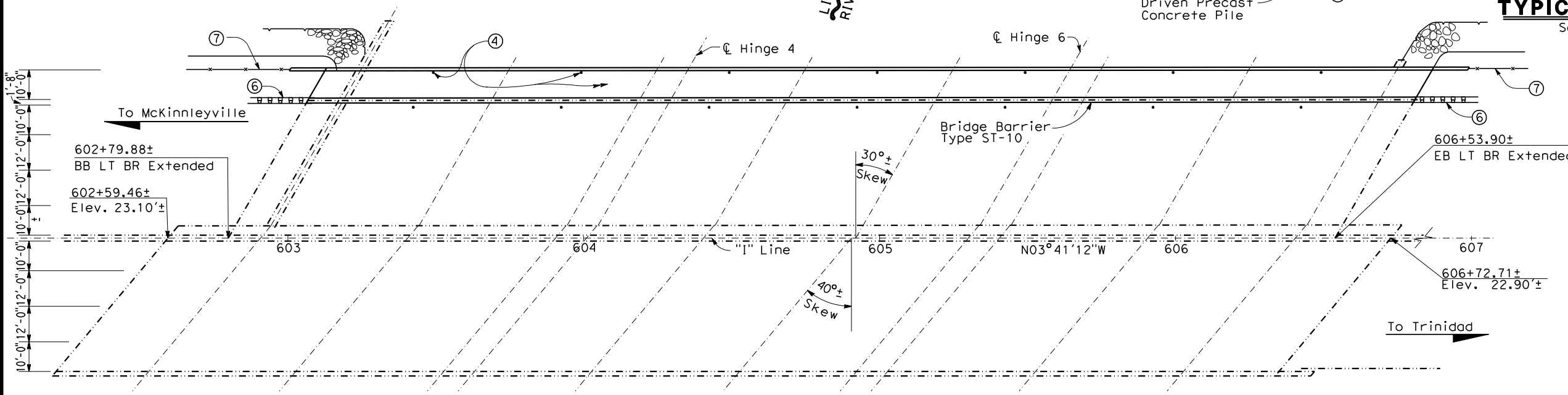
NOTES:

① Remove existing Type 27 Conc Barrier.
② California ST-10 Bridge Rail.
③ Match exisiting grade and cross slope.
④ 3" dia cored deck drain.
⑤ Reinforced concrete wall panel
⑥ MBGR
⑦ Fence



TYPICAL SECTION

Scale: 1"= 10'



PLAN

Scale: 1"= 20'

Date of estimate	= 12-12-13
Structure depth	= 3'-1½"
Length	= 374'-0"
Width	= 11'-2"
Area	= 4178 ft²
Cost /ft² including 10% mobilization and 25% contingencies	= $451.00/ft²
TOTAL COST	= $1,884,000.00

NOTE:
The contractor shall verify all controlling field dimensions before ordering or fabricating any material.

SIGN OFF DATE	DESIGN	BY R. Morrison	CHECKED	LOAD & RESISTANCE FACTOR DESIGN			
	DETAILS	BY J. Gallino	CHECKED	LAYOUT	BY J. Gallino	CHECKED R. Morrison	
	QUANTITIES	BY	CHECKED	SPECIFICATIONS	BY R. Morrison	PLANS AND SPECS COMPARED R. Morrison	

PREPARED FOR THE STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Robert Morrison Jr.
PROJECT ENGINEER

BRIDGE NO. 04-0026L/R
POST MILE 97.5

PLANNING STUDY

LITTLE RIVER BRIDGE (WIDEN)

GENERAL PLAN

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT:

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES | SHEET | OF

FILE => $REQUEST

MORRISON STRUCTURES, INC.

1890 Park Marina Drive, Suite 104

Redding, CA 96001

BRIDGE GENERAL PLAN ESTIMATE ☐				**OR PLANNING ESTIMATE** x			
STRUCTURE	ALT. A: LITTLE R. BR. PED. WIDENING			COUNTY	HUM	RCVD. BY	
TYPE	7-SPAN, R/C T-GIRDER	DIST.	1	ROUTE	HWY 101	P.M.	
LENGTH	374' L X 11.17' W =		4178 SF			EST. NO.	1
PROJECT INCLUDES	1 STRUCTURES			QUANTITIES BY	BDM	DATE	12/12/2013
AND $	0 ROADWORK			CHECKED BY		DATE	

