

# PROJECT STUDY REPORT

Humboldt Bay Trail: Bay Trail South Segment (Eureka-to-Bracut)  
X Street in Eureka to Bracut Industrial Center  
Humboldt County



	P R E P A R E D   B Y
	Humboldt County Department of Public Works  <i>In coordination with:</i> Humboldt County Association of Governments California Department of Transportation, District 1 City of Eureka City of Arcata North Coast Railroad Authority
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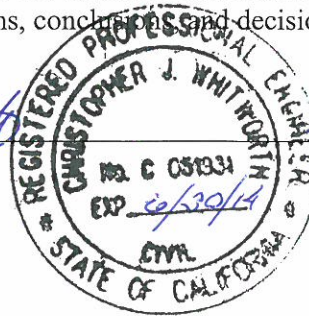
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## Table of Contents

<b>1</b>	<b>Introduction.....</b>	<b>3</b>
1.1	Existing Facilities .....	4
1.2	Standards.....	6
<b>2</b>	<b>Background and Project History.....</b>	<b>7</b>
2.1	Regional and Local Planning .....	7
2.2	Related Projects .....	11
<b>3</b>	<b>Purpose and Need .....</b>	<b>12</b>
3.1	Purpose .....	12
3.2	Need.....	12
3.3	Deficiency Summary .....	12
<b>4</b>	<b>Project Proposal.....</b>	<b>12</b>
4.1	Overview.....	12
4.2	Initial Engineering Study .....	13
4.3	Planning and Design Issues .....	13
<b>5</b>	<b>Alternatives.....</b>	<b>14</b>
5.1	Alternative Alignments.....	14
5.2	Alternative Design Concepts .....	15
5.3	Alternative Evaluation .....	15
<b>6</b>	<b>Community Involvement.....</b>	<b>15</b>
<b>7</b>	<b>Environmental Permitting and Compliance.....</b>	<b>16</b>
<b>8</b>	<b>Funding/Programming and Schedule .....</b>	<b>17</b>
<b>9</b>	<b>Contacts .....</b>	<b>18</b>
<b>10</b>	<b>References.....</b>	<b>18</b>

### Figures

- 1 Project vicinity
- 2 Overview of project reaches

## 1 INTRODUCTION

The Humboldt Bay Trail is a proposed Class I bikeway situated within the U.S. Highway 101 and railroad transportation corridors between the cities of Eureka and Arcata, along the east shoreline of Humboldt Bay. A Class I bikeway is a paved, two-directional trail separated from any street or highway. In addition to bicycle use, the trail would provide transportation, recreation, and coastal access opportunities for pedestrians, joggers, wheelchair users, skaters, and other non-motorized users. The total project length from X Street in Eureka to Samoa Boulevard in Arcata is approximately 6.8 miles.

The Humboldt Bay Trail is being developed as a collaborative effort between the Humboldt County Association of Governments (HCAOG), California Department of Transportation (Caltrans), Humboldt County, City of Arcata, and City of Eureka and in coordination with the North Coast Railroad Authority (NCRA). HCAOG is a joint powers authority that serves as the regional transportation planning agency for the county.

Planning for the Humboldt Bay Trail has been subdivided into two project areas: Bay Trail North and Bay Trail South. The City of Arcata is the lead agency for the Bay Trail North portion, which extends from Samoa Boulevard south to Bracut with a total length of 3.0 miles (60% within Arcata city limits, 40% within the unincorporated area of the county). Design plans are complete for the Bay Trail North portion and funding for construction is being pursued. Humboldt County is serving as the implementing agency for planning and design of the Bay Trail South portion (3.8 miles), which extends from X Street in Eureka north to the Bracut Industrial Center (40% within Eureka city limits, 60% within the unincorporated area of the county).

This Project Study Report (PSR) serves as the project initiation document for the Bay Trail South portion (Eureka-to-Bracut segment) of the Humboldt Bay Trail. The purpose of the PSR is to provide a well-defined statement of the purpose and need and to document the proposed scope, cost, and schedule for a project. The PSR marks the transition from project scoping to environmental permitting and engineering and provides the basis for including a project in the State Transportation Improvement Plan (STIP).

This PSR was developed in conjunction with an Initial Engineering Study (GHD, 2014) which provides a detailed evaluation of alignment options within the study area. Alignment options generally include “rail-with-trail” (trail closer to the railroad) and “highway-with-trail” (trail closer to the highway) segments. The Initial Engineering Study is a technical support document and does not identify a preferred or recommended alignment. The preferred alignment will be developed during the subsequent environmental review phase with input from stakeholders and the public.

The PSR is a milestone document in the project development process for transportation projects. Project development includes the following components (Caltrans, 2014):

1. Project initiation document
2. Preliminary engineering, environmental studies, and permitting – Project Approval & Environmental Document (PA&ED)
3. Preparation of plans, specifications, and estimates (PS&E)
4. Acquisition of rights-of-way
5. Construction

HCAOG has requested to program \$2.0 million for the PA&ED and PS&E components of the Eureka-to-Bracut segment of the Humboldt Bay Trail in the 2014 STIP. The preliminary cost estimate for right-of-way and construction ranges from \$9 to \$12 million. Costs for environmental mitigation are estimated at \$1.5 to \$2.0 million.

A concurrent project within the study area is the Eureka-Arcata Route 101 Corridor Improvement Project which is being implemented by Caltrans and HCAOG. The Corridor Improvement Project addresses six at-grade crossings on Highway 101 situated between the Eureka Slough bridge and the Route 101/255 separation in Arcata (PM 79.8 to PM 85.8). The Humboldt Bay Trail is formally linked to Highway 101 and the Corridor improvement Project through permit conditions established by the California Coastal Commission (Coastal Commission, 2013).

In addition to meeting transportation needs, the proposed Humboldt Bay Trail would achieve a critical link in the California Coastal Trail. As such, the project reflects a convergence of state mandates and represents an opportunity to partner with multiple agencies to leverage funding sources in order to deliver both transportation and recreation benefits.

The Bay Trail project is being designed with consideration for regional connectivity (Section 2.2). The Bay Trail South portion will connect with the Bay Trail North portion at Bracut and with the City of Eureka's waterfront trail project near X Street in Eureka.

## 1.1 Existing Facilities

### 1.1.1 Highway 101

U.S. Highway 101 is one of two major state highways in Humboldt County and spans the county in the north-south direction. Highway 101 is classified as a Principal Arterial within Humboldt County (HCAOG, 2010) and an Interregional Road System route (Caltrans, 2010). Highway 101 provides one of three routes around northern Humboldt Bay, along with Route 255 through Manila to the west and Myrtle Avenue/Old Arcata Road to the east.

