

California Coastal Commission Alternatives Analysis
Navarro Metal Beam Guard Rail Safety Project
MEN-1 PM 40.1-40.9, MEN-128 0.0-0.03
EA 01-48470
08/27/2013

Introduction

Caltrans prepared this California Coastal Commission Alternatives Analysis for the Albion/Navarro Metal Beam Guard Rail Safety Project to analyze impacts to coastal resources resulting from project alternatives. Two alternatives were considered in this analysis: the Build Alternative and a No-Build Alternative. In addition, this analysis considered potential impacts resulting from design features that were considered but eliminated from further study during the development of the project. The project was analyzed relative to the following resource impact criteria: 1) loss of wetland acreage; 2) loss of wetland functional capacity; 3) impacts to riparian resources; and 4) special-status plant species.

Project Description

This safety project is located in Mendocino County along the Navarro River on Highway 1 between post miles (PM) 40.1 and PM 40.9 and on Highway 128 between PM 0.0 and PM 0.03. The project proposes to upgrade existing metal beam guard rail (MBGR), install new MBGR where needed to improve safety, widen Highway 1 for recovery area where there is sufficient width, place an asphalt concrete overlay on the roadway, and install bicycle warning signs.

Purpose and Need

The purpose of the project is to reduce the number and severity of run-off-the-road (ROR) collisions. The project is needed because of the elevated number of accidents within the Highway 1 corridor between PM 40.1 and PM 40.9. The fatality collision rate on Highway 1 is eight times higher than the statewide average for similar facilities and 55 times higher than the statewide average on Highway 128. The fatality/injury collision rate is also more than twice the statewide average for similar facilities. A river at the bottom of the grade poses a significant hazard to occupants should a vehicle enter the water. There is also a large elevation difference between the roadway and the river on Highway 1 along this section of roadway. It is anticipated that this project would reduce the severity of collisions by 37%, reducing the likelihood of errant vehicles running off the road.

Alternatives

Build Alternative 1

This Build Alternative would reduce the number and severity of run-off-the-road collisions. New MBGR would be installed adjacent to the southbound lane of Highway 1 from the Navarro River Bridge at PM 40.27 to the existing guard rail at PM 40.89 (entire length). The project would also upgrade the MBGR at the southeast bridge corner, replace the MBGR at the southwest corner with a see-through barrier (ST-10), remove the northeast corner MBGR, and reconstruct 150 feet

of MBGR adjacent to the northbound lane at the south end of the project. Nonstandard guard rail would be installed where new MBGR posts are to be placed at the hinge point. The ST-10 barrier would be installed in lieu of upgrading the MBGR at the southwest bridge corner due to geometric and environmental constraints. Existing bridge rail concrete transition blocks would be modified where the new and upgraded MBGR and ST-10 barrier connect to the Navarro River Bridge.

This Build Alternative would also widen Highway 1 to give errant vehicles more time and space to regain control. Widening would provide two 12-foot lanes and a 4-foot southbound shoulder where there is sufficient width. Northbound shoulder widths would vary from 0 to 4 feet. Highway 1 would be paved with hot mix asphalt, centerline rumble strips would be installed for safety, existing roadway signs and markers would be relocated behind new MBGR, and new bicycle warning signs would be installed at PM 40.1. Highway 128 would be cold planed at PM 0.03 to connect to a newly paved maintenance overlay and paved with hot mix asphalt from PM 0.0 to PM 0.03. New bicycle warning signs would be installed at PM 0.1.

Build Alternative 2

This Build Alternative would reduce the number and severity of run-off-the-road collisions as in Alternative 1 with all the same improvements, but would eliminate MBGR from the “highly scenic”, flatter section of Highway 1 from PM 40.30 to PM 40.55.

With consideration for various community interests, Caltrans conducted further analysis of the collision rate information between PM 40.30 to PM 40.55 and has determined that while a collision occurred, the rate is less than 50% of the statewide average for similar facilities. Furthermore, widening the lane and shoulder widths as planned by the project should address run-off road collisions within the limits. Prudent practice dictates placement of MBGR as part of this project due to a history of ROR collisions in the area, presence of a steep slope and standing water adjacent to the highway. However, given the limited collision history, lower collision rate, scenic resources, and community opposition, Caltrans can propose this Alternative only so long as collisions within the PM 40.30-40.55 segment do not continue to occur. If collisions do occur in the future and severity can be reduced by MBGR installation, Caltrans will pursue another project to close the MBGR gap.

No-Build Alternative

The No-Build Alternative would leave the roadway in its current state. The No-Build Alternative would not meet the purpose and need of the project because safety would not be improved.

Design Features Considered but Eliminated from Further Study

The following design features were considered but eliminated from further study:

- One feature evaluated in the early stages of this project was changing the intersection control of Highway 1 and Highway 128 from a one-way stop to a three-way (all) stop. This feature was eliminated from further study when it was determined that traffic calming measures in an intersection are generally only effective within a few hundred feet of the intersection. Since the concentration of severe collisions occurred more than 0.25 mile from the intersection, a three-way

stop would have little to no effect on vehicle speeds or run-off-the-road collisions. Studies also show that when stop signs are used as a traffic calming measure, collision rates increase.

- The original scope of the project proposed to upgrade 10 culvert inlets and replace two culvert inlets. During preliminary studies, the drainage work was removed from the project when it was determined that the culverts and inlets were in good condition and were not in need of an upgrade.
- Cable Barrier was considered as an alternative to a MBGR barrier system to reduce the visual impacts of guard rail. While MBGR has a deflection of approximately 2 feet based on a designed impact, cable barrier has a deflection of approximately 8 feet. When considering the increased deflection potential, the cable barrier would have to be installed nearer to the roadway, which would result in encroaching into the southbound four foot shoulder (2' to 4') and eliminate two short pullouts (approximately 100 and 250 feet long) of level gravel that exist beyond the paved shoulder on the side adjacent to the river. This would limit the ability for disabled and sight-seeing vehicles to stop along the river, which is considered a benefit to the traveling public. Locating the cable barrier that close to the traveling public could make them shy toward the roadway centerline, which may create more head-on collisions. Locating the cable barrier closer to the roadway may also encourage pedestrians to feel safe walking behind the rail. Pedestrians, approximately 100 feet (in either direction) from a collision location, would still be affected by the cable barrier due to the triangulation of the cable railing during impacts resulting from the greater deflection. Due to the larger deflection, reduction of the southbound shoulder, elimination of the pullouts, and the potential for increased risk to pedestrian and vehicle traffic, this option is not preferred.
- Placing a designed pedestrian path on the backside of the MBGR was considered inappropriate due to the increased requirements for structural support. The proposed MBGR is designed to prevent vehicles from leaving the roadway in the event of a collision. Any separated, designated walkway would be required to meet current Americans with Disability Act (ADA) standards, which would significantly increase the design requirements. The proposed guardrail anchor system is not designed to accommodate pedestrians on the backside of the attached MBGR. A pedestrian structure to accommodate the limited shoulders, steep grades and geologic issues within the project limits is beyond the scope of this project, as this would significantly increase the cost and environmental impacts of the project. As designed, pedestrians can utilize the 4 foot wide paved highway shoulder or the 4 foot wide dirt area behind the MBGR to walk along the relatively flat section of roadway. The 4 foot paved shoulder provides a significant improvement to safely accommodate pedestrians and cyclists traveling along the popular Pacific Coast Bike Route, and the proposed development in no way precludes or limits options in the future alignment of the Coastal Trail through this area.
- Shifting the MBGR toward the hill (right) or shifting the right shoulder toward the river (left) was considered. The current design is two 12 foot lanes, one 4 foot left shoulder and

a 0 to 4 foot right shoulder. No widening is allowed to the hill side (right) of the existing edge of pavement due to the presence of wetland plants. The paved shoulder on the right is typically 2 feet or less. To further reduce this shoulder would create a more curvilinear alignment, increase the probability of a vehicle ROR, and substantially compromise safety. Exceptions have been made to maintain the existing shoulder width. The MBGR is typically next to the 4 foot left shoulder except in areas where trying to preserve a vehicle pullout area. The MBGR cannot be shifted toward the hill (right) without encroaching into the shoulder/lane. Due to variation of the right edge and its sub-standard size, shifting the right shoulder to the left would not meet the purpose of the project and may cause more ROR collisions.

- Reducing the height of the guardrail was considered. During the Design phase, Caltrans adopted new MBGR height standards from the Federal government. These new standards raised the barrier rail tops from 29” to 31” in July 2013. An exception to this policy for this project is being pursued due to the complexity and is currently verbally approved.

Impacts to Coastal Resources

There would be no impacts to coastal resources with the No-Build Alternative. The Build Alternative does not contain drainage work or drainage inlet upgrades. Work would take place within 1 foot of drainage areas, but construction best management practices would be implemented, in coordination with the California Coastal Commission, to ensure the protection of wetlands during construction.

The Build Alternative would have no impact to wetland acreage, wetland functionality, and rare plants. There would be a low impact to riparian vegetation due to minor trimming.

Northern Coastal Bluff Scrub, a sensitive natural community, was initially mapped near the site. A follow-up survey of the site was conducted on March 19-21, 2013. This survey determined that Northern Coastal Bluff Scrub was not present. Rather, what had been mapped as Northern Coastal Bluff Scrub was Northern (Franciscan) Coastal Scrub, which is a common natural community.

Design features considered but eliminated from further study would have had the greatest impact on coastal resources. Earthwork caused by drainage work would have created moderate impacts to wetland functionality and acreage. The re-grading of the drainage ditches would have caused a change in hydrology for functionality and encroached on wetland acreage values. Wetland impacts associated with these eliminated design features are considered qualitatively only, because these elements were removed from further study. Potential impacts to coastal resources are summarized in Table 1.

Table 1. Impacts to Coastal Resources

Coastal Resource	Resource Buffer	Build Alternative	No-Build	Design Features Considered But Eliminated from Further Study
Wetland Acreage (See Attachment 4 of Caltrans' response letter dated 4/15/13 for wetland locations)	Work would occur within the 100 feet buffer.	No impact Protection and minimization measures will be implemented.	No impact	Low to medium impact* Wetland acreage would be impacted if culvert inlets are repaired or replaced.
Wetland Functionality (See Attachment 4 of Caltrans' response letter dated 4/15/13 for wetland locations)	Work would occur within the 100 feet buffer.	No impact Protection and minimization measures will be implemented.	No impact	Low to medium impact * Hydrology could be altered in some wetlands.
Riparian Vegetation (See Attachment 4 of Caltrans' response letter dated 4/15/13 for wetland locations)	Work would occur within the 100 feet buffer.	Low impact Project has been designed to avoid impacts to riparian vegetation other than minor trimming. Adjacent habitats will be enhanced through invasive plant removal.	No impact	Low impact* ESA fencing will be placed along the edge of the sensitive areas, silt fencing and straw wattles will be used as needed.
Rare Plants <i>(Gilia capitata ssp. Pacifica and Casittleja mendocinensis</i> (See Attachment 4 of Caltrans' response letter dated 4/15/13 for wetland locations)	Work would occur within the 100 feet buffer.	No impact Protection and minimization measures will be implemented.	No impact	Low to medium impact* Plants and seed bank may be affected by earthwork; ESA fencing would protect the balance of the population.

*Determination is not based on quantitative analysis.

Protection and Minimization Measures

- No work would occur beyond the northbound edge of pavement where environmentally sensitive area (ESA) fencing (K-rail) would be placed during all construction operations.
- To protect ESAs during paving and grinding operations, fiber rolls would be laid on the ground immediately adjacent to the edge of the road.
- A qualified Caltrans biologist would monitor work near sensitive resources to ensure protection measures are implemented and effective.
- Areas of disturbed soil would be replanted with a seed mix of regionally appropriate native plant species that are ecologically suitable for the site.
- The replanting area would be monitored for five years following seeding. During the five-year monitoring period invasive noxious species would be eliminated from within the project limits (this management effort is not intended to focus on the removal of

aggressive naturalized species such as velvet grass [*Holcus lanatus*], which is common in the project area).

- Adjacent habitats would be enhanced through invasive plant removal. Caltrans assessments indicate that there are invasive plant species adjacent to the site, though not in extensive stands. Caltrans has identified three invasive plant species: pampas grass (*Cortaderia* sp.), Italian thistle (*Carduus pycnocephalus*), and Cape ivy (*Delairea odorata*). One large pampas grass plant is located in a roadside ditch adjacent to the work area and Caltrans proposes to remove this large pampas grass plant. Several small stands of Italian thistle are located in a roadside ditch adjacent to the work area. Caltrans also proposes to remove these stands. Two patches of Cape ivy are located on hillslopes adjacent to the work area. These areas are not accessible and largely on land that is outside of our right-of-way. Removal is not practicable, but Caltrans would ensure that Cape ivy does not encroach into the project limits.

Conclusion

Although there are no impacts to coastal resources with the No-Build Alternative, the No-Build Alternative does not meet the project purpose and need of promoting safety through this area.

The Build Alternative 2 would promote safety while avoiding impacts to wetland acreage, wetland functionality, and rare plants. There would be a low impact to riparian vegetation due to trimming that would be offset by enhancement of adjacent habitat through invasive plant removal. To the maximum extent possible the project includes enhancement and protection measures to eliminate or reduce all adverse effects to the surrounding coastal resources. The Build Alternative 2 would have the lowest overall impacts to coastal resources, including the scenic view, while still meeting the project's purpose and need.