	CONTRACT ITEMS	UNIT	QUANTITY	PRICE	AMOUNT
1	CONSTRUCTION AREA SIGNS	LS	1	$ 4,000.00	$ 4,000.00
2	TRAFFIC CONTROL SYSTEM	LS	1	$ 80,000.00	$ 80,000.00
3	TEMPORARY RAILING (TYPE K)	EA	40	$ 1,900.00	$ 76,000.00
4	BRIDGE REMOVAL (PORTION)	LS	1	$ 30,000.00	$ 30,000.00
5	CLEARING AND GRUBBING	LS	1	$ 5,000.00	$ 5,000.00
6	STRUCTURE EXCAVATION (BRIDGE)	CY	76	$ 270.00	$ 20,520.00
7	STRUCTURE EXCAVATION (TYPE D)	CY	25	$ 360.00	$ 9,000.00
8	STRUCTURE BACKFILL (BRIDGE)	CY	44	$ 275.00	$ 12,100.00
9	DOWEL BAR (DRILL AND BOND)	LF	223	$ 50.00	$ 11,150.00
10	DRIVE PILE (CLASS 140)	EA	16	$ 5,000.00	$ 80,000.00
11	FURNISH PILING (CLASS 140)	LF	1160	$ 18.75	$ 21,750.00
12	STRUCTURE CONCRETE, BRIDGE	CY	314	$ 2,025.00	$ 635,850.00
13	JOINT SEAL (TYPE A)	LF	26	$ 100.00	$ 2,600.00
14	BAR REINFORCING STEEL (BRIDGE)	LB	77159	$ 1.85	$ 142,744.15
15	MISCELLANEOUS METAL (BRIDGE)	LB	1256	$ 12.00	$ 15,072.00
16	MISCELLANEOUS METAL (RESTRAINER)	LB	134	$ 15.00	$ 2,010.00
17	PEDESTRIAN HANDRAILING	LF	400	$ 250.00	$ 100,000.00
18	CALIFORNIA ST-10 BRIDGE RAIL	LF	374	$ 250.00	$ 93,500.00
19	METAL BEAM GUARDRAILING (WOOD POST)	LF	150	$ 100.00	$ 15,000.00
				$ -	$ -
				$ -	$ -
				$ -	$ -
				$ -	$ -
				$ -	$ -
				$ -	$ -
				$ -	$ -
				$ -	$ -

COMMENTS: _____

SUBTOTAL		$ 1,356,296.15
MOBILIZATION	(10 %)	$ 150,699.57
SUBTOTAL STRUCTURE ITEMS		$ 1,506,995.72
CONTINGENCIES	(25 %)	$ 376,748.93
BRIDGE TOTAL	($ 451 / SF	$ 1,883,744.65
BRIDGE REMOVAL (CONTINGENCIES INCL)		$ -
WORK BY RAILROAD OR UTILITY FORCES		$ -
GRAND TOTAL		$ 1,883,744.65
FOR BUDGET PURPOSES - USE		$ 1,884,000.00

COMMENTS: _____

Appendix E – Green Diamond Resources Company Moonstone Parcel Appraisal

Not Included In Public Document

Appendix F – Trail Alignment Evaluation Matrix

Little River Trail Alignment Evaluation Matrix

Alignment Alternatives			Criteria										
Little River Trail Section	**Alignment Number**	**Alignment Description**	**Environmental Resource Protection**	**Cultural and Historical Resource Protection**	**Consistency with Adjacent Public Access and Land Use Plans**	**Trail Management Opportunities**	**Topographic Feasibility**	**Cost Feasibility***	**Scenic Experience**	**Aligned with CCT Goals**	**Accessible to All Non-Motorized Users**	**Maintains an ADA grade***	**Outside of Floodplain and Impacts from Sea Level Rise**
North of Bridge	**North 1**	Traverses the highway fill slope within the Caltrans right of way from the south end of Scenic Drive until reaching the Little River											
	North 2	Traverses highway fill slope and then descends towards the old Highway 1 road bed on a bench below the current highway fill slope											
	North 3	From Scenic Drive descends to the Green Diamond parcel and traverses the State Parks parcel through coastal scrub and wetlands to the bridge											
Bridge Crossing	**Bridge Option1**	Widening Bridge for a barrier-separated trail with no driving lane shift											
	Bridge Option 2	Seperated bridge within Caltrans ROW within 30' from existing highway bridge											
	Bridge Option 3	Seperated bridge outside of Caltrans ROW, > 30' from existing highway bridge											
South of Bridge	**South 1**	From Crannell Road to the Little River, barrier-separated trail directly adjacent to the highway off ramp											
	South 2	From Crannell Road to just south of the Little River, slightly west and above the highway, through stabilized dunes mostly within Caltrans ROW except for a short excursion into State Parks property to skirt a wetland dune hollow											
	Little River State Beach Paved Trail Option	Redesignating and paving existing LRSB trail from Little River to Crannell Road											

*Due to the drop in elevation between the southern end of Scenic Drive and the northern end of the Little River Bridge, a 2% grade is not feasible throughout, which may require trail turnouts to maintain ADA.