The segment of Highway 101 between Eureka and Arcata has the highest highway traffic volume within Humboldt County with an average annual daily traffic of 36,300 (2011 data). In 2002, this highway segment was designated the Eureka-Arcata Route 101 Safety Corridor as part of a program to reduce collision rates at the at-grade intersections, and HCAOG and Caltrans initiated efforts for road improvements to improve safety and highway operations.

Within the study area, Highway 101 is a four-lane expressway with two travel lanes in each direction (south-bound and north-bound) separated by a vegetated drainage ditch. The roadway includes 11- to 12-foot wide travel lanes and ten-foot wide shoulders. The highway is used by commercial trucks, passenger cars, bicyclists, and pedestrians and serves as a shared roadway for vehicles and non-motorized travelers.

Across from Fay Slough and near the California Redwood Company lumber mill, a row of mature Eucalyptus trees extends for approximately 1.5 miles adjacent to the highway separated by a metal beam guard rail. The Eucalyptus trees were planted in the 1920s and are considered to have aesthetic and local historical value.

Highway 101 crosses Eureka Slough with two parallel bridges separated by approximately 40 feet (Caltrans, 2013). The southbound bridge (total length of 884 feet, constructed in 1943) includes two 100-foot steel pony truss main spans and multiple concrete box girder approach spans on concrete piers. The southbound bridge has a four-foot wide shoulder on the right lane. The

northbound bridge (total length of 947 feet, constructed in 1956) is composed of concrete slab and girder spans on concrete piers. The northbound bridge has a five-foot wide raised sidewalk adjacent to the right lane.

#### 1.1.2 Railroad

The railroad around Humboldt Bay is part of the Northwest Pacific Railroad (NWP) line which has been owned and managed by the NCRA since 1992. The track embankment was constructed starting in 1900 along the margin of the bay. Commercial railroad operations ceased in 1998 under order of the Federal Railroad Administration following severe storm damage on the line within the Eel River canyon. Track and infrastructure damage on portions of the line in northern Mendocino and southern Humboldt counties has isolated the northern portion of the line from the rest of the NCRA track system. Funds have not been available for maintenance on the northern portion of the NWP line since railroad operations were discontinued. Portions of the line have deteriorated with embankment erosion, culvert failures, tie deterioration, and vegetation growth (Willdan/HNTB, 2002; AndersonPenna Partners, 2012). The railroad crosses Eureka Slough with an approximately 17-foot wide, 730-foot long bridge composed of concrete box girder spans and a steel hydraulic lift section, supported on concrete pilings (Willdan/HNTB, 2002; Alta et al., 2007; AndersonPenna Partners, 2012).

Stakeholders for the railroad around Humboldt Bay include the Timber Heritage Association (THA), a volunteer-based organization with facilities in Samoa. THA currently operates speeder rides on portions of the line through a Memorandum of Understanding with NCRA. In addition, THA seeks to operate an excursion train around the bay. Organizations including the East-West Rail Advocates, Upstate RailConnect Committee, Land Bridge Alliance, and Humboldt Bay Harbor Working Group are pursuing a feasibility study to evaluate an alternative rail route connecting Humboldt Bay to the national rail network in the Central Valley.

#### 1.1.3 Private Property

California Redwood Company (CRC) owns and operates a lumber mill within the study area at Brainard, situated west of the highway and railroad corridors opposite Fay Slough Wildlife Area. Bracut Industrial Center is a privately owned facility situated west of the corridors at the north end of the study area. Each of these properties has a driveway connection to Highway 101 crossing the rail line.

#### 1.1.4 Project Reaches

The study area is divided into five general project reaches:

1. Reach 1 (Crossing Eureka Slough). This reach starts at X Street in Eureka and includes the crossing of Eureka Slough. The highway and railroad each have existing bridges over the slough. The highway and railroad converge to become adjacent and parallel at the east side of Reach 1. The length of the reach along the railroad corridor is 0.6 miles.
2. Reach 2 (Eureka Slough to California Redwood Company). The highway and railroad are adjacent and parallel to each other within this 1.0-mile reach.
3. Reach 3 (California Redwood Company and South Eucalyptus Area). This reach is adjacent to the CRC mill property and includes the southern portion of the Eucalyptus tree stand which occupies the edge of the highway embankment. The length of the reach along the railroad and highway corridor is approximately 0.75 miles.

4. Reach 4 (North Eucalyptus Area). This reach extends northeast of the CRC mill property and includes the portion of the Eucalyptus stand that is not adjacent to the mill. The highway and railroad are adjacent and parallel to each other along this 0.6-mile reach.
5. Reach 5 (End of Eucalyptus Area to Bracut Industrial Center). The highway and railroad are adjacent and parallel to each other within this 0.95-mile reach.

## 1.2 Standards

### 1.2.1 Highway and Bikeway

The Highway Design Manual (Caltrans, 2013) provides guidance on design standards, policies, and procedures for projects involving the State Highway System. The Highway Design Manual includes mandatory design standards (Table 82.1A) and advisory design standards (Table 82.1B).

Chapter 1000 of the Highway Design Manual provides guidelines for planning and design of bicycle facilities (bikeways). A “bikeway” is defined as a facility provided primarily for bicycle travel (Streets and Highway Code Section 890.4). A Class I bikeway (also called a bike path) provides a completely separated right of way for the exclusive use of bicycles and pedestrians with minimal crossflow by motorists. Chapter 1000 provides design criteria for geometrics, separations between bike paths and highways, drainage, and signing and delineation.

Other pertinent standards and guidelines include:

- American Association of State Highway and Transportation Officials (AASHTO) – Guide for Development of Bicycle Facilities (AASHTO, 2012).
- California Manual on Uniform Traffic Control Devices (CAMUTCD) (Caltrans, 2012).
- California State Parks Accessibility Guidelines (California State Parks, 2009).
- California Coastal Trail – Definition & Siting and Design Standards (California Coastal Conservancy, undated).

### 1.2.1 Railroad

The NCRA Trail Guidelines (NCRA, 2009) provide policies and procedures for trail projects within the NCRA right-of-way. These guidelines were developed to provide uniform and consistent standards for the design, construction, safety, operations, and maintenance of rail-with-trail projects in a manner that is compatible with safe operation of the railroad right-of-way and with current rail capacity needs and future rail capacity expansions. The Trail Guidelines state that proposed projects are considered by the NCRA Board of Directors on a case-by-case basis in the context of NCRA’s and its contract operator’s highest priorities of operating safe and efficient current and future rail freight and passenger services in the NWP transportation corridor.