Station	Curve				Shoulder Left (ft+in) ⁽²⁾		Shoulder Right (ft+in) ⁽²⁾		PM ⁽³⁾	Culvert <PM>	Station ⁽⁴⁾	
	#	Radius	Direction	Length ⁽¹⁾	Begin...End	Exist	Proposed	Exist				Proposed
A 111+00						9' 1"	8' 11"	1' 11"	2' 9"	40.29		
A 111+50						9' 3"	6' 7"	0' 4"	2' 5"	40.30	culvert 40.29	111+45
A 112+00	2	950	Lt	300	111+59.723	6' 8"	3' 6"	0' 11"	1' 10"	40.30		
A 112+50	2	950	Lt	300		4' 8"	4' 0"	0' 4"	1' 10"	40.31		
A 113+00	2	950	Lt	300		3' 10"	4' 0"	0' 10"	2' 8"	40.32	culvert 40.33	113+20
A 113+50	2	950	Lt	300		4' 5"	4' 0"	0' 8"	2' 11"	40.33		
A 114+00	2	950	Lt	300		2' 6"	4' 0"	0' 9"	2' 11"	40.34		
A 114+50	2	950	Lt	300	114+59.741	1' 11"	4' 0"	0' 6"	2' 8"	40.35		
A 115+00						1' 10"	4' 0"	0' 4"	1' 0"	40.36		
A 115+50						1' 10"	4' 0"	0' 7"	2' 9"	40.37		
A 116+00	3	850	Rt	198	115+54.656	1' 9"	4' 0"	0' 6"	2' 2"	40.38		
A 116+50	3	850	Rt	198		1' 2"	4' 0"	0' 11"	1' 4"	40.39	culvert 40.39	116+60
A 117+00	3	850	Rt	198		0' 11"	4' 0"	1' 2"	1' 6"	40.40		
A 117+50	3	850	Rt	198	117+52.686	1' 1"	4' 0"	1' 0"	1' 8"	40.41		
A 118+00						1' 0"	4' 0"	0' 11"	1' 5"	40.42		
A 118+50						0' 11"	4' 0"	0' 10"	1' 3"	40.43		
A 119+00	4	1500	Lt	265	118+66.985	1' 4"	4' 0"	0' 9"	1' 1"	40.44	culvert 40.44	119+24
A 119+50	4	1500	Lt	265		1' 7"	4' 0"	0' 6"	1' 3"	40.45		
A 120+00	4	1500	Lt	265		1' 8"	4' 0"	0' 7"	1' 11"	40.46		
A 120+50	4	1500	Lt	265		1' 8"	4' 0"	0' 5"	1' 11"	40.47		
A 121+00	4	1500	Lt	265	121+32.374	1' 2"	4' 0"	0' 10"	1' 11"	40.47		
A 121+50						0' 10"	4' 0"	0' 8"	2' 5"	40.48		
A 122+00						0' 8"	4' 0"	0' 9"	2' 6"	40.49		
A 122+50						0' 7"	4' 0"	0' 7"	2' 7"	40.50		
A 123+00						0' 7"	4' 0"	0' 10"	2' 9"	40.51		
A 123+50						0' 7"	4' 0"	0' 5"	2' 8"	40.52	culvert 40.53	123+64
A 124+00						0' 10"	4' 0"	0' 6"	2' 3"	40.53		
A 124+50						1' 3"	3' 1"	0' 6"	1' 10"	40.54		
A 125+00						0' 11"	4' 0"	0' 6"	1' 1"	40.55		
A 125+50	5	1500	Lt	358	125+06.715	1' 2"	4' 0"	0' 8"	0' 11"	40.56		
A 126+00	5	1500	Lt	358		1' 2"	4' 0"	0' 11"	1' 6"	40.57		
A 126+50	5	1500	Lt	358		0' 11"	4' 0"	1' 0"	2' 0"	40.58		
A 127+00	5	1500	Lt	358		1' 0"	4' 0"	0' 9"	2' 2"	40.59		
A 127+50	5	1500	Lt	358		1' 3"	4' 0"	0' 8"	1' 9"	40.60		
A 128+00	5	1500	Lt	358		1' 7"	4' 0"	0' 6"	1' 8"	40.61		
A 128+50	5	1500	Lt	358	128+65.143	1' 1"	4' 0"	0' 5"	1' 7"	40.62		
A 129+00						1' 0"	4' 0"	0' 5"	1' 3"	40.63		
A 129+50	6	575	Lt	314	129+00.794	1' 6"	4' 0"	0' 7"	1' 2"	40.64	Culvert 40.65	129+61
A 130+00	6	575	Lt	314		1' 0"	4' 0"	1' 0"	2' 8"	40.65		
A 130+50	6	575	Lt	314		1' 3"	4' 0"	1' 1"	4' 2"	40.65		
A 131+00	6	575	Lt	314		7' 5"	4' 0"	0' 10"	2' 10"	40.66	Culvert 40.67	130+92
A 131+50	6	575	Lt	314		2' 1"	4' 0"	0' 8"	2' 1"	40.67		
A 132+00	6	575	Lt	314	132+15.251	1' 0"	4' 0"	0' 8"	1' 1"	40.68		
A 132+50						0' 10"	4' 0"	0' 6"	1' 0"	40.69		
A 133+00						0' 7"	2' 11"	0' 8"	0' 11"	40.70		
A 133+50						0' 9"	2' 11"	0' 8"	0' 6"	40.71		
A 134+00	7	1000	Lt	138	133+53.214	0' 8"	3' 0"	0' 8"	0' 0"	40.72		
A 134+50	7	1000	Lt	138	134+91.175	0' 4"	2' 5"	0' 8"	0' 0"	40.73	Culvert 40.73	133+66
A 135+00						0' 4"	1' 2"	0' 9"	0' 4"	40.74		
A 135+50						0' 6"	1' 1"	0' 7"	0' 1"	40.75		
A 136+00	8	320	Rt	139	135+78.038	1' 1"	1' 1"	0' 5"	0' 5"	40.76		
A 136+50	8	320	Rt	139		1' 2"	1' 3"	0' 5"	0' 9"	40.77		
A 137+00	8	320	Rt	139	137+17.527	0' 10"	0' 0"	0' 5"	0' 8"	40.78		
A 137+50						1' 7"	1' 1"	0' 5"	0' 4"	40.79		
A 138+00	9	330	Lt	269	137+81.642	1' 2"	2' 1"	0' 5"	0' 0"	40.80		
A 138+50	9	330	Lt	269		1' 3"	2' 0"	0' 5"	0' 0"	40.81		
A 139+00	9	330	Lt	269		1' 3"	1' 9"	0' 5"	0' 0"	40.82		
A 139+50	9	330	Lt	269		1' 2"	1' 11"	0' 9"	0' 6"	40.83		
A 140+00	9	330	Lt	269		1' 1"	2' 0"	0' 11"	1' 0"	40.83	Culvert 40.84	140+09
A 140+50	9	330	Lt	269	140+50.151	1' 9"	4' 0"	1' 0"	0' 10"	40.84		
A 141+00	10	300	Rt	114	140+67.827	2' 3"	12' 0"	0' 11"	0' 11"	40.85		
A 141+50	10	300	Rt	114	141+81.003	1' 6"	12' 0"	1' 10"	1' 7"	40.86		
A 142+00	11	325	Lt	136	141+94.646	1' 6"	4' 0"	6' 8"	5' 1"	40.87		
A 142+50	11	325	Lt	136		3' 3"	4' 0"	15' 10"	15' 8"	40.88		
A 143+00	11	325	Lt	136	143+31.036	3' 2"	4' 0"	21' 5"	22' 0"	40.89	Culvert 40.90	142+82
A 143+50						3' 6"	3' 0"	5' 4"	4' 11"	40.90		

(1) = rounded to nearest foot

(2) = rounded to nearest inch

(3) = station field reference where culvert intersects proposed Center Line, because culvert PM markers are not always accurate to the actual PM

(4) = PM to station equation is PM40.1 = 101+20.1

EXHIBIT NO. 13

Existing & Proposed
Shoulder Widths (with
Station & PM References)

Permit No. 1-12-017
(Caltrans)

Memorandum

*Flex your power!
Be energy efficient!*

To: Carlon Schriever
Advance Planning, Project Engineer

Date: June 30, 2008

File: 01-MEN-1 PM 40.11/40.90
01-MEN-128 PM 0.00/0.19
Install MBGR
01-48470K

From: Marie Brady 
District 1, Traffic Safety Office

EXHIBIT NO. 14

Caltrans Traffic Collision
Memo & Map Excerpt

Permit No. 1-12-017
(Caltrans)

Subject: Collision Analysis

A 5-year TASAS Table B collision analysis was performed for the requested segment on Route 1 and Route 128 in the County of Mendocino. The TASAS Table B summary sheet is attached and a brief summary is given below.

MEN 1 (PM40.11/40.90)

A review was made of the recorded collision history for this 0.79- mile segment. There were 15 collisions (1 Fatal, 5 Injury, 9 PDO) between October 01, 2002 and September 30, 2007. 14 of these collisions occurred in the northbound direction. The actual total collision rate for this segment is 3.7 COL/MVM, as compared to the statewide average of 1.42 COL/MVM for similar roadways. The Primary Collision Factor for six of these collisions was listed as "improper turn," followed by "Failure to Yield" and "Influence of Alcohol" at 3 each. 13 of these collisions occurred during daylight hours. Four out of the 15 collisions reported a wet road surface. The location of collision for 7 incidents was beyond the driver's right shoulder, followed by the right lane with 4 collisions and beyond the driver's left shoulder at 3 collisions.

Table 1: Collision Rates Associated with MEN-1-(PM40.11/40.90)

Actual Fat Rate	Actual F+I	Actual Tot	Average Fat	Average F+I	Average Total
0.247	1.48	3.7	0.031	.68	1.42

MEN 128 (PM0.0/0.19)

A review was made of the recorded collision history for this 0.19- mile segment. There were 5 collisions (Fatal, 1 Injury, 3 PDO) between October 01, 2002 and September 30, 2007. Four of the collisions along this segment was reported in the intersection of SR 1 and SR 128. The actual total collision rate for this segment is 8.20 COL/MVM as compared to the statewide

Carlton Schrieve
June 30, 2008
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average of 1.5 COL/MVM for similar roadways. Within the intersection, the Primary Collision Factor for 3 collisions was "Failure to Yield", and "Speeding" for the remaining collision. For the collision located outside of the intersection, the Primary Collision Factor was reported as "Influence of Alcohol." This collision was reported as a fatal collision that occurred in the Dark.

Table 2: Collision Rates associated with MEN-128- PM(0.00/0.19)

Actual Fat Rate	Actual F+I	Actual Tot	Average Fat	Average F+I	Average Total
1.639	3.28	8.20	0.033	0.72	1.50

If you have any questions, please contact me at 445-6585.

Attachments: N/A

cc: Mike Yancheff

- 1) MLSuchanek
- 2) RMMartinelli
- 3) MABrady
- 4) File

MAB\mab\MEN_1_128_EA48470K_Table B_Collision Analysis.doc



Strategic Plan for the California Coastal Trail in Mendocino County

September 2010



Belinda Point Trail, Fort Bragg. Photo by Janie Rezner, 2008

Tamira Jones
Coastal Access Program Manager



Project Funding and Support by California State Coastal Conservancy



EXHIBIT NO. 15

**2010 CCT Strategic
Plan Excerpts**

**Permit No. 1-12-017
(Caltrans)**

(1 of 11)

The Strategic Plan for California Coastal Trail in Mendocino County, 2010 was made possible by the generous support of the Coastal Conservancy. Special thanks to Coastal Conservancy Project Manager Matt Gerhart, Louisa Morris, and Coastal Commission Access Program Manager Linda Locklin, for your edits and suggestions.

Special thanks also to project review committee members Rixanne Wehren, Morgan Zietler, Louisa Morris, Thad Van Bueren, and Matt Gerhart.

Many thanks to Jenny Hall of Mendocino Land Trust for technical and emotional support.

- Tamira Jones, Coastal Access Program Manager
Mendocino Land Trust
February 2, 2010

Priority	Project	Location	Feasibility	Funding/ Management	Support	Linkages	Resource Protection and Enhancement	Recommendations
MED	Construction of Navarro Blufflands Trail	Patrick PAE, Albion	<i>Studies Needed:</i> Completed, CDP obtained from Mendocino County	<i>Potential Funding:</i> Conservancy	<i>Lead Partner:</i> MLT	<i>Significance:</i> An out and back spur trail to the bluff.		1. Obtain funding to construct this trail within PAE on private property.
		<i>Trail Length:</i> 0.6 miles	<i>Permits Needed:</i> Caltrans Encroachment Permit, Building Permit	<i>Long-term Management:</i> MLT	<i>Other Partners:</i>	<i>User Demand:</i> Low		2. Work with Caltrans to explore potential partnerships that will facilitate non-motorized trail access.
		<i>Ownership:</i> Private	<i>Consistency with other planning documents:</i>		<i>Public Support:</i>	<i>Linkages:</i> Trail segment along property boundary to lateral along bluff.		
			<i>Access:</i> Pedestrian only			<i>Is there an alternative?:</i> Highway One		

Priority	Project	Location	Feasibility	Funding/ Management	Support	Linkages	Resource Protection and Enhancement	Recommendations
MED	Navarro Bluffs Trails Planning and Feasibility Study	Navarro Point Preserve to Navarro State Beach, Albion Map 14	<i>Studies Needed:</i> Botanical and archeological. Easement Appraisals. Property Surveys.	<i>Potential Funding:</i> Conservancy	<i>Lead Partner:</i> MLT	<i>Significance:</i> Connects trails at Navarro Point to Navarro State Beach.	<i>Other:</i> Provide safe alternative to Hwy 1 shoulder.	1. Work with private landowners and Caltrans to connect Navarro Point Preserve and Public Trail to Navarro River, either on west or east side of Highway One.
		<i>Trail Length:</i> 0.6 miles	<i>Permits Needed:</i> None for feasibility study	<i>Long-term Management:</i> MLT	<i>Other Partners:</i> CA State Parks	<i>User Demand:</i> Low		
		<i>Ownership:</i> Several private owners; CA State Parks; MLT	<i>Consistency with other planning documents:</i>		<i>Public Support:</i>	<i>Linkages:</i> Trail segment could follow bluff to existing private trail down to Navarro River.		
			<i>Access:</i> Pedestrian only			<i>Is there an alternative?:</i> Highway One		

Stairwell Feasibility Study at Van Damme State Beach

- Geotechnical
- Stairway Engineering Study
- Staff time

Deliverables:

1. Geotechnical report.
2. Stairway design.
3. Cost estimate for stairwell construction.

Trail improvements to access trail on Van Dyke property (Little River Market)

- Staff time (volunteer coordination)
- Materials

Deliverables:

1. Native rock retaining wall.
2. Trail tread clearing 10 width.

Acquisition of Albion Headlands or public access easement and parking

Deliverables:

1. Identify property holder and access manager for Headlands.
2. Purchase in fee of 65.5 acres for open space.
3. As an alternative to fee purchase, acquire PAE to and along bluff for a public trail.
4. Negotiate parking area for Albion Headlands trail users.
5. Acquire public parking at Albion Harbor.