Legend	
	High presence
	Moderate presence
	Limited presence

Appendix G – Comments on the draft LRTFS from Caltrans, Coastal Commission staff and Blue Lake Rancheria

DEPARTMENT OF TRANSPORTATION
DISTRICT 1, P. O. BOX 3700
EUREKA, CA 95502-3700
PHONE (707) 441-4540
FAX (707) 441-5869
TTY 711

Flex your power!
Be energy efficient!

February 28, 2014

Josh Levine
Planner
Redwood Coast Action Agency
904 G Street
Eureka, CA 95501

1-HUM-101-97.457
Little River Trail Feasibility Study
DB # 19062

Dear Mr. Levine,

Thank you for the opportunity to comment on Redwood Coast Action Agency's (RCAA) Draft *Little River Trail Feasibility Study* (January 2014). The Study evaluates the feasibility of a non-motorized trail from the southern end of Scenic Drive to Clam Beach Drive on U.S. Highway 101 in Humboldt County (1-HUM-101-97.457).

The biggest challenge presented was finding a preferred concept and location for the Little River crossing. The Study ultimately proposes to parallel U.S. Highway 101 within Caltrans' right-of-way and traverse the Little River on or attached to the existing Highway 101 bridge.

We commend RCAA for working closely with Caltrans during the development of this Study. We support a transportation facility that provides safe mobility for all users as well as the idea of strengthening the usability of the California Coastal Trail (CCT).

We provide the following comments for consideration in preparing the final document:

1) The Study states that "Caltrans has agreed to pursue a Project Study Report (PSR) for the bridge crossing segment of the trail" (page 77). However, changes in legislation have redirected funding for Project Initiation Document (PID) development. It is anticipated that this project would be a local-agency sponsored project. The project sponsor is responsible for overall project delivery, chooses an implementing agency for each project component and is the customer of the implementing agency.

   Caltrans could put the PSR into the PID work program. However, it would require reimbursement for completion of the PSR. If the PSR is completed by another agency, the oversight would also require reimbursement. Please see attached letter from Caltrans Director Malcolm Dougherty discussing Assembly Bill (AB) 1477.

2) We recommend RCAA work with Humboldt County to include this project in the Humboldt County Association of Governments (HCAOG) Regional Transportation Plan

(RTP). An update of the document is currently taking place. The RTP looks out over a twenty plus-year period providing the vision for future demand and transportation investment within the region. Projects not listed in the RTP will not be eligible for funding.

3) Freeway controlled access fencing along the highway right of way is a mandatory Highway Design Manual (HDM) standard. Changes to the existing fencing along the preferred trail alignment may require special encroachment permits and an approved exception to the HDM Fact Sheet (please refer to HDM Section 701-Fences).

4) The document would be enhanced with a more thorough discussion of environmental mitigation costs. A schedule and realistic timeline for mitigation would greatly improve the document as a tool for securing funding in the future.

5) We request the maps in the document include the Caltrans and State Park right of way limits.

Please refer to **Attachment A** for additional comments regarding design, funding and the Bridge Feasibility Study.

Thank you again for giving us the opportunity to comment on the Draft *Little River Trail Feasibility Study*. We look forward to continuing to work closely with RCAA as the concepts from this project evolve through the project development process.

If you have questions regarding the comments outlined in this letter or would like to discuss any of it in more detail, please contact me at (707) 441-4540 or tatiana.ahlstrand@dot.ca.gov.

Sincerely,

Tatiana Ahlstrand
Associate Transportation Planner
District 1 Office of Community Planning

Enclosed: AB 1477 Letter
Attachment A

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
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SACRAMENTO, CA 94273-0001
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January 25, 2013

See Distribution List

Dear Executive Directors:

Governor Edmund G. Brown Jr. signed Assembly Bill (AB) 1477 into law on September 30, 2012. The enactment of AB 1477 gives the California Department of Transportation (Caltrans) reimbursement authority to review and approve Project Initiation Document (PID)s for locally sponsored projects on the State Highway System (SHS). AB 1477 is a compromise between the Administration and the California State Legislature in an effort to give Caltrans authority to move forward with new PID work for locally-sponsored projects. Based on the compromise, the Bill requires that certain PIDs and oversight work for locally-sponsored SHS projects be reimbursed by the local agency. However, local agencies will be exempt from full cost recovery charges which represent an approximate savings of 30 percent. See Attachment (2) Using Project Sponsorship to Determine PID Funding for additional details.

Initially, the Budget Act of 2012 allowed for State funding for 39 PIDs for locally sponsored SHS projects that were already under agreement. AB 1477 modifies the Budget Act and directs that most locally sponsored PID for SHS projects that are developed by or overseen by Caltrans will be reimbursed. Of the original 39, 37 PID and oversight work will have to be reimbursed. Your agency will be asked to reimburse Caltrans for any work performed on your PID that has been accomplished from July 1, 2012, until it is complete.