The Trail Guidelines include planning and consultation requirements, design standards, and maintenance requirements. Proposed projects are reviewed by the NCRA’s contract engineer and the licensed operator (NWP Co.). The Trail Guidelines specify design standards for clearances, grade crossings, surfacing, utilities ingress and egress, landscaping, fencing, lighting, drainage, and access. The City of Ukiah is currently in the process of applying for a license agreement and encroachment permit for a rail-with-trail project in accordance with the Trail Guidelines.

The California Public Utilities Commission (CPUC) has jurisdiction for railroad activities and implements regulations for crossings and clearance under the California Public Utilities Code. General Order No. 26-D defines minimum clearance requirements. Any new crossing or changes (temporary or permanent) to an existing crossing would require authorization from the CPUC.

## 2 BACKGROUND AND PROJECT HISTORY

### 2.1 Regional and Local Planning

#### 2.1.1 Humboldt Bay Trails Feasibility Study (RCAA, 2001)

The Humboldt Bay Trails Feasibility Study evaluated opportunities to improve non-motorized access to and around Humboldt Bay by expanding or creating trails. The study identified the Humboldt Bay segment of the California Coastal Trail as the backbone of a regional trail system that provides coastal access to the bay. The concept of a trail project between Arcata and Eureka separate from the Highway 101 corridor was identified as the highest priority project in the region because it would connect the two largest cities in the county, provide recreational access to the bay, and enable the safe use of bicycles for transportation on a heavily traveled highway segment.

#### 2.1.2 Humboldt Bay Trail Feasibility Study: Eureka to Arcata (Alta et al, 2007)

In 2006, local agencies and stakeholders initiated a cooperative planning process to analyze the feasibility of developing a Class I bikeway/multi-use trail between Arcata and Eureka. The project area extended from X Street in Eureka north to Samoa Boulevard in Arcata along the railroad and highway corridor. The corridor was divided into twelve segments based on topography and other features, and five options (four trail options and a no-project option) were developed and evaluated. The assessment report presented information regarding design concepts, opportunities and constraints, environmental impacts, magnitude of costs, projected benefits, and implementation recommendations. The rail with trail option was identified as having the broadest public support.

#### 2.1.3 Humboldt Bay Management Plan (Humboldt Bay Harbor, Recreation and Conservation District, 2007)

The Humboldt Bay Management Plan is the primary planning document for the Humboldt Bay Harbor, Recreation and Conservation District. The plan contains Policy RFA-1 which states that the District shall endeavor to support the development of new access points that propose safe and appropriate public recreational access to Humboldt Bay. Following this plan, the District's economic development committee convened a series of meetings in 2009 to discuss prioritization of potential policies and actions. The committee identified the need to improve recreational infrastructure and opportunities that promote community health and boost economic development related to tourism as a priority. The committee report supported the aim of "preserving the publicly owned [railroad] right-of-way to be managed in the most feasible, best and highest use with an eye to the future that includes trails and railroad options" (Humboldt Bay Harbor District, 2010).

#### 2.1.4 Humboldt County Regional Pedestrian Plan (HCAOG, 2008)

The Humboldt County Regional Pedestrian Plan provides a guide for development of infrastructure for pedestrian use. The goals of the plan include creating a pedestrian-safe environment and improving pedestrian access to important destinations. The Humboldt Bay Trail is identified as a regional trail project that would fulfill the goals of the 2008 Pedestrian Plan.

#### 2.1.5 Humboldt County Regional Trails Master Plan (HCAOG, 2010)

The Humboldt County Regional Trails Master Plan provides a framework for promoting the development of a regional active transportation system that ensures safe and equitable access for non-motorized users. The plan was developed to address the limited options for active travel between north coast communities. HCAOG carried out a regionwide program to solicit community input on needs and priorities. The Humboldt Bay Trail is identified as a priority project that would connect local residential, commercial, and recreational destinations; link to



concurrent trail projects in Arcata and Eureka; and add a significant segment to the California Coastal Trail.

#### 2.1.6 Humboldt County Corridor Preservation Report (HCAOG, 2010)

The Humboldt County Corridor Preservation Report is a source document for HCAOG and its members with information and potential strategies for preserving, acquiring, and utilizing public transportation corridors for multi-modal uses. The document defines a corridor as a geographic alignment that accommodates travel or potential travel, encompassing a single or multiple transportation routes and facilities, the adjacent land uses, and the connecting network of streets. The NCRA railroad and Highway 101 are identified as key corridors within Humboldt County. The City of Arcata's rail-with-trail project and the City of Eureka waterfront trail are identified in the report.

#### 2.1.7 Humboldt County Coastal Trail Implementation Strategy (RCAA, 2011)

The California Coastal Trail (CCT) is intended to be a continuous network of public trails along the coastline that provides non-motorized recreation and transportation opportunities for the widest possible range of potential users. Redwood Community Action Agency (RCAA) initiated a coordinated planning effort in 2009 with funding from the California State Coastal Conservancy to develop an implementation strategy for completing the CCT within Humboldt County. Fifty partner organizations participated in and contributed to the planning effort. Public involvement was achieved through surveys, workshops, and comments on the draft report.

The Humboldt CCT Implementation Strategy report (RCAA, 2011) includes alignment evaluation and prioritization and trail demand projections for the approximately 158-mile-long segment within Humboldt County. Trail alignments were evaluated based on the goals of providing a scenic experience; maximum access for a variety of non-motorized uses; connectivity to destinations and amenities along the coast and local communities; separation from motorized traffic; minimum impacts to natural habitats and cultural and archeological resources; and respect for private property. For the segment between Arcata and Eureka, the report recommends a bike path with soft surface shoulders along the rail corridor around Humboldt Bay.

The report developed quantitative estimates for trail use (transportation and recreation) by analyzing local demand and tourist demand. Tourist demand was estimated at the county level based on county visitor data and applying use factors from studies of other trails across the country. Local demand was forecasted using a bicycle and pedestrian demand model called the Seamless Travel Model developed by Alta Planning + Design. The model applies a predictive formula based on demographic data (employment density, population density), presence of retail activity, and length of Class I bike path within the vicinity of a project reach. Results were adjusted for seasonal factors to develop annual estimates. Local demand was forecasted for the segments defined in the CCT study, which did not include a segment corresponding directly to the Humboldt Bay Trail. Based on the analysis and results in the Implementation Strategy report, a preliminary order-of-magnitude estimate for annual trail usage of the Humboldt Bay Trail is approximately 80,000 to 100,000 trips per year.

#### 2.1.8 Humboldt Regional Bicycle Plan (HCAOG, 2012)

The Humboldt Regional Bicycle Plan supports the development of convenient, safe, and context-sensitive facilities that foster increased use by bicyclists and pedestrians of all ages and abilities. The plan is intended to facilitate projects that link adjoining jurisdictions' bicycle routes and serve to build a regional bicycle network. The goal of the plan is to create the safest conditions for bicyclists by providing bikeways and improving roadways to eliminate barriers to bicycle travel.

