



California State Coastal Conservancy – Lead Agency  
Notice of Preparation of Draft Environmental Impact Report for  
**Eel River Estuary Preserve Ecosystem Enhancement Project**

December 2014

THIS PAGE INTENTIONALLY LEFT BLANK

**Notice of Preparation of Draft Environmental Impact Report for the  
Eel River Estuary Preserve Ecosystem  
Enhancement Project**



California State Coastal Conservancy, Lead Agency  
1330 Broadway, 13<sup>th</sup> Floor  
Oakland, CA 94612-2530

Attention: Michael Bowen  
Project Manager  
(510) 286-1015

California Trout, Inc  
PO Box 715  
Arcata, CA 95518

Attention: Darren Mierau  
North Coast Regional Manager  
(707) 825-0420

Prepared by:

GHD Inc.  
718 Third Street  
Eureka, CA 95501

Contact: Misha Schwarz  
Project Manager  
(707) 443-8326

December 2014

Project Ref#: 1000298-8410882

THIS PAGE INTENTIONALLY LEFT BLANK

# Table of contents

1.	Introduction.....	1
1.1	CEQA Requirements .....	1
1.2	General Information .....	1
2.	Project Location and Setting .....	1
3.	Project Description .....	2
4.	Probable Environmental Effects.....	7

# Appendices

Appendix A - Figures

THIS PAGE INTENTIONALLY LEFT BLANK

# 1. Introduction

## 1.1 CEQA Requirements

This Project is subject to the requirements of the California Environmental Quality Act (CEQA). The lead agency is the California State Coastal Conservancy (Coastal Conservancy), the decision-making body being the Coastal Conservancy. The Coastal Conservancy is responsible for assuring the completion of the appropriate evaluation and processes required by CEQA. The Coastal Conservancy has the sole responsibility to make the appropriate findings and determinations with respect to the CEQA process and disposition of the Project. The purpose of this Notice of Preparation (NOP) is to solicit participation in determining the scope of the Environmental Impact Report (EIR) which would be prepared for the Eel River Estuary Preserve Ecosystem Enhancement Project (EREP or Project). The EIR being prepared is intended to satisfy the requirements of CEQA (Public Resources Code, Div 13, Sec 21000-21177), and the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Sec 15000-15387).

## 1.2 General Information

**Protect Title:** Eel River Estuary Preserve Ecosystem Enhancement Project

**Lead Agency:** California State Coastal Conservancy  
1330 Broadway, 13th Floor  
Oakland, CA 94612-2530  
Attention: Michael Bowen, Project Manager

**Availability of Project Documents/Files:** Project documents/files are available for review at the Coastal Conservancy, located at 1330 Broadway, 13th Floor, Oakland, California.

**Written Comments:** Written comments on the scope of the EIR can be sent to Michael Bowen, Project Manager, California State Coastal Conservancy, located at 1330 Broadway, 13th Floor, Oakland, California, 94612-2530. They can also be sent via fax to 510-286-0470, with "Eel River Estuary Preserve Ecosystem Enhancement Project, Comments on NOP" in the title.

**Comment Period:** CEQA Guidelines Section 15082 (b) requires a 30-day response period for input about the scope and content of the EIR. The comment period for the NOP begins on December 17, 2014, and ends on January 16, 2015. The deadline for submitting written comments is January 16, 2015 at 5:00 p.m.

**Public Scoping Meeting:** A public scoping meeting to accept comments on the environmental issues germane to the Project will be held on January 12, 2015 at 3:00 PM at the River Lodge Conference Center, 1800 Riverwalk Drive, in Fortuna, California.