In order to move forward with any new PID work for locally-sponsored SHS projects, Caltrans will seek reimbursement for Fiscal Year 2012–13. The districts will coordinate with regional and local agencies willing to reimburse Caltrans and ultimately develop and execute cooperative agreements for PID reimbursement work. We will continue to work in partnership with you to improve mobility across California. Please contact your local Caltrans district office (Attachment 1) for further assistance.

Sincerely,

MALCOLM DOUGHERTY
Director

Attachments:
(1) District Project Initiation Document Contacts
(2) Using Project Sponsorship to Determine PID Funding
(3) List of Project Initiation Documents Impacted by AB 1477

Attachment 1

CALIFORNIA DEPARTMENT OF TRANSPORTATION
District Directors, District Deputy Directors of Planning, and District Project Initiation Document Contacts

DISTRICT		NAME	PHONE
[1] Eureka	DISTRICT DIRECTOR	CHARLES FIELDER	(707) 445-6445
	Deputy District Director - Planning	Cheryl Willis	(707) 445-6413
	PID Contact	Ilene Poindexter	(707) 441-3969
[2] Redding	DISTRICT DIRECTOR	JOHN BULINSKI	(530) 225-3477
	Deputy District Director - Planning	Dave Moore	(530) 225-3481
	PID Contact	Mark Miller	(530) 225-3094
[3] Marysville	DISTRICT DIRECTOR	JODY E. JONES	(530) 741-4233
	Deputy District Director - Planning	Jeff Pulverman	(530) 741-4337
	PID Contact	Dianira Soto	(530) 741-5435
[4] Oakland	DISTRICT DIRECTOR	BIJAN SARTIPI	(510) 286-5900
	Deputy District Director - Planning	Lee Taubeneck	(510) 286-5908
	PID Contact	Patrick Pang	(510) 286-5566
[5] San Luis Obispo	DISTRICT DIRECTOR	TIM GUBBINS	(805) 549-3127
	Deputy District Director - Planning	Aileen Loe	(805) 549-3161
	PID Contact STIP-SHOPP North	Claudia Espino	(805) 549-3640
[6] Fresno	DISTRICT DIRECTOR	SHARRI BENDER EHLERT	(599) 488-4057
	Deputy District Director - Planning	Gail Miller	(559) 488-4115
	PID Contact	Ken Okereke	(559) 445-6610
[7] Los Angeles	DISTRICT DIRECTOR	MICHAEL MILES	(213) 897-0362
	Deputy District Director - Planning	Aziz Elattar	(213) 897-0792
	PID Contact - STIP/SHOPP	Elaheh Yadegar	(213) 897-9635
[8] San Bernardino	DISTRICT DIRECTOR	BASAM MUALLEM	(909) 383-4055
	Deputy District Director - Planning	John Pagano - Acting	(909) 383-4147
	PID Contact	Diane Morales	(909) 388-4625
[9] Bishop	DISTRICT DIRECTOR	THOMAS HALLENBECK	(760) 872-0602
	Deputy District Director – Planning	Brad Mettam	(760) 872-0691
	PID Contact	Jeremy Milos	(760) 872-0795
[10] Stockton	DISTRICT DIRECTOR	CARRIE BOWEN	(209) 948-7943
	Deputy District Director - Planning	Ken Baxter	(209) 948-7906
	PID Contact	Pat Robledo	(209) 948-7071
[11] San Diego	DISTRICT DIRECTOR	LAURIE BERMAN	(619) 688-6668
	Deputy District Director - Planning	Bill Figge	(619) 688-6681
	PID Contact	Chi Vargas	(619) 688-3157
[12] Santa Ana	DISTRICT DIRECTOR	RYAN CHAMBERLAIN	(949) 724-2007
	Deputy District Director - Planning	Lan Zhou	(949) 756-7827
	PID Contact	Constantino Stamation	(949) 754-2249