The Humboldt Regional Bicycle Plan includes the following policies relevant to the Humboldt Bay Trail:

Policy 1.2: HCAOG recognizes the high level of public support for a dedicated bicycle and pedestrian trail in the NCRA and Caltrans corridor between Eureka and Arcata (the “Humboldt Bay Trail”), and supports multi-jurisdictional, public, and private efforts to develop it.

Policy 1.8: HCAOG supports implementing “Complete Streets” programs and policies for the California Coastal Trail (CCT) along the shoreline of Humboldt’s coastal communities.

Policy 2.4: HCAOG shall ensure that all regionally-funded transportation planning and development projects enhance bicycle transportation to the extent feasible, as consistent with California Complete Streets Act of 2008 (AB 1358) and Caltrans Deputy Directive 64-R1.

The Humboldt Bay Trail: Arcata to Eureka Segment is identified as a regional priority project in the 2012 Bicycle Plan.

#### 2.1.9 NCRA Humboldt Rail Corridor Committee (NCRA, 2012)

In 2012, the NCRA commissioned the Humboldt Rail Corridor Committee to assess the condition of the railroad corridor around Humboldt Bay and opportunities for restoration; opportunities for the return of freight service; and opportunities for development of trails consistent with NCRA’s trail policy. Focused technical studies were commissioned to assess the condition of the railroad corridor (AndersonPenna, 2012) and prepare budgetary cost estimates for rail-with-trail projects (GHD, 2012). Three public meetings were conducted in September and October 2012 for presentations and discussions regarding corridor condition, rail-with-trail projects, and prospects for train use of the corridor.

The NCRA committee developed a report in December 2012 which was adopted by the NCRA Board along with resolution 2012-13. NCRA Resolution 2012-13 declares the following policies:

- NCRA states its support for a broad-based community coalition to advocate for the investment of public and private funds to restore the Humboldt Bay rail corridor, in whole or in part, clearly incorporating rail and trail development into such restoration, generally consistent with NCRA trail policy;
- NCRA will work with the Northwestern Pacific Railroad Co., the Timber Heritage Association and others to build interest in, and support for the restoration of local freight and passenger excursion service;
- NCRA will consider clearly defined and strictly limited exceptions to its current trail policy to enable development of a trail in the Humboldt Bay corridor without compromising the prospects of rail service restoration;
- NCRA will prioritize rail infrastructure restoration and trail development in the Eureka to Arcata corridor to more clearly align its timing and objectives with those of the Humboldt County Association of Governments’/Caltrans’ U.S. 101 Corridor Improvement Project;
- NCRA will also prioritize rail restoration in the Arcata to Samoa corridor in order to facilitate the restoration of passenger excursion service.

#### 2.1.10 Humboldt Regional Transportation Plan (HCAOG, 2013)

In 2013, HCAOG initiated an update to the Regional Transportation Plan (RTP) for Humboldt County. The full public draft of the RTP was released for public and agency review in October 2013, with adoption anticipated later in 2014. The RTP is a long-range planning document (planning horizon of 20 years), updated every five years, for future transportation investment in the region. The RTP presents overall goals, objectives, policies, and performance criteria and includes a list of identified priority projects. The goal of the Complete Streets element of the RTP is for the streets, roads, and highway system throughout Humboldt County to meet the transportation and safety needs of all users, including pedestrians, transit users, bicyclists, motorists, the elderly, youth, and the disabled. The goal of the Trails element of the RTP is for the county to have a network of connected regional and local trails which gives people options for safe, active transportation. The six main objectives of the RTP are: balanced mode share/complete streets; economic vitality; efficient and viable transportation system; environmental stewardship; equitable and sustainable use of resources; and safety.

The RTP includes the following policies relevant to the Humboldt Bay Trail:

Policy CS-2: HCAOG recognizes the high level of public support for a dedicated bicycle and pedestrian trail in the NCRA and Caltrans corridor between Eureka and Arcata (the “Humboldt Bay Trail”), and supports multi-jurisdictional, public, and private efforts to develop it. *(Identical to Policy 1.2 in the 2012 Bicycle Plan)*

Policy CS-4: HCAOG shall ensure that all regionally-funded transportation planning and development projects enhance bicycle transportation to the extent feasible, as consistent with California Complete Streets Act of 2008 (AB 1358) and Caltrans Deputy Directive 64-R1. *(Identical to Policy 2.4 in the 2012 Bicycle Plan)*

Policy CS-5: HCAOG shall encourage and promote regional “complete street” projects for the demonstrated economic benefits they bring to local businesses, markets, and property values.

Policy Trails-1: HCAOG shall coordinate and support local jurisdictions in developing a regional trails network. HCAOG shall support lead agencies in completing a contiguous California Coastal Trail in Humboldt County. The regional network shall provide travel options for residents and visitors, including transportation-disadvantaged populations.

Policy Trails-3: HCAOG shall pursue, and help member entities pursue, active transportation system funding to implement priority trail projects identified in the Humboldt County Regional Trails Master Plan.

Policy Trails-6: HCAOG supports actions to improve the safety of the regional trails system, which is an integral part of an active transportation system.

The Humboldt Bay Trail is identified as one of the projects in the regional trails Action Plan portion of the RTP.

## 2.2 Related Projects

### 2.2.1 City of Arcata – Arcata Rail with Trail Connectivity Project

The Arcata Rail with Trail Connectivity Project was initiated in 2009, and is subdivided into two phases. Phase 1 (1.5 miles) extends from Samoa Boulevard north to Western Avenue and has funding programmed for construction starting in 2014. Phase 2 (3.0 miles) is the Bay Trail North portion of the Humboldt Bay Trail, and extends from Samoa Boulevard south to Bracut along the NCRA railroad and Highway 101 corridor. The City of Arcata plans to apply to the state Active Transportation Program for construction funding for Phase 2 (Bay Trail North) in May 2014.

The Bay Trail North segment includes two bridge crossings (Gannon Slough and Jacoby Creek) and two culvert crossings (Old Jacoby Creek and Brainard's Slough). The general design for this segment provides for the trail along the east side of the railroad embankment except for the crossing over Jacoby Creek, where the trail is aligned to cross over the future new highway bridge.

### 2.2.2 HCAOG/Caltrans – Eureka-Arcata Route 101 Corridor Improvement Project

The Eureka-Arcata Route 101 Corridor Improvement Project was initiated in 2002 to improve safety and operations along Highway 101 between Eureka and Arcata. The draft Environmental Impact Report was circulated in 2007. The proposed project includes work at six at-grade intersections, including a half-signal at Airport Road; a compact diamond interchange at Indianola Cutoff; and median closures at Mid-City Motors, CRC, Bracut, and Bayside Cutoff. Additional work includes replacement of the southbound Jacoby Creek bridge; bridge rail replacement; tide gate replacement; and extension of acceleration and deceleration lanes. These work elements may be constructed separately due to variable funding sources and/or permitting constraints.