Right to Pass sign at Spring Grove Road to Albion Headlands

Section 11: Spring Grove Road to Navarro River (Map 14)

11.1 Segment Overview

- Connect Spring Grove Road to Salmon Creek Bridge.
- Work with Caltrans to accommodate non-motorized trail users within right-of-way from Salmon Creek Bridge to Navarro Blufflands Public Trail.
- Construct Navarro Blufflands Public Trail.
- Connect Navarro Blufflands Public Trail to Navarro Point Preserve.
- Negotiate public access easements between Navarro Headlands, Navarro River and Navarro State Beach.



Informal path from Spring Grove Road to Salmon Creek Bridge overlook

11.2 Current Conditions

From Spring Grove Road to Navarro Point Preserve, the CCT hiking and biking routes are along the Highway One shoulder. Once non-motorized users reach the access road and trailhead at



View of highway right-of-way west of Highway One between Nonella Lane and Navarro Ridge pullout



View of shoreline looking towards proposed Navarro Blufflands Trail

MLT's 55-acre Navarro Point Preserve, a 1.0-mile loop trail affords spectacular views of the coastline. Non-motorized users must return again to the highway shoulder to travel the narrow section between Navarro Headlands and the junction of Highways One and 128. Highway One travels south across the Navarro River Bridge. Just south of the bridge is Navarro Beach Road, which leads to Navarro State Beach, which has several primitive beach camping sites.

MLT received approval for a Coastal Development Permit for the construction of a pedestrian trail from the Caltrans pullout west of Navarro Ridge Road. MLT plans to construct a 1,500 foot trail leading out to and along the bluff, which will be called the Navarro Blufflands Trail. This trail will hopefully be constructed by 2011.

11.3 CCT Potential

MLT has worked with two willing landowners to negotiate trail easements between the proposed Navarro Blufflands Trail and the Navarro Point Preserve, a distance of one mile. There is also a 1-acre parcel owned by the Coastal Conservancy in this area, which could become part of this CCT corridor. Only one additional intervening landowner remains between Navarro Blufflands Trail and the Navarro Point Preserve and Public Trail. As a side note, on the same property as the Blufflands Trail, a second offer-to-dedicate bicycle and pedestrian easement was imposed by the County in 2008 along the southern 103 feet of the parcel's eastern boundary for coastal trail.

Caltrans has initiated a project to replace a culvert at Navarro Creek, which has badly eroded the highway fill and undercut the banks. MLT and the Coastal Conservancy have partnered with Caltrans to design pedestrian access as part of this culvert remediation project. A soil bench will be placed on top of new fill at the creek, allowing people to cross on the west side of the Caltrans right-of-way.

MLT will need to negotiate an additional public access easement with its neighbor to the north of Navarro Point Preserve and Public Trail before any of these plans can proceed.

Between Navarro Point and the Navarro River is a challenging segment of the CCT, due to the steep descent to the Navarro River valley. From Navarro Point, two options other than the highway shoulder could become feasible, if landowners are willing. From Navarro Point, hikers could travel along the Preserve's eastern boundary until they reach a row of trees at the south property boundary. Non-motorized users could then travel along the

western Highway One shoulder until the first ninety degree turn in the road, where a driveway descends to three homes. If permission could be negotiated with these landowners, users could travel a short distance along the private road, where a trail could turn south and descend down a more gradual slope (which has evidence of an existing trail) down to a rock outcropping on the north side of the Navarro River. During the summer and fall, the Navarro River mouth is usually closed, making it possible to continue to walk south on the beach.

A second option could be a trail easement on the east side of Highway One, if private landowners were willing, connecting to Navarro Point through an existing 6-foot tall culvert that was once used for moving sheep under Highway One. Once east of the highway, the trail could follow a natural bench above Highway One. This potential route becomes steadily steeper, until brush along the hillside prevents passage further east. It may be challenging to find a feasible location for the trail down the southern slope, at which point non-motorized users would also have to find a location to safely cross the highway to reach the Navarro River Bridge.



Pullout west of Highway One across from Navarro Ridge Road Hwy 1 mile marker 42.5

11.4 Recommendations

A. Alignment

It is recommended that a public access easement(s) be negotiated with landowners on the south end of Spring Grove Road to connect Spring Grove with a trail to Salmon Creek Bridge. The County’s Coastal Element identified the area between Spring Grove Road and Salmon Creek Beach as a location where offers to dedicate for pedestrian access should be required as conditions of permit approval.

At the south end of the Salmon Creek Bridge is the Pacific Reefs Subdivision. Between Pacific Reefs and Nonella Lane is a wide utility corridor in the Caltrans right-of-way west of the highway, which only needs brushing to create a corridor for a narrow footpath. A trail along this embankment was cut when PG&E contractors cleared their utility corridor. South of Nonella Lane, there is one intervening parcel before the property where the Navarro Blufflands Trail will be constructed. This Navarro Blufflands Trail parcel has been subdivided and has two home sites, one along the highway and the other along the bluff. It is recommended that the Navarro Blufflands Trail be constructed before the house sites are developed on the vacant lots.

The open lot between Nonella Lane and the planned Navarro Blufflands Trail is steep, with a narrow shoulder and a wide Caltrans right-of-way at this location (100 feet in width). Ideally,



*Aerial view of Navarro Point
Photo: John Birchard*



Navarro State Beach

MLT (or another nonprofit) could acquire a public access easement at least 50 feet west of the highway. This parcel has significant wetlands in both its middle and southern sections. A wetlands crossing could be designed through or around willows. A westerly blufftop trail could be acquired with access from Nonella Lane; however, this is a gated area which is unlikely to allow public access by way of the road. There are wetlands along the bluff as well.

It is recommended that MLT continue its efforts to connect the Navarro Blufflands Trail to Navarro Point. These negotiations include acquisition of a PAE from Navarro Creek to Navarro Point (from a private landowner) and recording PAEs donated by two private landowners in this section.

B. Signage

Since all proposed alignment recommendations in this section include access across private property, signage will need to direct people toward designated trails and away from privately owned lands. In addition, signage needs to include safety language regarding steep bluff edges, seasonal conditions that might affect trail conditions, and highway safety.

C. Parking

There is parking at the Caltrans pullout west of Navarro Ridge Road, which is used by Caltrans maintenance for storing materials. There is parking at the intersection of Navarro Ridge Road and Highway One (5-8 cars, on the east side of the highway); and there is formal parking at Navarro Point (8 cars, one ADA parking space).



Highway One north of Navarro River

D. Management

The best possible scenario in this section, for portions of the CCT located in the Caltrans right-of-way, is a partnership between a land trust (who can manage day-to-day trail operations and maintenance) and the County (who can assist with planning and permitting for these trail segments), with some shared maintenance responsibilities. Caltrans does not maintain facilities they did not construct in their right-of-way. Partnerships for joint construction of improvement projects are a possibility, where road improvements are completed by Caltrans.

MLT manages the Navarro Point Preserve and Public Trail with donations and assistance from volunteers. MLT's monthly volunteer stewardship efforts could be expanded to include maintenance of additional trail segments in the adjacent area.

11.5 Proposed Projects

Purchase of Public Access Easement between Spring Grove Road and Salmon Creek Bridge

- Appraisal
- Purchase
- Staff Time

Deliverables:

1. Trail Easement Agreement connecting Spring Grove Road to Caltrans ROW at Salmon Creek Bridge.
2. Determination of Spring Grove Road status as County or private road.

Site Planning with Caltrans to explore use of ROW from Salmon Creek to Navarro Blufflands Trail

- Environmental Studies:
 - Archeological Report
 - Botanical and Wetlands Report
- Site Design
- Permit application
- CDP fee

Deliverables:

1. Completed technical studies.
2. Trail site designs and construction cost estimates.
3. Any needed easement agreements with adjacent landowners.
4. Encroachment Permit and Maintenance Agreement.
5. Coastal Development Permit application.

Construction of Navarro Bluffs Trail

- Fence
- Boardwalk
- Project Manager
- Labor
- Building Permit
- Signs

Deliverables:

1. Construction of an out-and-back trail from Highway One.

Navarro Creek Culvert Remediation and Pedestrian Access Project

- Cost Share with Caltrans for pedestrian walkway

Deliverables:

1. Erosion Control and Bank Stabilization of Navarro Creek.
2. Installation of fence between walkway and creek.
3. Construction soil berm for placement of trail.
4. Contouring of berm for allowable gradient for pedestrian trail.



*Old Coast Highway
Navarro Beach State Park*



*Old Coast Highway
above Navarro Beach*

Navarro Bluffs CCT investigation between Navarro Point and Navarro State Beach

- Public access easement appraisal
- Public access easement purchase
- Trail planning and site design: staff time
- Technical studies
 - Archeological
 - Botanical and Wetlands
 - Geotechnical

Deliverables:

1. Completed technical studies.
2. Trail Easement Agreements.
3. Trail site designs.
4. Trail construction cost estimates.
5. Coastal Development Permit application.

Section 12: Navarro River to Irish Beach (Map 14)

12.1 Segment Overview

- Utilize Old Coast Highway east of Navarro State Beach.
- Negotiate public access easements with landowners west of Highway One.
- Construct Peg & John Frankel Trail.
- Resolve public access issues at Irish Cove Beach.

12.2 Current Conditions

From Navarro State Beach, the hiking route is mostly along the Highway One shoulder south to Irish Beach. Only the Peg & John Frankel trail, 0.25 miles in length, located approximately 1.5 miles north of the Navarro River Bridge, provides an off-highway alternative. MLT has an approved permit and will construct this trail in 2011. This trail will end where the highway turns west, and non-motorized users must return to the Highway One shoulder until they reach the town of Elk.



*Cavanaugh Gulch
north of Elk*

In Elk, Greenwood State Beach is a second location where hikers and bikers can leave the highway and descend to Greenwood Creek Beach. From the beach access road, the CCT route remains on the highway shoulder until the Irish Beach Subdivision, where a road just past the subdivision entrance accesses the beach to the west.

12.3 CCT Potential

With participation from willing landowners, this section of the

County offers many opportunities for moving the CCT off-highway and closer to the coastline. Most of the land west of Highway One is undeveloped and zoned agriculture, with a few large properties. Several landowners have been approached to discuss their willingness to donate a public access easement west of Highway One.

From Navarro State Beach, the Old Coast Highway runs parallel to the shoreline, connecting to the current highway alignment after traveling through a residential neighborhood. Access from Navarro Beach could be developed along this abandoned Old Coast Highway, most of which is currently owned by State Parks. Improvements to the historic Navarro Inn are planned, including reconstructing the trail from the Inn to the old highway. Geotechnical experts have examined the old road cut and found the fill to be stable at present, but underlying retaining structures have failed or could fail in the near future. There would be ongoing maintenance issues along this CCT alignment, where landslides and erosion have cut into the banks. These areas could be re-contoured, or a pedestrian trail could be routed around failures and onto adjoining property, if landowners are willing. At the top of the old road bed is a residential road which serves about 12 homes west of Highway One.

Cavanaugh Gulch, 2.2 miles north of Elk, is visible from the highway shoulder and is private property. Like many spots along this stretch of coast, views of beaches and bluffs beckon to hikers and bikers traveling along the highway, yet these users have access only to the narrow highway shoulder. Cavanaugh Gulch is one of the more desirable coastal access points along this segment of CCT. The Coastal Element Policy 4.10-5 proposes that vertical access to Cavanaugh Gulch be obtained, connecting to the Caltrans turnout at milepost 36.85. Sonoma Land Trust had initiated a feasibility study to work with a private landowner in this section of CCT. When these landowners indicated they were not yet ready to provide public access, Sonoma Land Trust was unable to pursue this project.

One mile north of Elk, another vista point at Cuffy's Cove offers views of the coastline to the south. There is no shoreline access, but it is a good stopping point with historical interest.

In Elk, there is an old road south of Greenwood State Beach that might offer potential for a through-trail connection (if the creek is fordable) back to Highway One south of Greenwood Creek Beach.