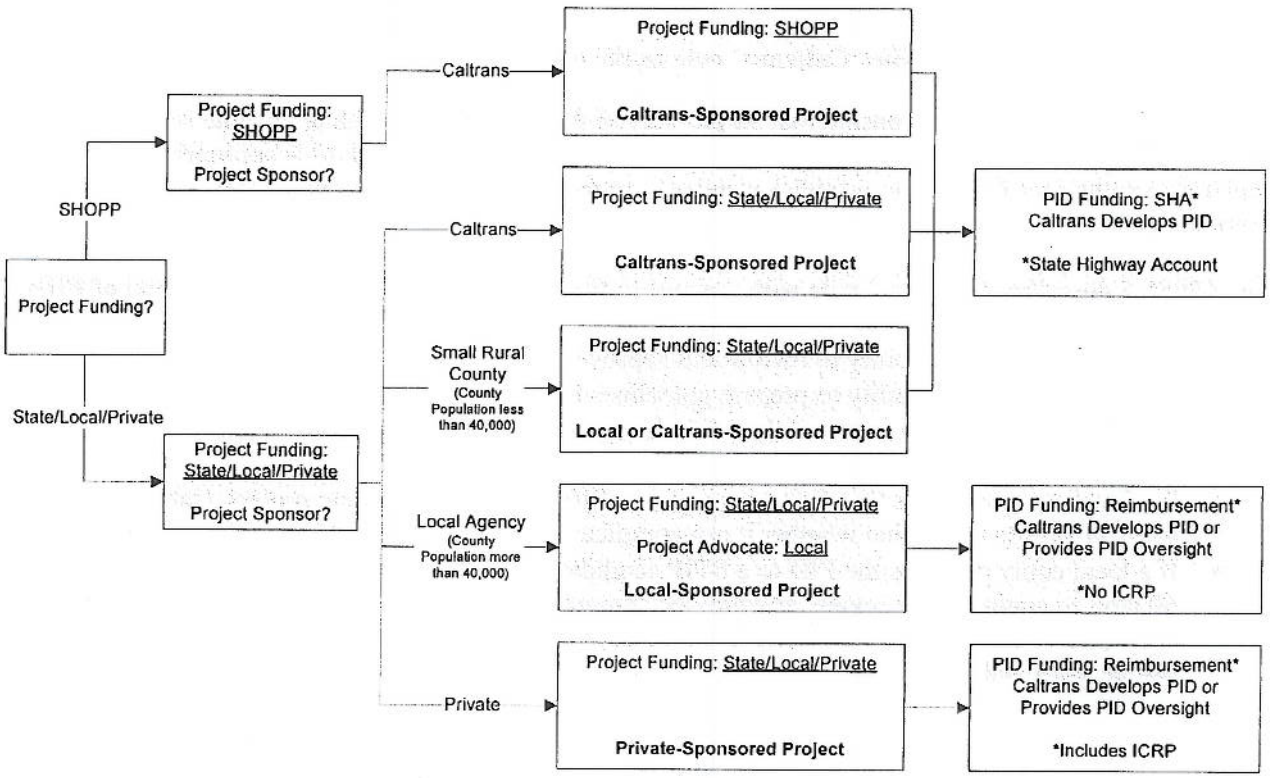
Using Project Sponsorship to Determine PID Funding

State Highway Account (SHA) funds are eligible to be used for the development of Project Initiation Documents (PID)s for The California Department of Transportation (Caltrans) sponsors or state-sponsored projects PID reimbursement applies to State Highway System (SHS) projects for which Caltrans is not the project sponsor. Based on existing Caltrans policy and guidance, project sponsors are defined as agencies that serve as the project advocate and secure the project funding. The project sponsor is also responsible for overall project delivery and chooses an implementing agency for each project component and is the customer of the implementing agency.

Caltrans is the sponsor for all projects funded solely from the State Highway Operation and Protection Program (SHOPP) and most projects funded from the Interregional Transportation Improvement Program (ITIP). Caltrans-sponsored projects also include projects where Caltrans is the project advocate but local entities (e.g. self-help counties, etc.) fund the projects. PID development will be funded with SHA funds for projects that are sponsored by local agencies with county populations less than 40,000 (as identified in California Streets and Highways Code Section 2104 and Highway Users Tax Account).

PID development and oversight will be reimbursed for projects not sponsored by Caltrans and funded by local agencies with county populations more than 40,000 and private entities. As a result of AB 1477, local agencies will not be required to pay the Indirect Cost Rate Proposal (ICRP) for Caltrans to develop PIDs or provide PID oversight. The ICRP is still required for private entities.

Diagram 1: Decision-Tree for Determining the Funding for PID Support Costs



Using Project Sponsorship to Determine PID Funding

Existing Policies and Guidance

According to Caltrans Deputy Directive 23-R1 on Roles and Responsibilities for Development of Projects on the State Highway System dated 2/23/2007 and signed by Randell H. Iwasaki, a

Project Sponsor secures funding for the project and serves as the project advocate. The project sponsor chooses an Implementing Agency for each project component and is the customer of the Implementing Agency. Caltrans is the sponsor for all projects funded solely from the State Highway Operation and Protection Program and most projects funded from the Interregional Improvement Program.

According to the Project Development Procedures Manual (2-18, Section 5), Project Sponsors:

- Identify and prioritize the projects they sponsor.
- Identify the purpose and need for their project relative to the SHS.
- Establish project goals and evaluate project outcomes relative to the established goals.
- Serve as advocates for their projects, and secure funding from the various funding programs or other sources.
- Choose an Implementing Agency or Agencies for project components.
- Secure funding for the preparation and completion of project components as defined in Government Code (GC) 14529 (b).