In September 2013, the California Coastal Commission issued a conditional concurrence with the proposed consistency determination submitted by Caltrans and HCAOG, including a condition that the Corridor Improvement Project could not commence construction until adequate funding and right-of-way commitments are in place for the Humboldt Bay Trail. In November 2013, the HCAOG board formed the 101 Corridor and Bay Trail Ad Hoc Committee with representatives from City of Arcata, City of Eureka, County of Humboldt, and Caltrans to ensure close coordination and collaboration on the linked highway and trail projects.

### 2.2.3 City of Eureka – Waterfront Trail

The City of Eureka currently has three phases of the Eureka Waterfront Trail in the planning process. Phase C starts at the Adorni Center and extends along the margin of Humboldt Bay to the existing Target Trail, then continues with a proposed undercrossing of Highway 101, and extends to Tydd Street in the Myrtle town area. Phase C of the Eureka Waterfront Trail would intersect with the Bay Trail South segment of the Humboldt Bay Trail in the vicinity of the Target Trail and Eureka Slough.

## 3 PURPOSE AND NEED

### 3.1 Purpose

The primary purpose of the project is to improve safety for non-motorized and motorized travelers between Eureka and Arcata. The project will have additional benefits including congestion relief, enhanced coastal access, enhanced opportunities for recreation and nature study, community connectivity, reduced fuel consumption, reduced emissions, and partial rehabilitation of the railroad prism.

### 3.2 Need

The project is needed because Highway 101 between Eureka and Arcata is an incomplete transportation facility that does not provide safe mobility for all users. Demand for a trail between the two largest cities of Humboldt County has been a regional priority for over 15 years. Completion of a Class I bikeway is one of the permitting requirements for the Eureka-Arcata Route 101 Corridor Improvement Project which is a high-priority project within the region.

### 3.3 Deficiency Summary

Highway 101 is not designed to safely convey motorized and non-motorized users within the same right-of-way.

## 4 PROJECT PROPOSAL

### 4.1 Overview

The proposed project is a separated bikeway (trail) constructed between the railroad and highway. While the overall Humboldt Bay Trail project is a complete trail connecting Eureka and Arcata, the study area for this PSR is the Bay Trail South portion between X Street in Eureka and the Bracut Industrial Center.

Primary constraints include:

- Limited available right-of-way
- Proximity to sensitive resources
- Need for compatibility with railroad, highway, and private property
- Crossing Eureka Slough
- Mature stand of Eucalyptus trees
- Potential for inundation and/or erosion along Humboldt Bay

The proposed trail has a 10-foot-wide paved surface with two-foot-wide soft shoulders on each side. The trail would include a center strip delineating the opposite directions of travel and associated regulatory, warning, and directional signs. Barriers of different types (walls, fences, railings, vegetation) will be incorporated to separate the trail from the railroad or highway where needed, and for other purposes such as delineating sensitive areas and private property. The trail will include drainage facilities and measures for erosion control. Trail amenities may include viewing platforms, benches, and interpretive signs.

## 4.2 Initial Engineering Study

An Initial Engineering Study (GHD, 2014) was prepared to provide supporting technical information for this PSR. The purpose of the Initial Engineering Study was to study the constraints within the project area and refine the design concepts to reduce uncertainty and minimize costs and impacts. This study was necessary because previous engineering design work was limited and no site-specific environmental data had been collected. Work activities for the Initial Engineering Study included reconnaissance environmental investigation; engineering constraints field investigation; alignment analysis; and preliminary designs and cost estimates.

Design concepts were developed in the Initial Engineering Study to meet the following objectives:

1. Satisfy the project purpose and need
2. Achieve cost-effectiveness
3. Avoid or minimize environmental and right-of-way impacts
4. Avoid or minimize new crossings of waterways and new crossings of the railroad, Highway 101, and other roads and intersections
5. Consider opportunities to enhance the recreational experience

A total of ten alignment combinations were developed for comparative evaluation. The budgetary cost estimates included rehabilitation work for the railroad prism where needed for construction access or where a rail-with-trail segment warrants upgrades to preserve the integrity of the prism.

## 4.3 Planning and Design Issues

### 4.3.1 Final Alignment Selection

The preferred alignment will be selected as part of the next component of project development (PA&ED), which includes: preliminary engineering; environmental studies and permitting; further consultation with Caltrans, NCRA, and adjacent private landowners; and input from regulatory agencies, stakeholders, and the general public. The potential for a phased approach for crossing Eureka Slough will be evaluated.

### 4.3.2 Right-of-Way

Right-of-way issues include the following:

- NCRA – Mapping and deed review for the NCRA right-of-way is currently in progress. The project will require a license agreement and encroachment permit with NCRA in accordance with the NCRA Trail Guidelines.
- Private Property – Mapping and deed review for private property at the CRC mill and Bracut Industrial Center is currently in progress. The project may require right-of-way acquisition depending on the selected trail alignment.
- Caltrans – The project is expected to require a cooperative agreement or encroachment permit with Caltrans for development within Caltrans right-of-way.
- Billboards – A total of seven billboards are located within the project area. Some or all of these billboards may conflict with the project depending on the selected trail alignment. Land ownership and legal status of the billboards are currently in review.

#### 4.3.3 Environmental

The project area includes the shoreline of Humboldt Bay and adjacent habitat areas which are subject to the jurisdiction of federal and state environmental laws and regulations. The general approach for project development includes first trying to avoid and/or minimize impacts to the extent practicable, then implementing appropriate mitigation for unavoidable impacts. Based on the Initial Engineering Study (GHD, 2014), mitigation for wetland impacts will be required. A wetland mitigation plan will be prepared in consultation with the regulatory agencies to determine the appropriate mitigation ratios. The first preference for mitigation is on-site, in-kind with no temporal loss. Caltrans is developing wetland mitigation sites for the Eureka-Arcata Route 101 Corridor Improvement Project, with a goal that these sites could serve to provide some or all of the required mitigation for the Bay Trail project. Anticipated studies and permits are listed in Section 7 of this report.

#### 4.3.4 Hazardous Materials/Waste Identification

An Initial Site Assessment will be performed to determine whether hazardous materials and/or waste are present within the project area.

#### 4.3.5 Utilities

Utilities are located within the project area. Potential impacts to utility facilities and the need for re-location or modification will be evaluated during the preliminary design phase.