South of Elk, on a bluff just north of Elk Creek, there is a public access easement held by MLT. This vertical easement is 10 feet

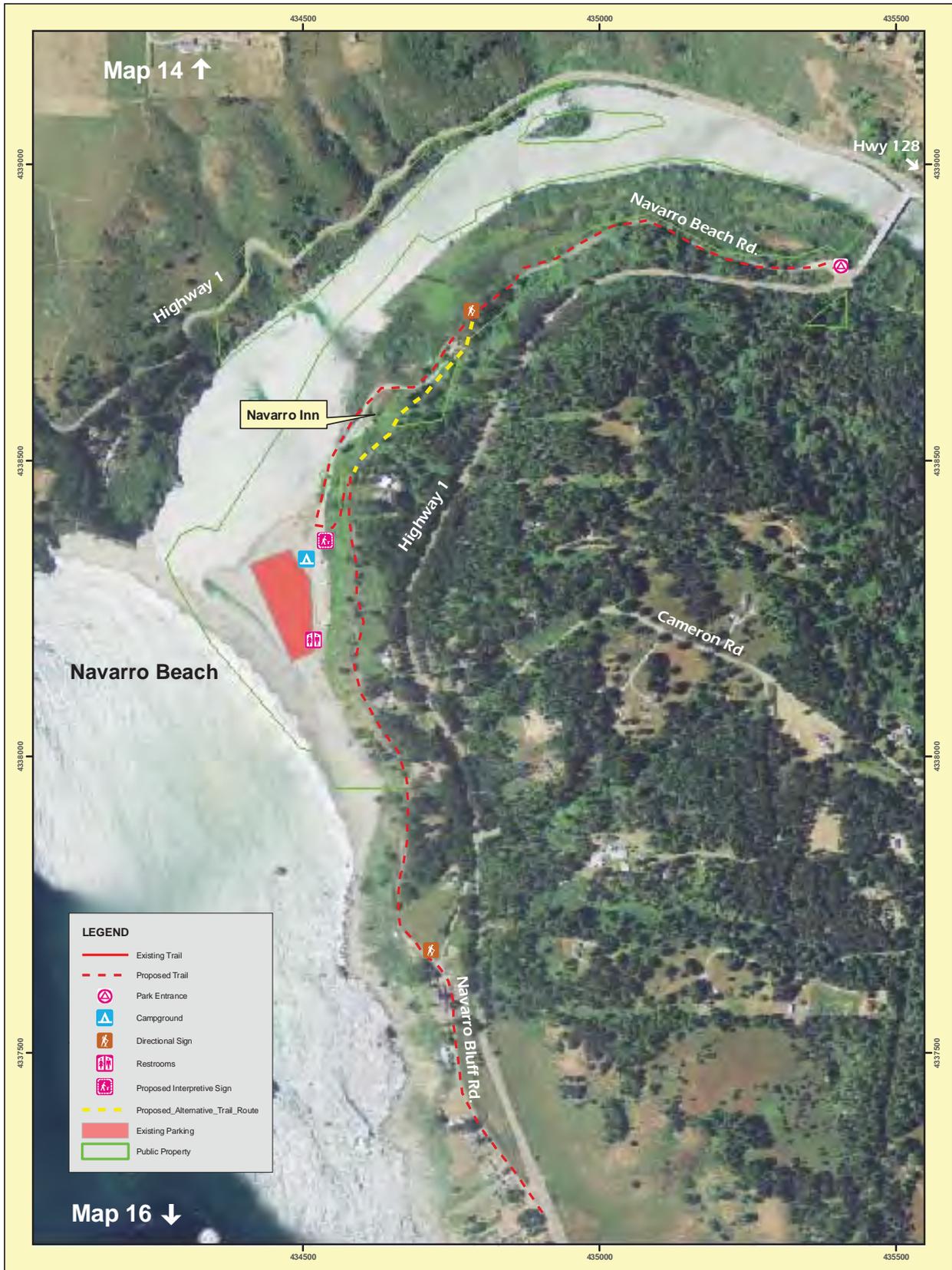


Property for sale along the coast west of Highway One near Elk



View of Cuffy's Cove

Map 15 - Navarro River Redwoods State Park





Dec. 2010

Mendocino Land Trust
Mendocino County Coastal Trail Strategic Plan
Navarro River Redwoods State Park



Scale 1:6,300 Grid: UTM z10 NAD 1983 meters



Boundary lines shown on this map have not been surveyed, are only approximate, and therefore should not be used to determine property lines.



Pacific Coast Bike Route/California Coastal Trail Engineered Feasibility Study

Final Report February 2013

EXHIBIT NO. 16
2013 PCBR/CCT Feasibility Study Excerpts
Permit No. 1-12-017 (Caltrans)

PREPARED BY:

Alta Planning + Design

IN ASSOCIATION WITH:

GHD, Inc

RCAA

PREPARED FOR:

Caltrans District 1 and Mendocino Council of Governments



Pacific Coast Bike Route/California Coastal Trail Engineered Feasibility Study

Final Report

Prepared for:

Caltrans District 1

Mendocino Council of Governments

Prepared February, 2013

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Executive Summary

The Pacific Coast Bike Route and California Coastal Trail Engineered Feasibility Study examines current conditions versus needed pedestrian and bicycle improvements for the Pacific Coast Bike Route (PCBR) in the right-of-way and along parallel routes to Route 1 in Mendocino County, as well as accommodation of the California Coastal Trail (CCT) where it is planned to share the Route 1 right-of-way, per prior studies and plans.

The results of this high-level planning study are based on a combination of data from Caltrans and other agencies and organizations; review of relevant plans, projects, and policies within the study area; field-gathered data of engineering and environmental conditions; and broad engagement with the public and stakeholders through two series of region-wide public workshops.

During the first workshop series, the project team introduced the study's process and methodology. On maps of the study area, participants identified gaps in pedestrian and bicycle facilities (See Appendix D for a summary of the workshop results). Participants scored a list of evaluation criteria based on improvement priorities. The public scored "Safety Concerns" and "High Bicycle and Pedestrian Use" as their first and second priorities, respectively.

Criterion	Basis for Higher Score
Bicycle and Pedestrian Facilities Conditions	Higher traffic volumes; speed limits; hills; curves; public comment
Safety Concerns	Higher # of bike or pedestrian accidents
High Bicycle and Pedestrian Use	High use counts by Caltrans; public comments
Provides a Regional Connection	Community and development areas, parks, preserves and destinations mapped or visible in GIS data/Google Earth; public comments
Gap Closure Opportunities	Lack of shoulders; narrow bridges; no feasible alternative route; relatively small segments without bike and pedestrian facilities located between nearby built facilities or connections to destinations (note that "improved" goal differs depending on terrain)
California Coastal Trail (CCT) Intersect	Depends on extent of planned CCT in segment without an alternative route
Biological and Cultural Resources	Low biological data score per ¼ mile and no present cultural resources
Constructability/Cost	Low average constraint score per ¼ mi; low construction cost per mile; adjacent to currently planned project

The project team identified an initial set of Potential Improvement Segments by applying the weighted priorities established from the public's input to an analysis of shoulder conditions. The segments were further developed through a dialogue with the technical advisory group (TAG) about how the segments relate to the context of existing community plans, active projects, trails and open space plans. Consideration was also given to the geographic spread of identified segments. The TAG's input also helped refine logical beginning and end points of Potential Improvement Segments in relationship to physical conditions and knowledge of planned projects along the study corridor.

A set of symbols was developed to score the Potential Improvement Segments based on the evaluation criteria. These segments are identified in the maps and tables in Chapter 3 of the study. Each criterion was scored according to the symbols listed in the following table.

Symbol	Associated Scoring Level
	High - strong presence/score
	Moderate presence/score
	Low - Limited presence/score
	Not present

Planning-level cost estimates were developed for each segment based on existing conditions and the type of proposed pedestrian and bicycle improvements. Potential Improvement Segments' evaluation criteria scores, as well as planning-level estimated costs for implementation, are compiled in Table ES-1.

Table ES-1. Summary of Potential Improvement Segments*

Segment Name	Existing Facilities	Safety	High Use	Regional Connection	Gap Closure	CCT	Bio and Cultural Resources	Constructability	Cost Estimate
Sonoma County Line to Gualala									\$14,100,000
Gualala to Glennen Gulch									\$8,100,000
Anchor Bay									\$20,900,000
Hearn Gulch to Point Arena									\$22,800,000
Point Arena to Garcia River									\$13,200,000
Greenwood State Beach/ Greenwood Bridge and Elk									\$14,300,000
Elk to Cuffey's Cove									\$2,200,000

Segment Name	Existing Facilities	Safety	High Use	Regional Connection	Gap Closure	CCT	Bio and Cultural Resources	Constructability	Cost Estimate
Navarro River to Little River	◐	◐	◐	●	●	●	○	◐	\$51,800,000
Mendocino to Fort Bragg	○	●	●	●	○	○	●	◐	\$11,700,000
Abalobadiah Gulch to Chadbourne Gulch	●	◐		◐	●	◐	◐	◐	\$35,500,000
Westport to Westport Union Landing	●		◐	●	◐	◐	◐	○	\$23,100,000

* Potential Improvement Segments are listed from south to north along the project's study area of State Route 1 in Mendocino County.

During the second workshop series, the project team presented the draft Potential Improvement Segments and asked for input on the following questions:

- Did we evaluate the draft Potential Improvement Segments correctly?
- What are the key sections of these segments that are most important for bicycle and pedestrian facility improvement?

The workshop participants provided feedback to these questions via a facilitated discussion and notes applied directly to the Potential Improvement Segments maps (See Appendix D for a summary of the workshop results). Although the participants' feedback did not result in conclusive priorities, it did provide useful input for further consideration of the Potential Improvement Segments by Caltrans during the project definition stage.

In summary, the PCBR and CCT Engineered Feasibility Study accomplished three major things:

- The collection of existing conditions base data in Geographic Information System (GIS) format.
- The identification of Potential Improvement Segments with their associated cost estimates.
- The gathering of public and stakeholder weighted priorities for pedestrian and bicycle improvements and their initial feedback on the Potential Improvement Segments.

This planning-level study is just the beginning of further planning and analysis of the Potential Improvement Segments. As a next step in the process, Caltrans will utilize the existing conditions GIS data, improvement cross section typologies, and initial planning-level cost estimates to advance the study of the Potential Improvement Segments. Caltrans will then seek to match developed design concepts with appropriate funding sources. Planning-level design concepts will sequentially follow the Caltrans projects that have

2.2. Caltrans Active Projects

Caltrans, in partnership with federal, regional and local transportation agencies, has several bicycle and shoulder improvement projects in progress at various stages of development. Brief descriptions of Caltrans Active Projects are listed in the below sections. Within each phase of development, projects are listed from South to North, according to Caltrans postmile designations. Active projects are also illustrated in Figure 2-2. Additional information can be found on the Caltrans District 1 web page: <http://www.dot.ca.gov/dist1/dlprojects>.

Listing a project as an “active project” may be potentially misleading. Caltrans projects are funded and developed in phases with some risk associated with the transition to the next phase or step in the development process. From a conceptual planning origin, the first step in the development process is to create a project scope, which defines the project limits and improvements to be made. The scope includes the timeline and budget for the project as well. The scoping document is the basis for Caltrans’ request to fund project development, including design and environmental compliance. Construction funds are reserved when the project is funded for development; however, funds are not allocated until the environmental document has been approved and all of the regulatory permits have been obtained. As budget projections and revenues fluctuate, it may be necessary to revise project schedules and priorities. New projects are typically not initiated without an expectation that funds will be available.

The Pacific Coast Bike Route / California Coastal Trail Engineered Feasibility Study identifies conceptual improvements at a planning level. In order to implement the recommended improvements contained in this plan, a project will need to request funding under one of the existing funding sources for which it is eligible. Funding is typically made available on an annual or biennial basis and projects initiated in one funding cycle are advanced and prioritized in the order that they have been adopted into the work program. If funding does not allow for a project to advance to the next stage of development, either the project will wait until funding becomes available or other sources of funding may be pursued for implementation.

2.2.1. Planning

Planning level projects have been identified in a plan, but have not received funding for project-level studies. The PCBR/CCT Engineered Feasibility Study is not a Project Study Report. The segments recommended for improvement have been determined to be deficient for bicycle and pedestrian travel in a high-priority segment of the Route. These areas are described as independent segments and are ready for advancing to the first stage of formal project development.

Point Arena ADA

This project has been identified as a need, but not initiated formally for project development. Due to budget constraints this project is not expected to be ready for construction until 2017 or later.

PCBR/CCT EFS Recommended Improvement Segments

These projects will wait for further development until a funding source has been identified and will follow behind the two projects already funded for PSR preparation.

2.2.2. Advance Planning

After a project has been initiated, funding must be secured to prepare a Project Study Report (PSR). A PSR is a scoping document that Caltrans presents to the California Transportation Commission as the basis for requesting project funding. The PSR includes an engineering evaluation of sufficient detail to provide estimates of the work involved to deliver the project; including design, right of way estimates and environmental compliance. The scope of work also includes cost estimates and a schedule for completing design, environmental compliance and construction.