GC 65086 and 65086.4 describes Caltrans' role as the owner-operator of the SHS.

It is Caltrans' responsibility to ensure that all projects on the SHS comply with applicable state and federal standards. Caltrans may also determine that an exception to the standard is appropriate. This legislation authorizes Caltrans to establish standards, procedures, and a review process to ensure compliance.

GC 65086.5 describes Caltrans' role with respect to the preparation, review, and approval of PIDs.

- It is Caltrans' responsibility to review and approve PIDs that are developed by others.
- It is Caltrans' responsibility to prepare guidelines for the preparation of PIDS by all entities.
- If Caltrans has the resources and the work does not jeopardize delivery, Caltrans can prepare a PID for a non-STIP capacity-increasing project for a local entity.
- If a local entity requests that Caltrans prepare a PID as a STIP candidate project, Caltrans shall have 30 days to determine whether it can complete the requested report in a timely fashion.
- If a local entity prepares the PID as a STIP candidate or local measure project, Caltrans shall have 60 days to complete the review and provide comments to the local agency. After the local entity submittal of the revised PID, Caltrans has 30 days to review and make a determination if the PID can be approved.

List of Existing Project Initiation Documents Impacted by AB 1477

Project Sponsor	District	County	Route	Begin Postmile	End Postmile	Improvement Description	Contract Number
Trinidad Rancheria	01	HUM	101	98.35	100.70	New Interchange - Provide a more reliable access to Trinidad Rancheria/Scenic Drive	01-0365
BCAG	03	BUT, YUB	70	VAR	VAR	Passing Lanes - Operational improvement to reduce congestion	03-0494
County of Placer	03	Placer	65	10.60	11.70	PID review for interchange modification	3-0492
City of San Carlos	04	SM	101	8.10	8.60	Interchange improvement - Improve traffic operations	04-2356
VTA	04	SCL	101	40.50	41.50	Interchange modification	04-2417
VTA	04	SCL	85 237	R21.5 M1.6	R22.0 M1.6	Modify two interchanges and add auxiliary lanes	04-2419
VTA	04	SCL	101	16.00	52.20	Convert HOV lanes to Express (HOT) lanes	04-2424
Bay Area Toll Authority (BATA)	04	Various	Various	Various	Various	toll collection, operations and maintenance improvement	4-2078
City of Brisbane	04	SM	101	25.70	26.10	Modify interchange - Improve traffic operations and safety	04-2350
SamTrans	04	SM	82	Var	Var	Part of the Grand Blvd Initiative, demonstrate complete street, improvements to meet all modes of transportation	04-2457
ACTC/City of San Leandro	04	ALA	880	22.50	23.30	I/C reconfiguration - Improve traffic operations	04-2357
CCTA	04	CC	242	0.10	1.50	Modify interchange to add ramps to serve traffic needs	04-2401
City of Santa Rosa	04	SON	101	20.20	22.20	Bike/Ped Overcrossing	04-2348
SCTA	04	SON	101	18.50	18.60	Modify interchange - Traffic Operational Improvements	04-2409
MTC	04	ALA/CC/SCL	Var	Var	Var	Convert HOV Lane to Express Lane	04-2414
MTC	04	ALA	Var	Var	Var	Incident Management ITS	04-2415
County of Santa Clara	04	SCL	101	41.30	42.40	Interchange modification - Enhance safety and improve operations; alleviate existing and future congestions; and provide continuous 8-lane expressway	04-2420
County of Santa Clara	04	SCL	680	4.50	11.00	Interchange modification - Improve traffic operations	04-2421
SLOCOG/City of El Paso de Robles	05	SLO	46	31.80	31.80	In the City of Paso Robles at Union Road	05-0262
City of Santa Cruz	05	Scr	01	17.20	18.20	Widen San Lorenzo Bridge	05-0208
Madera County Transportation Commission	06	MAD	99	15.10	15.10	Interchange Improvements	06-1513
City of Chowchilla	06	MAD	99/233	26.20	26.92	Interchange Improvements	06-1526