# 2. Project Location and Setting

The Eel River Estuary Preserve (EREP) is a 1,087-acre property located approximately four miles west of the City of Ferndale and one mile north of Centerville Beach, in Humboldt County, California (Figure 1). The west side of the property encompasses the near shore dunes of Centerville Beach and extends to the Pacific Ocean. East of the dunes, the property supports a system of sloughs and pastures that comprise a portion of the Salt River watershed, itself a tributary to the Eel River estuary. The north property line borders the Eel River. Much of the southern half of the property

east of the former Centerville Slough has been converted to pasture for cattle grazing. Some of this land represents diked former tidelands that are separated from the estuarine wetlands by a series of dikes and the Cutoff Slough tidegates. A partially developed upland area occupies the southeastern corner of the property, where vehicular access is gained from Russ Lane. Few structures occur on site, but there are two barns within the upland area near Russ Lane (referred to as the Potato Barn and Quonset Hut), a third barn (North Barn) located between Cutoff Slough and the near shore dunes, approximately midway between the north and south property lines and a fourth barn (South Barn) located on the southwest corner of the Project site. The North and South barns are connected by unimproved roads to the Potato Barn at the EREP entrance. Watering troughs and extensive fencing occur throughout the central and southern portion of the EREP. Figure 2 shows existing conditions within the Project area.

The Wildlands Conservancy (TWC) owns the EREP, which includes agricultural (grazing) land, tidal salt marsh, brackish marsh, riparian scrub, sloughs/open water channels, freshwater ponds and ditches, and nearshore dune ridges and swales. The climate is Mediterranean with precipitation most abundant in the winter months, and the average annual rainfall is approximately 48.5 inches. Approximately two thirds of the year, the site is influenced by coastal fog. Prominent water features include Russ Creek, remnant Centerville Slough, Cutoff Slough, and the Western Drainage Ditch (which in turn conveys the flow of Shaw Creek and Creamery Ditch), as well as smaller (seasonal) slough channels and drainage ditches. The northern end of the site borders the mouth of the Eel River.

General Plan land use for the EREP is Natural Resources (NR/R) and Agriculture Exclusive (AE) which includes prime agricultural lands. Primary uses are limited to the production of food, fiber, plants, timber, timber agriculturally related uses, and agriculture related recreational uses. Very low intensity residential uses may be allowed if they are incidental to the property and if they support agricultural activities, or are necessary for the enhancement and protection of the natural resources of the area. Minimum parcel size is 60 acres except divisions to 20 acres may be permitted where the parcel is subject to an agricultural preserve contract or agreement. Zoning for the EREP is NR/R and AE-60/W,F,R,T, which is consistent with the land use designation. Combining zones include Coastal Wetland Areas (W), Flood Hazard Areas (F), Streams and Riparian Corridors Protection (R), and Transitional Agricultural Lands (T).

The EREP is enrolled in a Williamson Act contract entitled “Wildlands Conservancy Agricultural Preserve No. 09-05”. 648.21 acres are identified in that contract as being “Areas In Grazing.”

## 3. Project Description

### 3.1.1 Project Goals and Objectives

The goal of the Project is to restore ecosystem functions within the EREP, to enhance habitats for native fisheries and aquatic species, support waterfowl and wildlife species, and to enhance agricultural productivity by decreasing and more effectively managing onsite flooding. In addition to articulating habitat enhancement actions, the Project objectives also specify how the EREP can design and plan for its land uses, agricultural productivity, and vegetative communities in anticipation of future climate scenarios and sea level rise.

Specific objectives of the Project include:

- Improve access to restored aquatic habitats for salmonids and other aquatic dependent species by increasing migratory access between estuarine and inland waters and by restoring overwintering and rearing habitat for juvenile salmonids
- Improve drainage efficiency and manage sediment loads more effectively, while enhancing tidal processes by reestablishing Centerville Slough and Russ Creek connectivity
- Enhance agricultural productivity by increasing resiliency to sea level rise, enhancing drainage and establishing an avulsion management area for Russ Creek as it enters the southern portion of the property
- Enhance tidal processes by restoring tidal prism to the Inner Marsh and by maintaining and improving tidegate infrastructure to provide adaptability for sea level rise and varied land management
- Enhance freshwater pond habitat
- Facilitate access for agricultural land management and nature study opportunities consistent with existing limitations
- Suppress invasive species
- Establish long-term Adaptive Management Program to facilitate future permitting of land management activities.