Caltrans has secured funding to study two segments on State Route 1 in Mendocino County for bicycle and pedestrian improvements: Downtown Gualala and Fort Bragg to Tenmile River. These studies assumed that funding would be available under the Transportation Enhancement (TE) program, which was the primary source of funding for bicycle and pedestrian improvements under the federal transportation funding bill, SAFETEA-LU.² After these projects were awarded Advance Planning funds, the federal government approved a new federal transportation funding bill, MAP-21,³ which changed the way transportation funds will be distributed. Under SAFETEA-LU, funds were set aside for the TE program for the exclusive use of TE-eligible projects. Under MAP-21, funds for bicycle and pedestrian improvements will remain eligible for funding, but these funds are no longer guaranteed and must compete with other critical programs such as bridge replacement and highway safety projects. In all likelihood, the PSRs for Downtown Gualala and Fort Bragg to Tenmile River will be completed but have to wait for future funding for design and construction. As long as these two projects do not advance, it is unlikely that any of the planning-level projects will advance to the PSR stage.

Downtown Gualala

The Project Study Report (PSR) is funded and underway and is expected to be completed by June 30, 2013. The PSR will be prepared for the development of two travel lanes, a left turn lane, bike lanes and raised sidewalks on both sides of State Route 1 through downtown Gualala. The project, as initiated, includes the installation of 8 crosswalks, raised pedestrian median refuges in 6 of the crosswalks and landscaping between Sundstrom and Center Streets on the east side of State Route 1.

Fort Bragg to Tenmile River

The PSR is to be completed by June 30, 2013. A Project Study Report (PSR) will be prepared for the widening of existing shoulders to 4 feet. The project is located on State Route 1, from the Pudding Creek Bridge (Postmile 62.10) north of Fort Bragg to a point 8.3 miles north near the intersection of State Route 1 with Ocean Meadows Circle (Postmile 70.40).

2.2.3. Project Approval and Environmental Document

The Project Approval and Environmental Document (PA&ED) is the concurrent process of designing the project and evaluating the environmental impacts of a project. The project can be approved and advanced for construction funding when the design plans meet the purpose and need for the project, the design plans are in compliance with State design standards, the CEQA/NEPA document has been approved, and all permits have

² SAFETEA-LU: Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users

³ MAP-21: Moving Ahead for Progress in the 21st Century

been obtained from regulatory agencies. Once the PA&ED phase is complete and all permits have been received, the California Transportation Commission releases funds to construct the project.

Pacific Coast Bike Route Improvements, Phase III

The Pacific Coast Bike Route, Phase III project will add short sections of paved shoulder for bicycle travel on the southbound lane (western shoulder) of Route 1 between the community of Manchester and the community of Irish Beach (Postmiles 21.04 to 24.63). Pavement will be added to existing disturbed ground, where feasible, within the existing road prism. This project will not add shoulders throughout the entire project limits but will result in improvements at spot locations or in short segments where environmental impacts will be negligible. This project is in construction currently and will be completed in the summer of 2016.

Navarro Grade Guard Rail Safety Project

The Navarro Grade Metal-Beam Guard-Rail project will add or widen shoulders to four feet for the purpose of traffic safety but will have an added benefit for bicyclists. This project is expected to start construction in the summer of 2014.

Salmon Creek Bridge Replacement Project

Caltrans proposes to replace the Salmon Creek Bridge on Route 1 in Mendocino County. The current bridge, built in 1950, has a concrete deck over steel beams. The bridge is functionally obsolete because it is narrow and does not meet current standards for shoulders and guardrails. Maintenance costs are high because the steel beams must be repainted regularly. Salmon Creek Bridge is expected to begin construction in 2016. Additional information can be found on the Caltrans District 1 web page; the web address is provided below:

<http://www.dot.ca.gov/dist1/dlprojects/salmon/>.

Albion River Bridge Replacement Project

This project will evaluate improvements to the Albion River Bridge on Route 1 in Mendocino County near the town of Albion. This project is needed because the bridge is narrow, it does not meet current standards for shoulders and guardrails, and maintenance costs are high. Construction could begin as early as fall of 2016, although it could get delayed until summer of 2017. Additional information can be found on the Caltrans District 1 web page; the web address is provided below:

<http://www.dot.ca.gov/dist1/dlprojects/albion/>.

Mendocino Four Bridges Project

Caltrans proposes to widen the shoulders and install new bridge rails at Pudding Creek Bridge, Russian Gulch Bridge, Jack Peters Creek Bridge, and Little River Bridge. Pudding Creek Bridge, Jack Peters Creek Bridge and Little Rivers are expected to begin in construction in summer of 2017, while Russian Gulch Bridge is anticipated to start construction in summer of 2018, due to a more extensive environmental documentation process. Additional information can be found on the Caltrans District 1 web page; the web address is provided below:

<http://www.dot.ca.gov/dist1/dlprojects/men4bridges/>.

The study corridor was divided into 17 segments. The three highest priorities identified in this plan are Sections 2c, 3, and 4a surrounding the most densely settled portion of the study corridor in and around the village of Westport. Those sections were stressed by the local community because they will serve the greatest number of people, provide critical transportation connections between the village and outlying resident and visiting populations, and address safety concerns.

2.4. Basic Improvement Concepts

Except for bridge structures, slopes adjacent to the highway are the most significant single condition/constraint that would determine improvement requirements and feasibility. Another key factor is the width of existing shoulders; paved or unpaved, and thus proximity of the adjacent slopes.

Although the slopes adjacent to the highway vary widely along the project area, they tend to reflect whether the terrain is coastal terrace (relatively flat) or coastal hills (steep). For this reason, and to average the range of slopes for cost estimation purposes, the slopes along the highway were classified into three types:

- Type A – “Minor” slopes, from flat to below 25% or 4 feet horizontal to 1 foot vertical. For estimating purposes these were assumed to average 10% slope.
- Type B – “Moderate” slopes, from 25%, or 4 feet horizontal to 1 foot vertical, to 50% or 2:1. For estimating purposes these were assumed to average 40% slope.
- Type C – “Severe” slopes, from 50% or 2:1 to 1:2 (1 foot horizontal to 2 feet vertical). For estimating purposes these were assumed to average 100% slope, or 1:1.

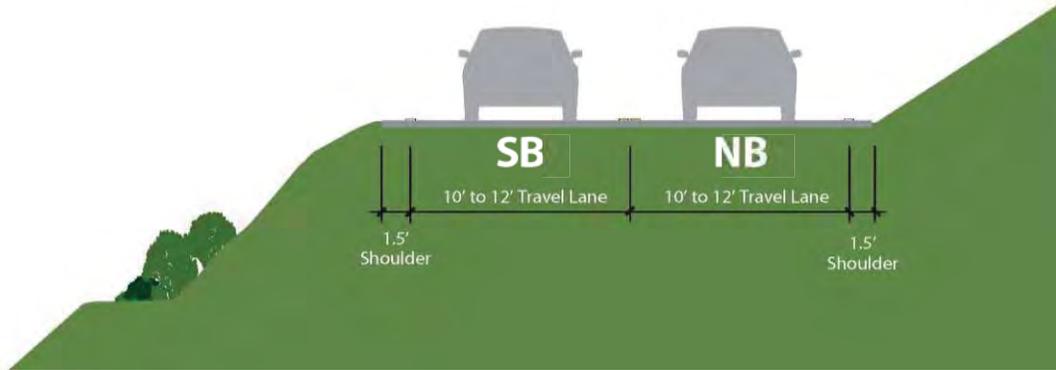
Two different design concepts were developed to respond to policy objectives and the basic physical constraints for widening:

- Where topographic constraints are minor or moderate (slope conditions A and B), the PCBR improvement goal was assumed to be 4 foot paved shoulders for bikes plus a 4 foot unpaved shoulder for a total minimum shoulder of 8 feet. Where the CCT occurs – typically on the west/SB side, the goal was assumed to be an additional 8 feet of space, plus an additional 1 foot of space for a crash barrier and fence between the shoulder and the CCT. The CCT could be paved or unpaved depending on the setting and use.

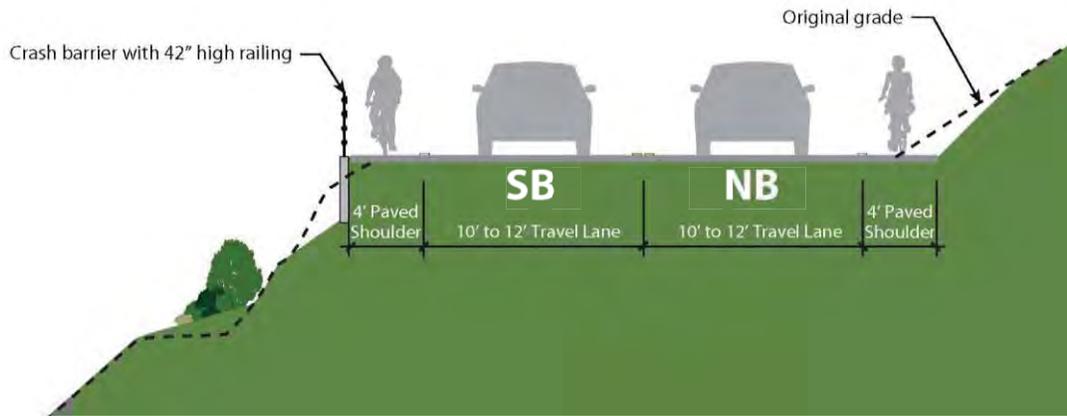
Where existing paved shoulders are wider than 4 feet they would remain, but if they are less than 8 feet, it is assumed that widening would occur to create the additional unpaved shoulder – which could be either native soil or base rock depending on the firmness of the material or agreements about the appropriate design (the cost estimates assume base rock to be conservative).

This design concept does not necessarily comply with HDM standards for shoulders or with County LCP or CCC policy regarding highway shoulders, and would be subject to review on a project-specific basis.

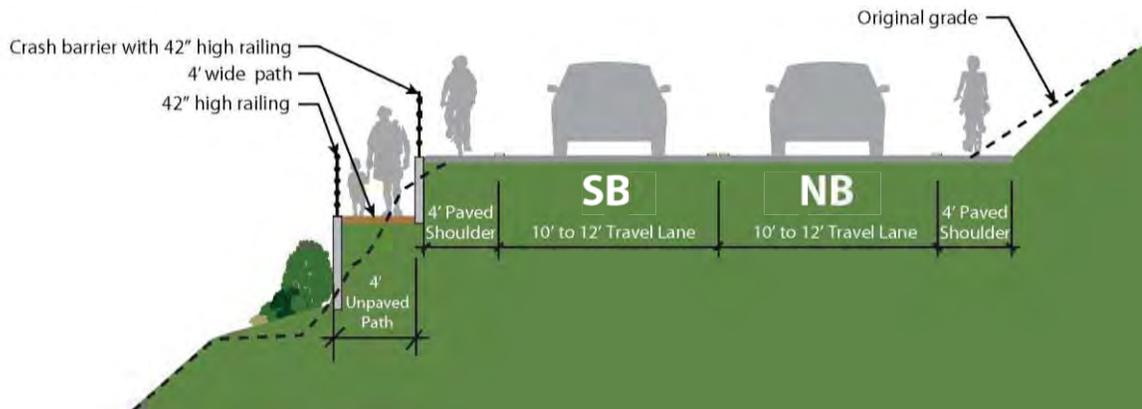
- Where topographic constraints are significant (slope condition C), the goal was assumed to be 4 foot paved shoulders for bikes, plus where applicable an additional 4 feet for the CCT, plus an additional 1 foot of space for a crash barrier and fence between the shoulder and the CCT. The CCT could be paved or unpaved depending on the setting and use.



Type C – Severe Cross Slope – Existing



Type C – Severe Cross Slope – Proposed PCBR



Type C – Severe Cross Slope – Proposed PCBR and CCT

2.6. Evaluation Criteria

The potential improvement areas were identified and “scored” based on the following eight criteria, which were adapted from the eight criteria reviewed by the TAG and public through the first phase of the project. Some criteria were combined and a criterion for constructability/cost was added, but the basic concepts are the same as the original set and the criteria are listed in the general order of importance to workshop attendees.

2.6.1. Bike and Pedestrian Facilities Conditions

Definition: Physical conditions that tend to be less safe, such as steep hills, horizontal curves (especially with limited line-of-sight), areas with higher posted speed limits, and areas with high traffic volumes; input from public and stakeholders about unsafe locations.

Available data: Physical conditions data from GIS maps; traffic and speed limit data from Caltrans; public and stakeholder input.

Evaluated by: Adding traffic volume and speed limit conditions to GIS database; view on map or cross-reference from post mile table.

2.6.2. Safety Concerns

Definition: Documented bike and pedestrian accidents.

Available data: Collision data involving bicyclists and pedestrians; from Caltrans or the Statewide Integrated Traffic Records System (SWITRS).

Evaluated by: Mapping or correlating post mile tables of this data with other GIS data and reviewing on map.

2.6.3. High Bicycle and Pedestrian Use

Definition: Commuter routes and other frequently used routes.

Available data: Prior and recent bike and pedestrian count data from Caltrans; input from public and stakeholders about high use locations.

Evaluated by: add count locations and results to GIS; view on map or cross-reference from post mile table.

2.6.4. Provides a Regional Connection

Definition: Routes between communities; access to destinations (e.g. parks, schools that are otherwise isolated).

Available data: GIS shapefiles; public domain data regarding communities, parks, and preserves.

Evaluated by: Viewing features on maps.

2.6.5. Gap Closure Opportunities

Definition: Relatively small segments without bike and pedestrian facilities located between nearby built facilities or connections to destinations. There is no or minimal shoulder or other alternative route to the highway for bicyclists and pedestrians (particularly narrow bridges). “Alternative route” is defined as a parallel public road that does not add significant climbing or distance compared to following the highway.