List of Existing Project Initiation Documents Impacted by AB 1477

Project Sponsor	District	County	Route	Begin Postmile	End Postmile	Improvement Description	Contract Number
City of Visalia	06	TUL	198	0.00	6.70	Minor widening & safety improvements	06-1510
City of Visalia	06	TUL	198	R11.5	R11.9	Improve Interchange - Congestion Relief	06-1499
City of Industry	07	LA	605	R19.39	R19.39	Modify Ramps - Ramp and street improvements	07-4925
City of Murrieta	08	RIV	215	13.75	15.25	Construct New IC	08-1519
County of Riverside	08	RIV	15	47.75	49.10	Reconstruct Interchange - Congestion Relief	08-1522
SANBAG	08	SBD	15	0.00	31.80	Add Express Lanes to I-15 Corridor	08-1528
City of Tracy	10	SJ	205	9.60	9.60	Interchange Improvements - Accommodate planned growth	10-0395
SANDAG	11	SD	05	17.20	19.00	Construct a Direct connector ramp to ITC (Intermodal Transit Center)	11-8314-005-006
SANDAG	11	SD	78	0.00	16.50	Add HOV Ln(s)	11-8314-078-001
SANDAG	11	SD	15/78	R30.66	R31.80	Add HOV Ln(s), Direct Connectors and Aux. Lanes	11-8314-015-006
City of Chula Vista	11	SD	125	L3.1	2.30	Construct two interchanges	11-0662A
City of Oceanside	11	SD	78	1.30	1.70	Widen Existing Bridge	11-0677

Attachment A

Little River Trail Feasibility Study

General/Editorial:

1) The last paragraph on page 2 states, "the on-ramp to Highway 101 from the south end of Scenic Drive is particularly dangerous for bicyclists..." (2). Absent of accident history at this location, we recommend a new word be used in place of dangerous.
2) The Study would be enhanced with support data from the Tourism Board to substantiate the economic opportunities from tourism discussed in the document (pages 4, 10).
3) Page 11: The sentence is listed twice in the second paragraph.
4) Page 27: Safety is not listed as one of feasibility analysis criteria used and should be included.

Design:

5) Page 41: Although the Highway Design Manual (HDM) typical cross-section for the proposed Class I Bikeway is a minimum width of 8-feet, and 10-feet preferred, the HDM also mandates a minimum 2-foot wide shoulder be provided on each side of the path constructed of the same material as the path (please refer to HDM Section 1003.1(1).
6) Page 48: In the discussion about cost estimates, it is unclear if these costs include permitting, mitigation and support costs. Please clarify what these costs include.
7) The minimum separation between the edge-of-pavement for the bikeway and the edge-of-pavement for the highway is required to be 5-feet plus the standard shoulder (please refer to HDM Section 1003.1(6).
8) A safety railing fence, such as a three-strand wire fence, would be required to provide safety for workers and users along the bikeway/trail anywhere the vertical face of the trail is 4-feet or more (please refer to HDM Section 210.6).

Funding:

9) Page 71: The "new federal transportation bill" should be clarified as SB-99, Active Transportation Program (2013).
10) Page 78: The discussion of Moving Ahead for Progress in the 21st Century Act (MAP-21) should be rewritten to be more timely. Additionally, a more descriptive explanation about the Environmental Enhancement Mitigation (EEM) program would be helpful. According to the SB-99 legislation, the existing law creates the EEM Program Fund for the expenditure on grants to specified agencies and nonprofit entities for various types of projects that are directly or indirectly related to the environmental impact of transportation facilities, including, among other things, roadside recreational opportunities.

11) Page 79: The document should have a better explanation of the Caltrans Minor Program and note that the Minor A and B programs serve different purposes. The Study outlines Caltrans' District 1 Minor B funds as a viable funding source for this project, but it should be clarified that Minor B funds are limited to $270,000 and are fiscally constrained. Alternatively, Minor A funds are the source of funds being offered in support of the Eureka-Arcata Corridor Project.

Bridge Feasibility Study (Appendix D):

12) Alternative A: Will remnants of the old bridge cause any conflicts with the new crossing alternatives?
13) Page 4: Please add a statement on effects of sea level rise (SLR) to the proposed structures.
14) Alternative A: There are drainage concerns on the existing bridge deck. Please provide a brief statement about how surface water will be handled.
15) Alternative B: Will the vertical clearance be sufficient?
16) Figures 4 and 5: The narratives and figures to do not match in their measurements (10' vs. 9'8"). This also applies to the Feasibility Study (pages 33-34).

STATE OF CALIFORNIA -- NATURAL RESOURCES AGENCY Edmund G. Brown, Jr., Governor

CALIFORNIA COASTAL COMMISSION
NORTH COAST DISTRICT OFFICE
1385 EIGHTH STREET • SUITE 130
ARCATA, CA 95521
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February 28, 2014

Josh Levine, Senior Planner
Natural Resources Services Division
Redwood Community Action Agency
904 G Street, Eureka, CA 95501

RE: Comments on the January 2014 Draft Little River Trail Feasibility Study.

Dear Josh:

Thank you for the opportunity to comment on the draft Little River Trail Feasibility Study. We received your e-mail solicitation for comments, with a web link to the draft documents, on February 3. Please note that the documents have not been reviewed by the Coastal Commission itself, but rather by Commission staff.