#### 4.3.6 Eucalyptus Trees

The compatibility of the Eucalyptus trees adjacent to Highway 101 with the project will be evaluated. Issues include right-of-way constraints and potential hazards due to falling limbs and branches.

#### 4.3.7 Sea Level Rise

The project will be evaluated and designed with consideration for sea level rise. The sea level rise exposure profile for the project will be analyzed, and the project will be designed to be compatible with sea level rise exposures and/or to allow future adaptation measures. This effort will be conducted in conjunction with two ongoing planning efforts regarding sea level rise on Humboldt Bay: (1) the Humboldt Bay Sea Level Rise Adaptation Planning Project being coordinated by the Humboldt Bay Harbor, Recreation and Conservation District and Humboldt County; and (2) the Caltrans District 1 Climate Change Pilot Study.

#### 4.3.8 Management and Maintenance

HCAOG and the partner agencies will continue to develop a long-term management and financing structure (including volunteer support) for the trail.

## 5 ALTERNATIVES

Alternatives for locating a regional trail to connect Arcata and Eureka have been evaluated in previous studies (RCAA, 2001; Alta et al, 2007). A brief summary of alternative alignments and alternative design concepts is provided in the following sections.

### 5.1 Alternative Alignments

#### West Side of Railroad Corridor

This alternative would develop a trail on the west side (toward the bay) of the railroad prism. This alternative was not pursued due to expected higher construction costs and expected impacts

to the more sensitive habitat type (salt marsh and mud flat) within the bay. In addition, there is higher uncertainty whether the required permits could be acquired. This alternative could be evaluated in the future in conjunction with efforts to look at adaptive measures for sea-level rise.

#### East Side of Highway 101

This alternative would develop a trail on the east side of Highway 101. This alternative would require multiple crossings of Highway 101 and other roads to provide a continuous trail that is connected to the regional trail system. Right-of-way needs have not been evaluated but are expected to be substantial. New crossings of creeks and sloughs would be needed. The increased distance and separation from Humboldt Bay are also shortcomings. For these reasons, this alternative was not pursued.

#### Re-align Entire Railroad and Highway Corridors

This alternative would shift the railroad and highway corridors eastward to allow a trail on the existing railroad prism. This alternative is logical from a planning perspective and has the benefit of locating the trail directly adjacent to the bay to enhance the recreational experience. This alternative would be a major infrastructure project with a cost on the order of \$50 to \$100 million. Funding sources for a project of this magnitude are currently unknown. For near-term planning, this alternative was assumed to be cost-prohibitive and was not pursued. This alternative could potentially be viable if major funding is secured for a new railroad connection between Humboldt Bay and the Central Valley.

## 5.2 Alternative Design Concepts

#### Bike Path with Adjacent Multipurpose Trail

This alternative would develop a multipurpose trail with a natural surface adjacent to the paved bike path. This alternative would support equestrian use and pedestrians who prefer an unpaved surface. This alternative was considered infeasible due to the constrained right-of-way.

#### Widened Shoulders

This alternative would widen the shoulders to provide access for equestrians and others who prefer an unpaved surface. This alternative was considered infeasible due to the constrained right-of-way.

#### Trail on Railroad Tracks

This alternative would develop a trail on top of the existing railroad prism for most or all of the project area. This alternative was not pursued because NCRA Resolution 2012-13 stated the NCRA's policy of planning for rail restoration and trail development together with potential consideration for clearly defined and strictly limited exceptions to its current trail policy.

## 5.3 Alternative Evaluation

The project described in this PSR is expected to be the most feasible for implementation in the short-term (three to six years).

# 6 COMMUNITY INVOLVEMENT

The project has been identified as a community priority for over fifteen years in multiple surveys, workshops, meetings, and planning documents (Section 2). The project would link the two largest cities in Humboldt County and provide a major step toward regional trail connectivity in



and around Humboldt Bay. Partner agencies include HCAOG, Caltrans, County of Humboldt, City of Eureka, City of Arcata, and NCRA. Project development will include consultation with stakeholder organizations and the general public.

## 7 ENVIRONMENTAL PERMITTING AND COMPLIANCE

The project will be evaluated for potential impacts on the environment in compliance with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). Feasible opportunities to avoid or reduce impacts will be pursued and mitigation measures will be developed to reduce potentially significant impacts as appropriate. The draft CEQA document will be made available to the public for review and comment.

Based on the information currently available, the expected compliance pathways are a Mitigated Negative Declaration of environmental impact for CEQA and a Categorical Exclusion for NEPA in conformance with the Federal Highways Administration/Caltrans programmatic process. Formal consideration of alternatives is not expected to be required. Anticipated environmental permitting and compliance requirements are shown on Table 1.

**Table 1.** Anticipated Environmental Permitting and Compliance Requirements

Law/Regulation	Permit/Approval	Authority
CEQA	Mitigated Negative Declaration	Lead Agency
NEPA	Categorical Exclusion	Caltrans on behalf of Federal Highways Administration
California Coastal Act	Coastal Development Permit	California Coastal Commission
Clean Water Act Section 404	Nationwide Permit	U.S. Army Corps of Engineers
Endangered Species Act	Biological Opinions (or Letters of Concurrence)	<ul style="list-style-type: none"> <li>• National Marine Fisheries Service</li> <li>• U.S. Fish &amp; Wildlife Service</li> </ul>
Porter-Cologne / Clean Water Act Section 401	401 Certification and/or Waste Discharge Requirements (WDR)	North Coast Regional Water Quality Control Board
Fish and Game Code	Streambed Alteration Agreement	California Department of Fish and Wildlife
National Historic Preservation Act	Letter of concurrence	<ul style="list-style-type: none"> <li>• State Historic Preservation Office</li> <li>• Tribal Historic Preservation Offices</li> </ul>
Humboldt Bay Harbor, Recreation and Conservation District Act	Harbor District Permit	Humboldt Bay Harbor, Recreation and Conservation District

A Preliminary Environmental Study (PES) Form will be developed when the NEPA process begins. The following technical studies and plans are anticipated:

- Natural Environmental Study (NES) for biological resources
- Wetland delineation
- Rare plant survey
- Initial Site Assessment for hazardous materials
- Visual impact assessment
- Floodplain evaluation
- Geotechnical evaluation
- Drainage study

- Historic Property Survey Report
- Archeological Survey Report
- Wetland mitigation and monitoring plan
- Stormwater pollution prevention plan
- Corridor management plan (including safety plan)

## 8 FUNDING/PROGRAMMING AND SCHEDULE

In 2013, HCAOG prepared its 2014 Regional Transportation Improvement Program (RTIP) for incorporation into the 2014 State Transportation Improvement Program (STIP) cycle. The RTIP lists state highway and local road projects proposed for funding from Fiscal Year (FY) 14-15 through 18-19 based on the amount of funding available to the region. In addition, HCAOG requested an advance of \$2 million from the projected county share in FY 19-20 for the environmental permitting and engineering design components of the Bay Trail South project. These advance funds are requested to be programmed in FY 14-15 and FY 15-16. The California Transportation Commission will make a decision on HCAOG’s RTIP at its meeting on March 20, 2014.