Feasibility of alternative routes and locations where CCT crosses from west to east side of highway or back requires resolution of safe highway crossing – good sight distance or ability to cross under a bridge.

Available data: GIS shapefiles; improved and planned bridges; existing shoulder widths (¼ mi. data – 0; 2'; 4'; 4-8'; 8'+); public road GIS data for alternative routes.

Evaluated by: Viewing features on maps; identifying, highlighting and briefly describing alternative routes and associated crossing conditions.

2.6.6. California Coastal Trail (CCT) Intersect

Definition: CCT alignment is planned within the State Route 1 right-of-way (constraints dictate that there is no other alternative).

Available data: CCT alignment GIS shapefiles from Mendocino Land Trust.

Evaluated by: Viewing CCT alignment on maps and correlating with other conditions.

2.6.7. Biological and Cultural Resources Impact

Definition: Avoiding or minimizing impact or conflict with sensitive resources and associated potential implementation costs or “fatal flaws”.

Available data: Environmental constraints in field data spreadsheet and maps with ¼ mile segment scores for biological resources constraints; Caltrans-supplied table of general presence or absence of cultural resources on ¼ mile segment basis.

Evaluated by: review of “red/yellow/green” maps reflecting significance of biological constraints and reference to ¼ mile segment table of cultural resource constraints.

2.6.8. Constructability/Cost

Definition: Existing physical conditions that present opportunities and constraints for wider shoulders and parallel trail, and the approximate estimated cost of the improvements.

Other factors and options that could impact cost and feasibility include adjacency to other planned state highway improvements (they could potentially be combined), and doing shoulder widening only on the southbound (most popular PCBR bicyclist direction) or on uphill side.

Available data: *Conditions and constraints* in the field data spreadsheet and maps with ¼ mile segment scores for physical constraints/constructability; planning-level cost estimates based on above data and Google Earth and Streetview inventory; Caltrans project data.

Evaluated by: Review of “red/yellow/green” maps reflecting significance of constraints; comparing estimated cost overall and per mile for potential improvements; identifying currently planned project.

2.7. Other Potential Improvements

While the study focused on addressing gaps, potential improvements were suggested by the public that are enhancements – such as signs and rumble strips on segments with shoulders that are already 8 feet. These have been included as a separate list.

2.8. Evaluating and Summarizing Potential Improvements

The goal was to provide an easily understood summary of how the Potential Improvement Segments were selected and how they rank relative to the criteria. An approximate “score” for each criterion for each potential improvement segment is provided by using shading as illustrated in Table 2-1. In all cases darker indicates that the improvement is more desirable or feasible.

Table 2-1. Scoring Levels

Symbol	Associated Scoring Level
	High - strong presence/score
	Moderate presence/score
	Low - Limited presence/score
	Not present

The basis for assigning these relative scores is summarized in Table 2-2. The scores for different criteria are not weighted relative to each other – the projects were considered for their overall feasibility and desirability.

Table 2-2. Basis for Establishing Scores

Criterion	Basis for Higher Score
Bike and Pedestrian Facilities Conditions	Higher traffic volumes; speed limits; hills; curves; public comment
Safety Concerns	Higher # of bike or pedestrian accidents
High Bicycle and Pedestrian Use	High use counts by Caltrans; public comments
Provides a Regional Connection	Community and development areas, parks, preserves and destinations mapped or visible in GIS data/Google Earth; public comments
Gap Closure Opportunities	Lack of shoulders; narrow bridges; no feasible alternative route; relatively small segments without bike and pedestrian facilities located between nearby built facilities or connections to destinations (note that “improved” goal differs depending on terrain)
California Coastal Trail (CCT) Intersect	Depends on extent of planned CCT in segment without an alternative route
Biological and Cultural Resources	Low biological data score per ¼ mile and no present cultural resources
Constructability/Cost	Low average constraint score per ¼ mi; low construction cost per mile; adjacent to currently planned project

3.2.8. Navarro River to Little River

Segment: Navarro River to Little River

PM 39.75 to 48.0

Description:

- Length: 8.25 miles
- This is a very long segment of the Pacific Coast Bike Route, an area that includes both more developed areas in Albion and Little River and sparsely populated areas between them.
- Slopes: A variety of slope conditions is present, encompassing the full range from gentle to severe
- Three bridges along the segment have planned improvements.
- Shoulders: Existing shoulders vary from 0' to 4' throughout the segment, with most areas ranging from 0' to 2'; proposed shoulders may be 4 or 8 feet in some places.
- Coastal Trail: Planned in ROW for most of the segment, but including a narrow and steep option on Albion Little River Road.

Score	Criterion	Considerations
	Bicycle and Pedestrian Facilities Conditions	Shoulder is sporadic throughout the segment. No pedestrian facilities, and many trip generators present.
	Safety Concerns	Three pedestrian- and bicycle-related collisions over this stretch of highway between 2006 and 2010.
	High Bicycle and Pedestrian Use	27 bicyclists counted at PM 40.9 over a 96-hour counting period.
	Provides a Regional Connection	Many regional destinations along this stretch of the Pacific Coast Bike Route, including populated areas of Little River and Albion, the Pygmy Forest, Van Damme State Park, inns and markets.
	Gap Closure Opportunities	High potential for gap closure, as shoulders do exist in some locations along this segment and the Salmon, Albion, and Little River bridges are all slated for improvements.
	California Coastal Trail (CCT) Intersect	High – the CCT is within the highway ROW for the entire segment.
	Biological and Cultural Resources Impact	Wetland areas present in spot locations throughout the segment. Many other habitat types present, including riparian habitat.
	Constructability/Cost	There are a wide range of slope conditions, habitat conditions, and levels of urban development along the corridor. The area surrounding the Navarro River will be extremely challenging. Three bridges have planned expansions.

Improvement Types by Post Mile: Navarro River to Little River

Quarter-mile

Segment	Northbound	Southbound	Cost
40.00	Type C, 1.5' Existing	CCT Type B, 1.5' Existing	\$2,806,806
40.25	Type C, 1.5' Existing	CCT Type C, 1.5' Existing	\$2,914,840
40.50	Type C, 1.5' Existing	CCT Type C, 1.5' Existing	\$6,833,810
40.75	Type C, 1.5' Existing	CCT Type C, 1.5' Existing	\$6,718,038
41.00	Type B, 1.5' Existing	CCT Type B, 1.5' Existing	\$567,875
41.25	Type B, 1.5' Existing	CCT Type A, 1.5' Existing	\$393,934
41.50	Type B, 1.5' Existing	CCT Type B, 1.5' Existing	\$582,875
41.75	Type B, 1.5' Existing	CCT Type B, 1.5' Existing	\$596,642
42.00	Type B, 1.5' Existing	CCT Type C, 1.5' Existing	\$568,446
42.25	Type B, 1.5' Existing	CCT Type B, 1.5' Existing	\$581,655
42.50	Bridge	Bridge	\$2,478,388
42.75	Type A, 1.5' Existing	CCT Type B, 1.5' Existing	\$549,467
43.00	Type B, 6' Existing	CCT Type B, 1.5' Existing	\$508,418
43.25	Bridge	Bridge	\$4,147,708
43.50	Type A, 1.5' Existing	Type A, 1.5' Existing	\$261,586
43.75	Type A, 1.5' Existing	Type A, 1.5' Existing	\$227,877
44.00	Type A, 6' Existing	Type B, 1.5' Existing	\$250,387
44.25	Type C, 6' Existing	Type B, 6' Existing	\$52,056
44.50	Type B, 1.5' Existing	Type C, 1.5' Existing	\$3,176,604
44.75	Type B, 1.5' Existing	Type B, 1.5' Existing	\$289,318
45.00	Type C, 1.5' Existing	Type C, 1.5' Existing	\$3,061,918
45.25	Type C, 1.5' Existing	Type C, 1.5' Existing	\$5,469,044
45.50	Type B, 1.5' Existing	Type C, 1.5' Existing	\$3,145,262
45.75	Type B, 1.5' Existing	Type B, 1.5' Existing	\$267,341
46.00	Type A, 1.5' Existing	Type A, 1.5' Existing	\$254,320
46.25	Type B, 1.5' Existing	Type B, 1.5' Existing	\$273,286
46.50	Type B, 1.5' Existing	Type A, 1.5' Existing	\$254,156
46.75	Type A, 1.5' Existing	Type B, 1.5' Existing	\$269,356
47.00	Type B, 1.5' Existing	Type B, 6' Existing	\$261,086
47.25	Type B, 1.5' Existing	Type C, 1.5' Existing	\$381,335
47.50	Type A, 1.5' Existing	Type C, 1.5' Existing	\$3,225,552
47.75	Type A, 6' Existing	Type A, 1.5' Existing	\$218,914
48.00	Type A, 6' Existing	Type B, 1.5' Existing	\$161,838
		Total	\$51,750,135
		Rounded Total	\$51,800,000

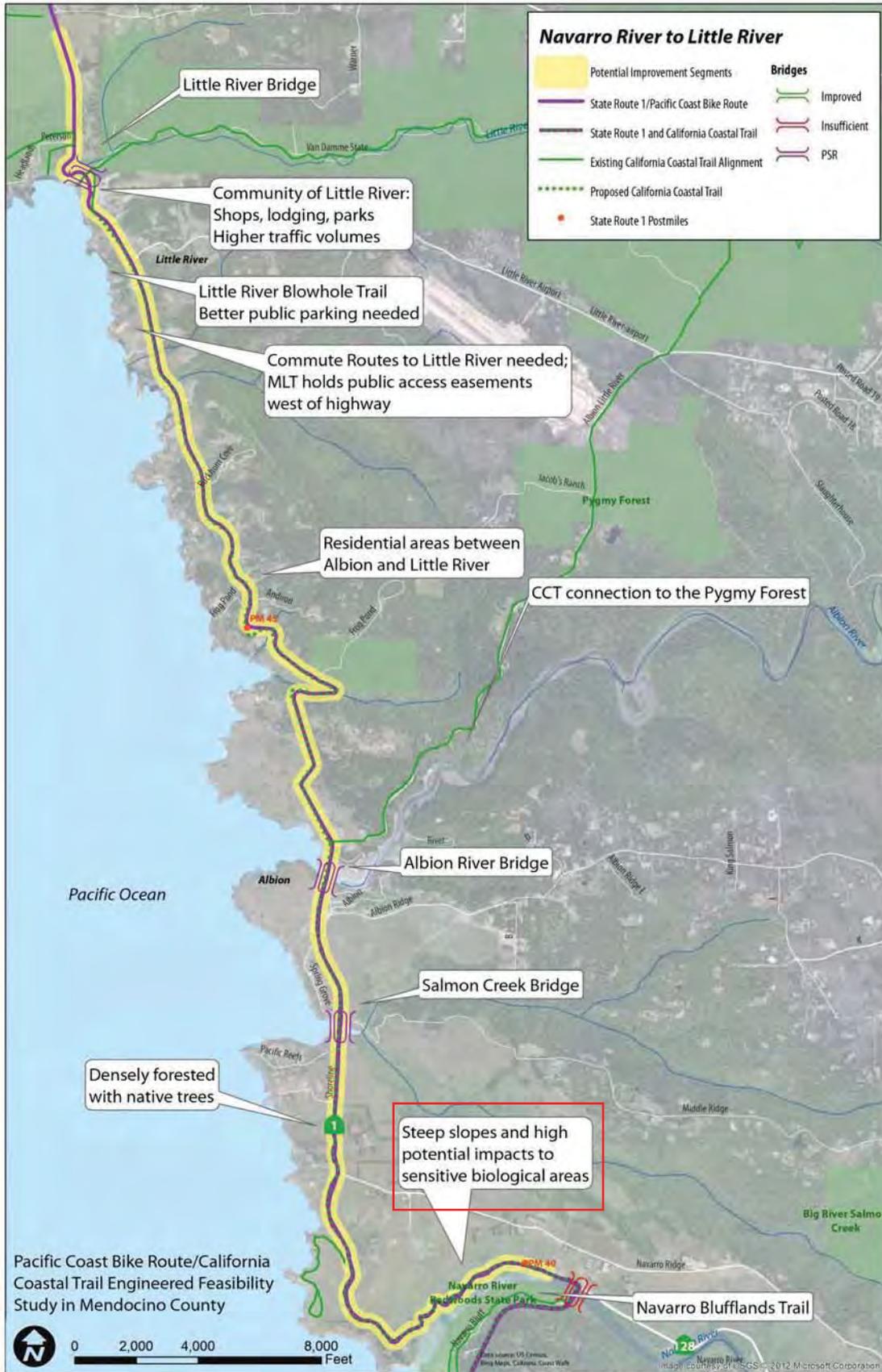


Figure 3-12. Navarro River to Little River Potential Improvement Segments

B. Study Data and Analysis Methodology

B.1. GIS Background Data

The mapping was built on Geographic Information System (GIS) data from Caltrans, Mendocino County, Google Maps, and other public sources. This included sources such as aerial photography, topographic contours, urbanized areas, place names, rivers and creeks, parcels, public roads and road names, parks and preserves. The Mendocino Land Trust provided GIS shapefiles of the existing and planned California Coastal Trail (CCT). While the source data was outdated, Land Trust staff helped check and correct CCT conditions and plans in key locations.

B.2. Caltrans Data

A substantial amount of data for the Study was provided by Caltrans District I. Most of this was not in GIS form but was in table form with post mile references that were geo-referenced to the maps. This included traffic counts, collisions involving bicyclists or pedestrians, bicycle and pedestrian counts conducted by Caltrans in selected locations, posted speed limit data, data on right-of-way conditions – whether owned in fee or by prescriptive rights (the former has a certain width; the latter provides rights only within the area of existing highway improvements), bridges and culverts, including information on bridges previously widened with bicycle and pedestrian facilities to current standards, and those currently being planned for improvements, and general data on cultural resources significance per quarter-mile segment. Data obtained through bicycle and pedestrian counts is presented in Table B-1.