As completion of the California Coastal Trail has been a vision of the Coastal Commission for many years, we are very supportive of the trail concept explored in the study and its principal elements of separating the trail from the highway, protecting coastal resources, and incorporating enriching interpretive displays. We appreciate the study's comprehensiveness, readability, level of detail, and inclusion of valuable input garnered through extensive outreach to stakeholders, regulatory and resource agencies, tribal representatives, local governments, land trusts, adjacent landowners, and the public. We offer the following comments on the draft study for your consideration:

Page 21. We recommend addressing sea-level rise in project planning consistent with the Coastal Commission's sea-level rise guidance document (a draft version of which is accessible at http://www.coastal.ca.gov/climate/SLRguidance.html). In particular, the project planning should rely on the best available science – which, as reported in the State of California Sea Level Rise Guidance Document (available at http://www.opc.ca.gov/2009/12/climate-change/), currently is the 2012 NRC Report[1] – to identify appropriate sea-level rise projections, which should then be modified as appropriate (if feasible) to account for local conditions.

Page 25. In the discussion of the evaluation of alignments (as well as in Appendix D – the bridge feasibility study), there is mention of the "lane-shift" alternative, which was discounted by Morrison Structures as too expensive. When considering the necessary coastal development permit for the project, the Coastal Commission typically requires a detailed alternatives analysis to determine the least environmentally damaging feasible alternative, particularly with respect to impacts related to the diking, dredging, or filling of coastal wetlands and waters. "Feasible" is defined in Section 30108 of the Coastal Act as "*capable of being accomplished in a successful*

[1] National Research Council (NRC), Committee on Sea Level Rise in California, Oregon, and Washington. (2012). *Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future*. National Academies Press, Washington, D.C. pp.250. ISBN 978-309-24494-3.

manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors." Consider including further analysis and discussion of the feasibility of the "lane-shift" alternative in this and/or other sections of the study as appropriate to present a deeper understanding of the feasibility of this alternative with respect to various factors and criteria.

Page 39. Regarding the preferred alignment S2, which would parallel the existing chain-link property fencing between Caltrans and State Park land, it is recommended that the existing fence be removed and a new chain link fence installed east of the trail. Consider whether there are any other fencing types and designs that may be feasible to use for the eastern replacement fencing that may be more visually compatible with the area and protective of public visual resources (including views from the highway westward).

Page 50. In the list of anticipated environmental and regulatory requirements for the trail, consider adding State Lands Commission to the list if appropriate.

Page 51. It's stated that the Coastal Act is the standard of review for CDPs processed by the Commission, and the County LCP is the standard of review for CDPs processed by the County. As a point of clarification, the Coastal Act would be the standard of review for any consolidated CDP (processed by the Commission) as well.

Page 52. Consider adding a brief discussion of other relevant Coastal Act considerations (aside from wetland and visual concerns), including environmentally sensitive habitat areas (Section 30240, e.g., dune ESHA, rare plant ESHA, nesting bird ESHA, etc.), archaeological resources (Section 30244), and geologic and flood hazards (Section 30253).

Page 76. We agree with the recommendation that the preferred alignment of the trail and bridge crossing be incorporated into the Humboldt County LCP.

Thank you again for the opportunity to provide comments on the draft feasibility study. We look forward to the continuing advancement and ultimate completion of this important segment of the California Coastal Trail. If you have any questions about these comments or the CDP or LCP processes, please feel free to contact me at (707) 826-8950.

Sincerely,

Melissa B. Kraemer
Coastal Planner

From: Janet Eidsness <JEidsness@bluelakerancheria-nsn.gov>
To: Joshua Levine <josh@nrsrcaa.org>
Cc: erikacollins@brb-nsn.gov; tom@wiyot.us; rmcconnell@yuroktribe.nsn.us; rsundberg@trinidadrancheria.com
Sent: Tuesday, February 4, 2014 3:25 PM
Subject: RE: Draft Little River Trail Feasibility Study for review

Dear Josh,

I reviewed the Draft Feasibility Study and applaud the compilers on a job well done. I believe you have correctly and conscientiously documented information and concerns provided to the team by me representing Blue Lake Rancheria.

It is notable that you reached out and consulted with THPOs representing the Wiyot area tribes (Blue Lake, Bear River and Wiyot) and Yurok peoples (Yurok Tribe, Trinidad Rancheria) as documented on page 7 & elsewhere.

Importantly, the Draft Study articulates that future planning and environmental review will continue to involve the affected tribes (both THPOs and governments) in consultation, and a professional cultural resources study will be performed in consultation with the tribes (pages 50, 54 etc.)

Thanks for the opportunity to review this draft study.

Regards,