Funding for right of way and construction has not been programmed. Potential funding sources for right of way and construction include: the state Active Transportation Program; Coastal Conservancy; the federal TIGER program; future STIP cycles; and private fundraising.

Caltrans is developing mitigation projects for the Route 101 Eureka-Arcata Corridor Improvement Project and aims to create enough mitigation area to achieve some or all of the mitigation requirements for the Humboldt Bay Trail project.

The proposed funding/programming and schedule are summarized on Table 2.

**Table 2.** Proposed Total Project Costs

Component	FY 14-15	FY 15-16	FY 16-17 through FY 18-19
PA&ED	\$1,450,000		
PS&E		\$550,000	
Right of Way			\$250,000
Construction			\$9-12 million
Mitigation			\$1.5-2.0 million
Proposed Funding Source(s):	STIP	STIP	<ul style="list-style-type: none"> <li>• Active Transportation Program</li> <li>• Coastal Conservancy</li> <li>• TIGER</li> <li>• STIP</li> <li>• Local sources (private fundraising)</li> </ul>
Status:	<ul style="list-style-type: none"> <li>• Proposed in HCAOG 2014 RTIP</li> <li>• CTC to decide March 20, 2014</li> </ul>	<ul style="list-style-type: none"> <li>• Proposed in HCAOG 2014 RTIP</li> <li>• CTC to decide March 20, 2014</li> </ul>	Future requests

## 9 CONTACTS

Points of contact from the partnering agencies are shown on Table 3:

**Table 3.** Agency Points of Contact

<b>Humboldt County</b>	<b>Humboldt County Association of Governments</b>
Hank Seemann, Deputy Director Public Works Department 1106 Second Street Eureka, CA 95501 <a href="mailto:hseemann@co.humboldt.ca.us">hseemann@co.humboldt.ca.us</a> 707-445-7741	Marcella Clem, Director 611 I Street Eureka, CA 95501 <a href="mailto:Marcella.clem@hcaog.net">Marcella.clem@hcaog.net</a> 707-444-8208
<b>City of Eureka</b>	<b>City of Arcata</b>
Miles Slattery, Director Parks and Recreation Department 1011 Waterfront Drive Eureka CA 95501 <a href="mailto:msslattery@ci.eureka.ca.gov">msslattery@ci.eureka.ca.gov</a> 707-441-4184	Karen Diemer, Deputy Director Environmental Services Department 736 F Street Arcata, CA 95521 <a href="mailto:kdiemer@cityofarcata.org">kdiemer@cityofarcata.org</a> 707-822-8184
<b>Caltrans</b>	<b>North Coast Railroad Authority</b>
Richard Mullen, Project Manager Brad Mettam, Deputy District Director 1656 Union Street Eureka, CA 95501 <a href="mailto:Richard.mullen@dot.ca.gov">Richard.mullen@dot.ca.gov</a> <a href="mailto:Brad.mettam@dot.ca.gov">Brad.mettam@dot.ca.gov</a> 707-445-6600	Mitch Stogner, Executive Director 419 Talmage Road, Suite M Ukiah, CA 95482 <a href="mailto:ncra.mstogner@sbcglobal.net">ncra.mstogner@sbcglobal.net</a>

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Alta Planning + Design; Planwest Partners, Inc.; SHN Consulting Engineers & Geologists, Inc.; RCAA; and Origer Associates, June 2007. Humboldt Bay Trail Feasibility Study: Arcata to Eureka.

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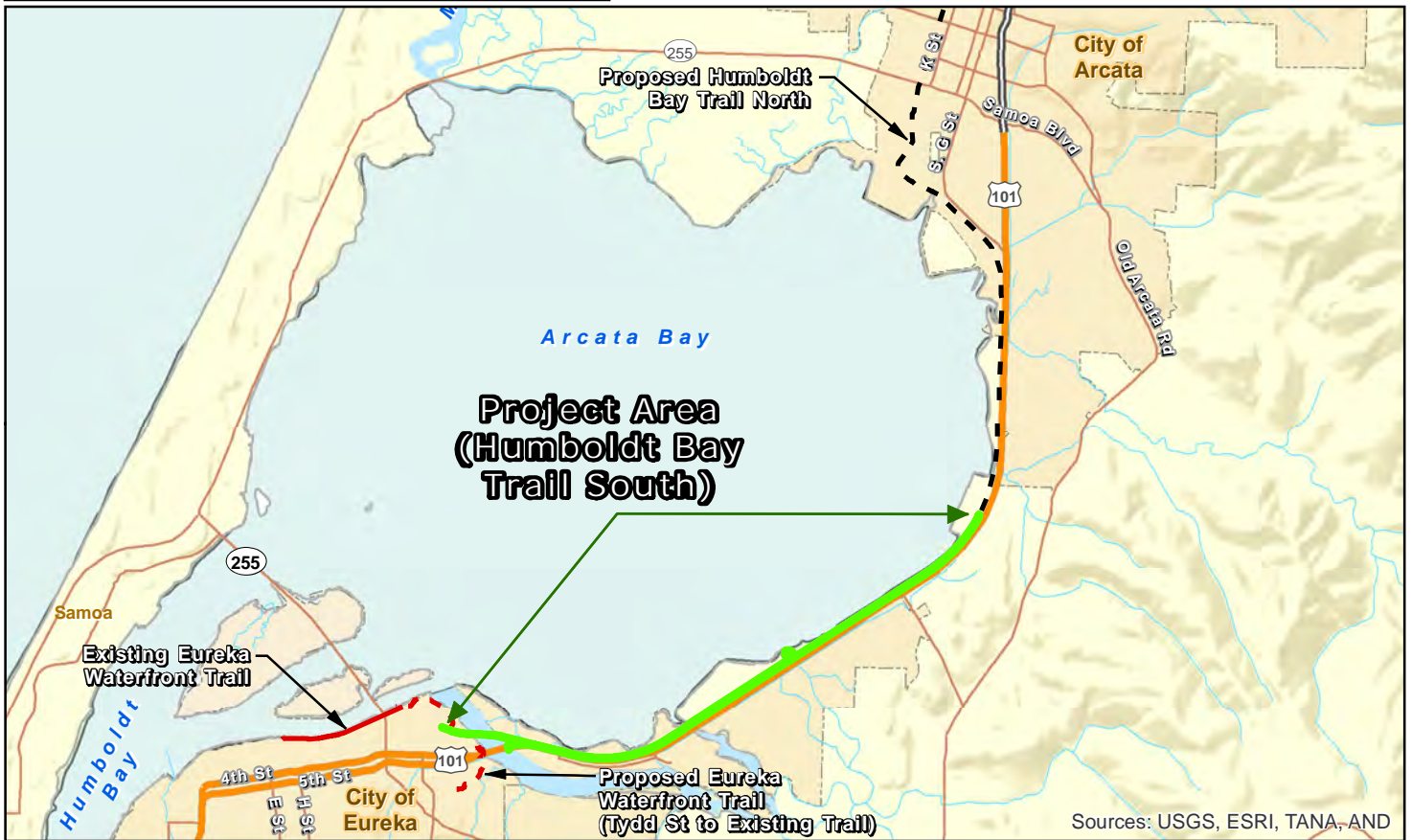
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## Figures