Table B-1. Non-Motorized Count Data

Location	Date	Cyclists	Pedestrians
Leggett	July 13-15, 2012	90 (89 Touring, 1 Commute)	5
Post Mile 74.5 (Westport S.)	July 13-15, 2012	58 (58 Touring, 0 Commute)	1
Ten Mile Road	July 13-15, 2012	80 (74 Touring, 6 Commute)	20
Intersection of CA State Route 1 and CA State Route 20	July 13-15, 2012	292 (74 Touring, 218 Commute)	144
Post Mile 53.9	June 29-July 1, 2012	33	1
Post Mile 40.9	June 29-July 1, 2012	27	0
Post Mile 17.2	June 15-17, 2012	37	3
Post Mile 15.4 (Pt. Arena)	June 15-17, 2012	17	0
Post Mile 2.5 (N. Gualala)	June 15-17, 2012	34	2
Intersection of Pudding Creek Road and CA State Route 1 (Not Haul Road Trestle)	August 31-September 2, 2010	134	129
Intersection of Laurel Street and Main Street (Fort Bragg)	August 30-September 2, 2010	326	4,110

Engineer's Discretion

- **Complex Construction Required:** requires moderate to major improvements and complex construction

- Moderate to major grading
- Moderate to major vegetation removal
- Moderate to major resurfacing
- Moderate to major drainage improvements
- Moderate to major utility relocation
- Large retaining walls

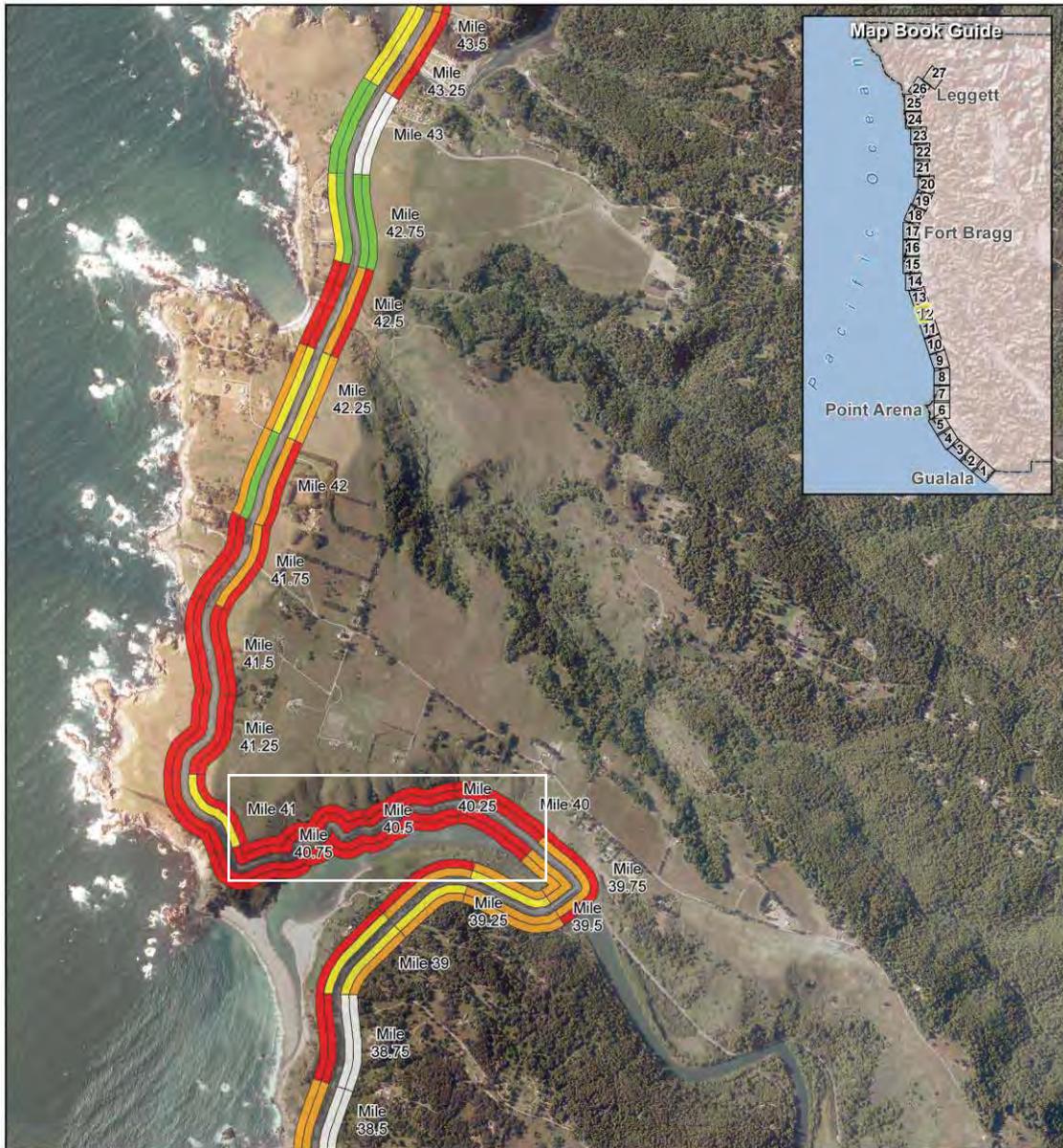


Engineer's Discretion

- **Very Complex Construction Required:** requires major improvements and very complex construction

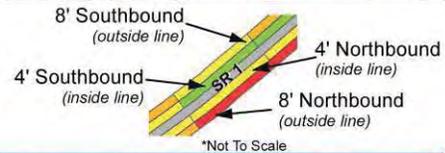
- Major to extreme grading
- Major to extreme vegetation removal
- Major resurfacing
- Major drainage improvements
- Major utility relocation
- Very large retaining walls and/or
- Cantilevered deck structures





Expanded Shoulder Construction Feasibility Ranking

- Simple
- Complex
- Existing
- Moderate
- Very Complex



Paper Size ANSI A
 0 500 1,000 1,500 2,000 2,500
 Feet
 Map Projection: Lambert Conformal Conic
 Horizontal Datum: North American 1983
 Grid: NAD 1983 StatePlane California II FIPS 0402 Feet



Mendocino Council of Governments
 Pacific Coast Bike Route

Job Number 12480-12002
 Revision A
 Date 09 Jun 2012

Construction Feasibility
 Quarter Mile Evaluations

Figure 12 of 27

P:\12480 Alta Planning Design\12480-12-002 MCOG-PacificCoastBikeRoute\08-GIS\Maps\Figures\WB_PCBR.mxd 718 Third Street Eureka CA 95501 USA T 1 707 443 8326 F 1 707 444 8330 E rob.holmlund@ghd.com W www.ghd.com
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 Data source: GHD, Engineering & Environmental Evaluation of SR 1, 2012. Mendocino County, County NAIP, 2010. Created by: bviivyan (GHD)

Figure B-13. Analysis Map Series

CALIFORNIA COASTAL COMMISSION

NORTH COAST DISTRICT OFFICE
710 E STREET • SUITE 200
EUREKA, CA 95501-6813
VOICE (707) 445-7833
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January 16, 2013

Memorandum

To:

Cheryl S. Willis, Deputy District Director, Planning and Local Assistance
Jesse Robertson, Associate Transportation Planner, Regional & Community Planning
Caltrans District 1
P.O. Box 3700
Eureka, CA 95502-3700

From:

Bob Merrill, District Manager, North Coast District
Lee Otter, Transportation & Public Access Liaison
California Coastal Commission (staff)

Mendocino County Coast, State Highway Route 1 corridor:
Pacific Coast Bike Route/California Coastal Trail
Engineered Feasibility Study Final Report, January 2013

Coastal Commission staff comments on final report. We greatly appreciate the opportunity to review the administrative and final drafts of the Engineered Feasibility Study (EFS) for the Pacific Coast Bike Route/California Coastal Trail (PCBR/CCT) along the Mendocino County Coast. Our overall impression is that this effort represents a fine example of collaborative, interagency planning—along with an effective public participation process. We applaud the initiative and leadership of District 1 in bringing this undertaking to fruition.

The EFS will provide a robust planning tool for the State Highway Route 1 corridor. We believe that the implementing agencies will find it of great value. In addition, the EFS will allow the respective regulatory agencies—including our own—to understand proposed transportation improvement projects in the context of the entire Mendocino Coast.

Relationship to coastal permit jurisdictions & disclaimer. While this is a planning level study document that is not anticipated to come before the California Coastal Commission for formal

review, it is likely to generate a number of specific projects (and even potentially Local Coastal Program amendments) that *will* need such review—either directly, or potentially, upon appeal. Therefore, with respect to any particular development project that may be forthcoming in the future, the following comments must be regarded as preliminary, pending future review by those agencies having coastal development review responsibilities. These agencies include Mendocino County, the incorporated coastal zone cities, and--in original jurisdiction areas or upon appeal—the Coastal Commission itself.

Therefore, we state the following disclaimer: All readers of the EFS should understand that Coastal Commission staff's participation in the collaborative planning process is for the purpose of producing a well-coordinated corridor plan—and does not represent advance Commission approval of any particular policy or project that is eventually brought forth to implement the plan. Each such future project will be subject to its own particular review process, both in terms of CEQA and each of the jurisdictions that hear coastal development permit applications. The outcomes will vary according to the application of the regulatory standards of review to the circumstances of each particular site.

This disclaimer emphasizes the need and value of the EFS, and follow-on planning efforts. In particular, it will serve to avoid a piecemeal approach to public access and transportation improvements along the Mendocino Coast. Our hope is that this example can be applied along other portions of Routes 1 and 101 in the California coastal zone.

Specific comments on the Final Report draft of January, 2013:

Acknowledgement Page

Under Technical Advisory Group subheading, correct spelling to read “Tami Grove.”

Section 2.1 Guidance for Design Concepts, page 2-1

Reference to Role of Mendocino Land Trust. The last paragraph on page 2-2 indicates the Mendocino Land Trust is “principally responsible for” CCT implementation in the County. We recommend substituting “a major contributor to” for “principally responsible for.” The Land Trust continues to do tremendous work in opening accessways that are a part of the CCT, however, the Trust does not have a legal mandate requiring the trust to be “principally responsible” for CCT implementation.

Elements of a complete Coastal Trail segment. The EFS, we believe, should provide an explicit identification of the characteristics that make for a complete, effective, functional Coastal Trail segment. These elements include trailhead parking, safe separation from motor traffic, and continuity to a rational destination point. The Coastal Commission staff recommends that consideration be given to inserting an additional section in Chapter 2 of the EFS document, to underscore this design concept.

Kibesillah example. Where terrain allows and there is a good working partnership of the stakeholders, a coastal trail segment can be established along Route 1 with only minimal capital investment. A case in point is the Kibesillah segment of the CCT. It may be useful to cite this example, possibly in this section of the EFS Report or as part of a follow-on study. A more complete description follows:

The recently-dedicated portion of this hiking trail is located on an easement along the inland edge of a privately-owned parcel, parallel to the State Highway Route 1 ROW. It effectively illustrates how the CCT can be implemented within or immediately adjacent to the State-owned highway ROW, while maintaining safe separation from automobile traffic. The implementation partnership included the Mendocino Land Trust and the State Coastal Conservancy, in coordination with Mendocino County and Coastal Commission staffs.

Separation in this case is achieved through both horizontal and vertical displacement relative to automotive traffic, as well as retention of existing screening vegetation where feasible. Simply put, the general strategy was to design it as a natural-surface footpath, aligned along the toe of the highway fill prism. Visual impacts along this highly scenic coastline were minimized by avoiding the need for new safety barriers at the edge of the roadway shoulder, reliance on mowed rather than paved surfaces within the trail easement, and installation of see-through range fencing.

Future improvements to the trail will include (1) an approximately 1,000-ft-long extension of the trail to the north where the CCT segment will connect with a future vertical access trail extending seaward to a blufftop overlook area and (2) the installation of a five-car off-highway parking area along the new section of CCT. Public access easements for these future improvements were secured through conditions of approval of a coastal development permit granted by the Commission for development on the property.

The Mendocino Land Trust has accepted these easements and plans to develop the trail, overlook, and parking area improvements in the future. The features of the existing Kibesillah Trail described above and the availability of off-highway parking and/or roadside pullouts suitable for trailhead parking and the inclusion of a logical visitor destination point, such as an overlook or beach access path are key characteristics that make for a complete, effective, and functional Coastal Trail segment.

Page 2-3 (Section 2.2 Caltrans Active Projects)

The description of the Salmon Creek Bridge project indicates the project is currently under construction. This statement should be corrected as the project is still in the planning and design process.

Page 2-12 (Section 2.4 Basic Improvement Concepts)

A continuing concern is that the Highway Design Manual's standards calling for 8 ft. paved shoulders could come into conflict with Coastal Act policies intended to maintain the rural portions of Route 1 as a scenic byway. Specifically, these policies require that the scenic, 2-lane character of State Highway Route 1 be protected in rural areas. Other Coastal Act policies require that public access opportunities to and along the coast be provided, and encourage facilities for non-automotive transportation modes.