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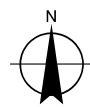
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|------------|--------------|-----------------|----------------------------------|--|
| Freeway    | Streams      | City Limits     | <b>Trail Connections</b>         | Proposed Eureka Waterfront Trail (Tydd St to Adorni Trail) |
| Highway    | Project Area | Humboldt County | Existing Eureka Waterfront Trail | Proposed Humboldt Bay Trail North                          |
| Major Road |              | Counties        |                                  |  |

1: 72,000 @ 8.5' X 11' (ANSI A)

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Feet

Map Projection: Lambert Conformal Conic  
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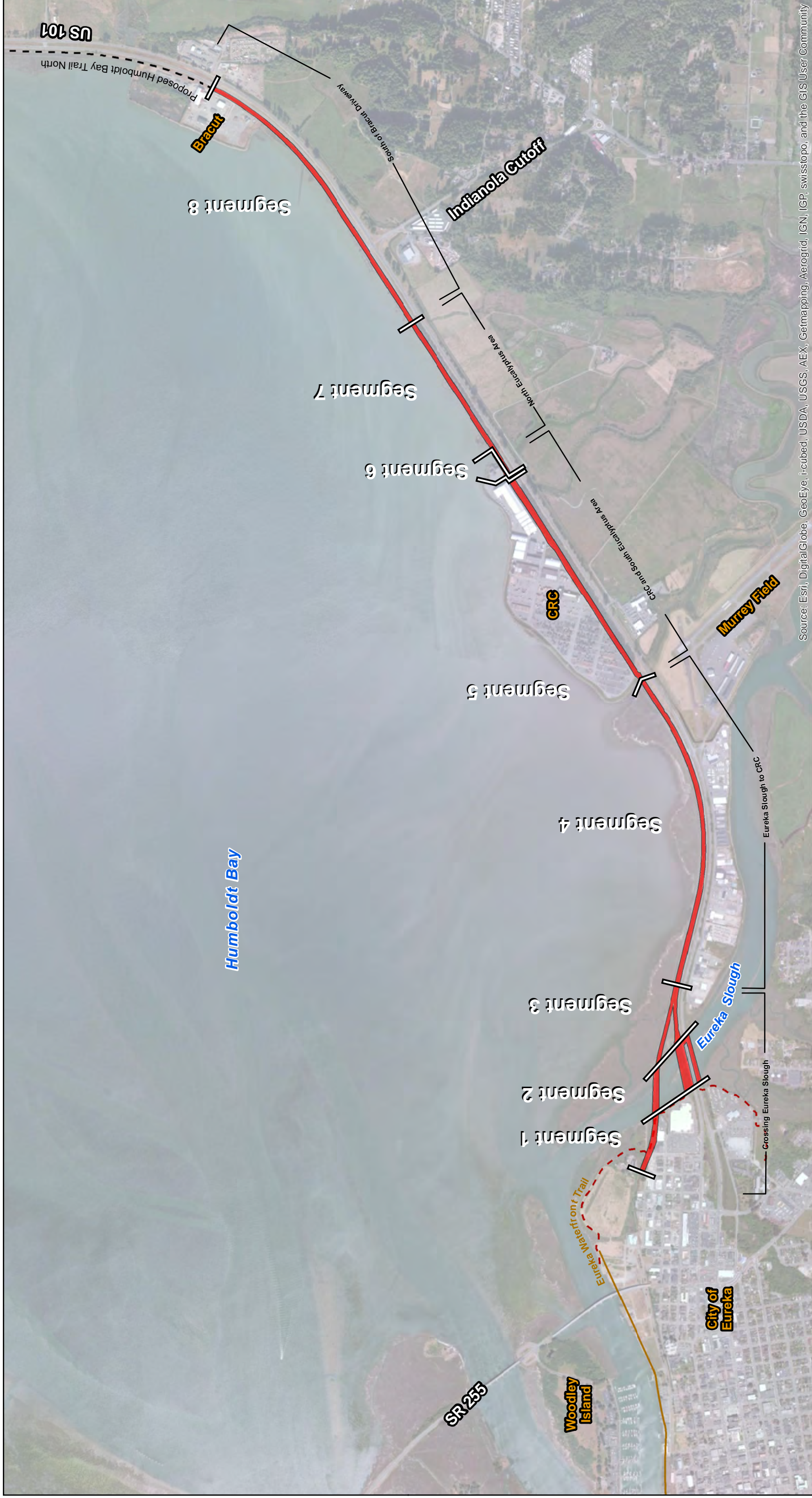
Humboldt County Public Works Department  
Humboldt Bay Trail South (Eureka to Bracut)

Job Number | 8410593  
Revision | A  
Date | 17 Mar 2014

Project Study Report  
Vicinity and Location

Figure 1

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© 2013. Whilst every care has been taken to prepare this map, GHD, ESRI, and County of Del Norte make no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.  
Data source: ESRI: Street Map USA. Created by: gldavidson



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Job Number 8410593  
 Revision C  
 Date 17 Mar 2014

Humboldt County Public Works Department  
 Humboldt Bay Trail South (Eureka to Bracut)

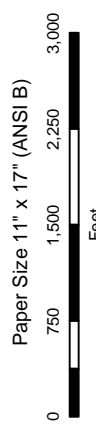
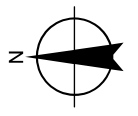


**LOCATION INFO**

- Study Area
- Segment Break
- Project Reach

**TRAIL CONNECTIONS**

- Existing Eureka Waterfront Trail
- Proposed Eureka Waterfront Trail (Tydd St to Adorni Trail)
- Proposed Humboldt Bay Trail North



Paper Size 11" x 17" (ANSI B)  
 Map Projection: Lambert Conformal Conic  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 StatePlane California 1 FIPS 0401 Feet

**Project Study Report  
 Overview of Project Reaches and Segments**

**Figure 2**