In the Mendocino County LCP, these policy goals are met in part by specifying a 4 ft. paved shoulder. This allows bicyclists to get out of the motor traffic lane and will reduce accident risk for motor vehicles, while keeping pavement widths to a minimum. Where feasible to implement, this will greatly enhance the PCBR, in terms of safety as well as the quality of the recreational experience.

However, Caltrans points out that an 8 ft. shoulder has the additional advantages of providing a wider clear recovery zone along the traveled roadway, and enough room for disabled vehicles to get entirely off the road. Thus, we appreciated finding a clear explanation of a *modified* shoulder treatment that would provide a total shoulder width of 8 ft.—the first four feet being paved, with the outboard four feet being a graded but unpaved surface. By minimizing total paved width, this template helps protect the scenic character of the Route 1 roadway, while also meeting the safety goals of a wider shoulder. Of course, this treatment would be appropriate only where there is room, and would not result in damage to other sensitive coastal resources.

Pages 2-14 through 2-20 (Figure 2-6)

Figure 2-6. Typical Conditions and Improvement Cross-Sections. This is a series of diagrams that provide typical cross-sections to illustrate the relative positions and widths of the desired configuration of the paved roadway, paved shoulders, additional unpaved shoulder width, and where indicated, the CCT. Each illustration identifies a 10-12 ft. width for each of the (automotive) travel lanes, and a 4 ft. paved shoulder in each direction, consistent with the policies of the Mendocino County Local Coastal Program (LCP). Overall, we feel that this is one of the most helpful features of the EFS Report.

Clarification of "standard" bridge cross-section recommended. One of the bridge diagrams in Figure 2-6, on page 2-20, is titled "Caltrans Highway Design Manual Standards." As a footnote, or in the text, we recommend that the reader be advised along these lines: "The dimensions shown in this diagram are conceptual only, representing the unmodified application of Highway Design Manual standards. The design of actual highway and trail improvement projects will require adaptation to the local context, and will need to demonstrate conformance with the applicable Local Coastal Program requirements. In some cases, this may necessitate design exceptions. Example: the

approved Greenwood Creek Bridge, dimensioned as shown in the cross section that follows.”

Clarification of CCT alignment priorities recommended. The cross sections showing the CCT all assume it as a 4 to 8 ft.-wide paved or unpaved path immediately adjacent to the highway shoulder itself. We recommend that the EFS clarify that such a configuration will only be sought where there is no feasible alternative for a CCT alignment that parallels—but is separated from—the traveled roadway. The introductory text would be a good place to clarify the hierarchy of preferred CCT alignment alternatives, as elaborated below.

Suggested text: “The following alignment priorities apply to the overall placement of the PCBR and CCT, relative to one another and the traveled roadway. These priorities reflect not only public safety, but also the design principles of continuity and connectivity. And, mindful of the Legislative intent for this to be a *Coastal* Trail, high value should be placed on alignment in proximity to the shoreline, the bluff edge, or where high quality scenic vistas are afforded.

1. In order to optimize the recreational quality of both the PCBR and CCT, as well as the safety of cyclists, pedestrians and motorists, we believe the EFS should identify the first design priority as being an alignment that generally *avoids* or minimizes exposure to motor traffic. This is often feasible where the highway borders a State Park System unit or other public lands—or where existing or future State Highway segments are abandoned in favor of newer alignments, and become available for nonmotorized public access use. In this preferred scenario, the PCBR bikeway and the CCT hiking trail may be on separate alignments where there is sufficient space, or may be co-aligned as part of a firm-surfaced multi-modal path.
2. The second priority would be those situations where a completely off-highway PCBR/CCT alignment is *not* feasible. This will be the case where there is no available public ownership or trail easement away from the highway. Ongoing shoreline erosion or other physical barriers may also preclude implementation seaward of the highway. Along much of the rural Mendocino County coast, this means that the PCBR will take the form of paved shoulders on SR1. However, the alignment of the CCT footpath should wherever possible still put distance—both horizontal and vertical—between the motorist and the pedestrian.
3. Thirdly, where such alignment separation is *not* possible, it would be appropriate to plan for barrier separation. Barrier-separated paths have already been incorporated in the design of new bridges, including those at Noyo River in Ft. Bragg, Ten Mile

River, and Greenwood Creek in Elk. The approved Greenwood Creek Bridge cross-section is illustrated by the EFS document, and may well provide a template for future bridge replacements on SRI.

Elsewhere along the rural Mendocino County coast, absent an off-highway trail easement, public lands, or sufficient space within the State Highway ROW, the CCT will unavoidably have to be on an unpaved surface on the outboard side of a guard rail. EFS Figure 2-6 provides an appropriate range of configurations for locating the CCT adjacent to the PCBR and highway. However, this alignment is the least desirable alternative for providing CCT continuity.”

Supplemental cross-section suggested. The EFS Report’s Figure 2-6 shows only the latter CCT situation, which may lead the reader to incorrectly assume that the preferred CCT alignment would be adjacent to the PCBR and the highway itself. We recommend that the existing figure be supplemented with cross-section(s) showing the *preferred* CCT alignment as being *separated* from the highway. For this, we envision a cross-section drawing showing a 4 ft. unpaved foot path away from the paved roadway surfaces but still within the ROW—say, at the toe of the fill prism, just inside the ROW fence.

CCT follow-up study needed. In accord with the foregoing priorities for CCT alignment, our recommendation is that the EFS call for a follow-up system-level study to map and distinguish those segments where:

- a) it is feasible to locate both the PCBR and CCT *outside* of the highway ROW, and the primary remaining purposes of the paved shoulder will be for motorist safety and to serve local nonmotorized users (example: Ft. Bragg Mill Site redevelopment area);
- b) the State Highway ROW will be needed for the PCBR as a Class I bikeway or multi-modal path, but on an alignment separated from the paved roadway shoulder;
- c) the paved shoulder of the highway will function as the PCBR bikeway (Class II/III), but the CCT pedestrian strand will be outside the State-owned ROW (example: Russian Gulch State Park area);
- d) same as the preceding, except the CCT will need to be *within* the State Highway ROW, separated from the paved roadway and PCBR surfaces; and,
- e) if none of the foregoing are feasible, those locations where the PCBR will have to be on the highway shoulder and the CCT will have to be adjacent.

Chapter 3 Recommendations, commencing on page 3-1

We suggest that the introductory paragraphs to this chapter be augmented to recommend additional, small-scale detailed studies. Such studies would build on the work of the EFS, and would become actionable planning tools for particular areas of opportunity or

constraint. This discussion could also logically follow Chapter 3’s map section. We offer the text in the next two paragraphs below as content.

Next steps: focused studies for the highest-priority sub-segments. Each of the Potential Improvement Segments identified in the EFS can actually be broken down into a number of smaller, more discrete, more readily fundable potential project sites. Once identified, such sites can then be matured to the PSR stage, and/or referred to a partner agency for further evaluation.

In any case, as a next step locally-focused follow-up studies are essential—especially for the sub-segments where the need for CCT gap closure is most evident. Accordingly, the following three sub-segments should be accorded priority consideration for such focused study:

1. Elk area, southward from the museum, across the new Greenwood Cr. Bridge to the large bluff-edge pullout (informal parking area at tangent point of abandoned highway segment);
2. Ft. Bragg area, from the new Ten Mile River Bridge on the north, southwards through the City to Russian Gulch State Park, the village of Mendocino, and Van Damme State Park;
3. Kibesillah area, from the existing Highway One Vista Point/Bruhel Point Bluff access, southwards along the recently-opened 1.2 mile Jackson-Grube trail segment parallel to the highway, and on to the public parking area/trailhead at the South Kibesillah Gulch View Area. Terminology note: this developed blufftop scenic “View Area,” as listed in the current Coastal Access Guide, does not provide shoreline access, and may not be the same as the “Fishing Access” shown on the EFS mapping. Clarification needed.

Section 3.1. Segment Overview Maps and Summaries

Coastal Commission staff recommends that a cautionary note be added here. Suggested text: “The potential trail alignments shown in these diagrams are conceptual only. Identification and evaluation of site-specific impacts, previously unrecognized constraints, unexpected opportunities, availability of alternate off-highway routing, shoreline erosion, necessary highway realignments, and other local context factors will affect the actual alignment of any particular project or trail segment.”

Figure 3-3 North Central Mendocino County Segment Overview Map, on page 3-5

Near top of map, north of the “South Kibesillah Gulch Fishing Access” label, suggest show “existing CCT” symbol for recently-opened trail segment (starting at the South Kibesillah Gulch View Area—see terminology note above). As implemented pursuant to

the Jackson-Grube coastal development permit, this new 1.2 mile trail segment is aligned parallel to, and slightly offset from Route 1.

Table 3-1 Potential Improvement Segments, on pages 3-7 and 3-8

In the “Description” column, a couple of misplaced/duplicate descriptions need to be corrected (i.e., segments 4 & 7 with the “blind hill,” also segments 6 & 8 regarding Elk). For segment 10, we would recommend incorporating the “Kibesillah Area” terminology in the location name.

Figure 3-7 Anchor Bay Potential Improvement Segments, page 3-19

Map note for area north of Collins Landing Road: clarify to indicate that CCT *is* feasible, but will need to closely parallel highway. Suggest “CCT coincides with Highway 1. No viable alternative routes exist” [added word underlined].

Section 3.2.1 Sonoma County Line to Gualala, page 3-9

In the “considerations” column for the Regional Connection criterion, supplement the statement to note how the segment would also connect Gualala Point Regional Park and a developed three-mile long segment of the CCT at the north end of Sonoma County to Gualala.

Figure 3-9 Point Arena to Garcia River Potential Improvement Segments, page 3-27

Suggest add map note: “Explore potential for off-highway CCT alignment on BLM Stornetta lands.”

Section 3.2.6 Elk and Greenwood State Beach, page 3-29

The mentioned shoreline hiking route is blocked south of Greenwood Creek. Therefore, in “Description” for the Coastal Trail, suggest re-word to State: “New bridge at Greenwood Creek will provide excellent CCT. However, need to close gaps at both ends of the new structure for continuous CCT between the museum in Elk and the large pullout south of Greenwood Creek.”

In the “considerations” column for the CCT, suggest add: “Abandoned highway segment at south boundary of State Beach lands offers potential for outstanding public viewpoint, as well as potential off-highway CCT alignment. Potential partnership project with State Parks.”

Figure 3-10 Elk and Greenwood State Beach Potential Improvement Segments, page 3-31

Recommend add map note: “Explore potential for off-highway CCT alignment utilizing abandoned road bed at southern boundary of Greenwood State Beach.” Also, correction suggested for confusing map symbol that appears to show the CCT as crossing the

highway at the north abutment of the new Greenwood Cr. Bridge. Optimal alignment at this location is entirely along seaward shoulder of highway, connecting the new barrier-protected pathway on the bridge to the State Beach trailhead in Elk.

Section 3.2.8 Navarro River to Little River, page 3-37

In the “considerations” column for the CCT, suggest add: “However, lands within Van Damme State Park, the Mendocino Land Trust public access easements and ownership, as well as a Coastal Conservancy holding on the west side of the highway (Navarro Point area) suggest possible alternatives—including access to outstanding public viewpoints, as well as potential off-highway CCT alignment(s). Potential partnership project(s) with State Parks and the Coastal Conservancy.”

Section 3.2.10. Abalobadiah Gulch to Chadbourne Gulch, page 3-45

To enhance geographical clarity, suggest incorporate or reference the “Kibesillah Creek area” terminology for this narrative.

Figure 3-14 Abalobadiah Gulch to Chadbourne Gulch Potential Improvement Segments, page 3-47

Recommend add map note: “Extend recently-completed 1.2 mile Kibesillah (Jackson-Grube) CCT segment, to connect between the existing South Kibesillah Gulch View Area and the existing Highway One Vista Point/Bruhel Point Bluff access to the north.”

Figure 3-15. Westport to Westport Union Landing Potential Improvement Segments, page 3-51

The EFS Report map note, south of DeHaven Creek, states bluntly: “Major environmental impacts likely to riparian habitat and wetlands.” Recommend amplify map note to include: “Explore alignment and mitigation alternatives.” This will let the reader know that the presence of environmentally sensitive habitat areas will require carefully-focused work to reduce impacts to a less-than-significant level—but, will not be a “show-stopper” for CCT continuity.

Appendix A. On page A-2, Table A-1: Summary of Design Guidelines and Regulations, under Subheadings “California Coastal Commission (CCC)” and “Calif Coastal Act of 1976,” a more complete characterization of Coastal Act provisions would be helpful. We recommend adding the following bullets:

- “State Legislature mandates public access to and along the coast as a priority.
- “In Chapter 3, establishes general public access and coastal protection policies for the State. These include policies that require the retention of rural, scenic segments of State Highway Route 1 as a 2-lane road, and encourage non-automotive transportation alternatives.

- “Regulates coastal land use by requiring CDPs for all coastal zone development, including public works projects. Requirements are applicable to all State and local agencies.
- “Provides for delegation of CDP authority to local governments when LCP is certified.
- “Establishes appeal process for developments approved pursuant to locally-issued CDPs.

On page A-3, Table A-1: Summary of Design Guidelines and Regulations, under Subheadings “California Coastal Conservancy” and “Completing the California Coastal Trail Plan (2003),” a more complete characterization of this guidance document is needed. We recommend adding at least the following bullets:

- “Implements Legislative direction for the CCT, from SB 908.
- Provides overall principles for CCT alignment and design.
- Maps, at a broad scale, the primary gaps in CCT continuity.

The expanded “California Coastal Commission (CCC)” discussion in Section A.4.2, page A-17 to page A-18, appears thorough and accurate.