### 3.1.2 Overall Concept

The Project would restore the EREP from a landscape of mostly diked pasture land to a mosaic of pasture and natural habitats, including estuarine and tidal slough channels, a freshwater stream and riparian corridor along Russ Creek, freshwater waterfowl ponds and agricultural pastures. Critical to achieving this is an enhancement in tidal flushing to reactivate wetland functions within the Inner Marsh. New tidegates to be designed and installed would be designed to expand the muted tidal prism into the Inner Marsh occupying historic tidal slough channels that have persisted despite former reclamation efforts, floods and significant tectonic activity. In order to restore aquatic organism passage from the Eel River to Centerville Slough and Russ Creek, while improving drainage efficiency and reliability, the existing Cutoff Slough tidegate structure would be retrofitted. Realignment and geomorphic restoration of Centerville Slough and Russ Creek are expected to support overwintering juvenile salmonids, waterfowl habitat, drainage from the landscape, maintain an existing drainage easement and increase resiliency to adjoining lands. A riparian corridor may be established along the southern reach of Russ Creek where soil salinity does not limit growth of desired species. Designation of a sediment management area is acknowledgement that in the absence of full historic tidal and floodplain functions some processes of the Project site would require ongoing management.. Similarly, management of the flattened (breached) dune would encompass actions to protect an existing drainage ditch and agricultural resources while furthering science on dune restoration and climate change vulnerability. The longevity of this Project depends upon the successful restoration of natural ecological processes and the frequency and nature of maintenance activities, but would be heavily influenced by uncontrollable natural events within this highly altered and geologically unstable watershed. As a result, this Project would include an adaptive management program to provide a feedback mechanism between monitoring and management actions. Figure 3 illustrates Project activities.

### 3.1.3 Proposed Project Activities

#### ***Expand Tidal Prism within Inner Marsh***

This 150-acre area is surrounded by dikes and functions as a closed cell. Referred to as the Inner Marsh, the controls on its function create an ideal setting for expanding wetland habitat without threatening adjacent land uses. To achieve this, tidal access must be modified to increase tidal action in this protected environment.

#### **Install New Culverts and Tidegates**

To introduce tidal flows that are of a higher elevation relative to Cutoff Slough, new tidegates would be installed at two locations through the existing Inner Marsh dike. The northern location would include a muted tidegate regulator that would allow muted tidal prism to be introduced into the Inner Marsh in addition to culverts with one-way flap gates that allow high flows to pass through the Inner Marsh. The south location would include culverts with a one-way flap gate that allows high overland flows from Centerville Slough and Russ Creek to enter the Inner Marsh and the north location would allow flows to exit the Inner Marsh into Cutoff slough as well as a muted tide gate regulator that provides tidal exchange into the Inner Marsh. The EIR would analyze a broader range of tidal elevations.

#### ***Retrofit Existing Cutoff Slough Tidegates***

Aquatic organism passage from the Eel River via Centerville Slough is blocked by six existing top-hinged tidegates mounted to an existing large concrete structure that prevents all but minor tidal leakage from entering the slough channels to the south. During summer months, the average water surface elevation behind the tidegates is approximately 2.5 feet (NAVD-88). During winter months periods of prolonged inundation and flooding occur upstream of the tidegate as the backwater influence from the Eel River estuary prevents the gates from opening for extended periods of time. The salt tolerant vegetative communities that have established along the banks of the slough upstream of the tidegate structure corroborate the brackish conditions there.. Overland drainage from adjoining properties is collected in Centerville and Cutoff Slough and ultimately drains through the existing Cutoff Slough tidegates.

Upgraded tidegates retrofitted into the existing structure would allow for improved, but managed, tidal function and drainage efficiency throughout the Project site. Use of tidegates to mute tides also protects adjacent properties while improving aquatic habitat passage.

#### ***Enhance Centerville Slough and Reestablish Russ Creek Connectivity***

Historically, Centerville Slough extended south from Cutoff Slough, parallel to the dune network to the community of Centerville at the base of the Wildcat Mountains. Reclamation and the associated reduction in the tidal prism, coupled with the directed Russ Creek avulsions, resulted in a significant reduction in aquatic capacity. The Western Drainage Ditch is what remains as a remnant drainage feature. Russ Creek which once flowed into Cutoff Slough now terminates with avulsion and overland sheet flows over existing pastures.

#### **Reconnection of Russ Creek to Centerville Slough**

A graded channel would reconnect Centerville Slough with Russ Creek, thereby improving site drainage, creating in-channel flood storage, reestablishing a long tidal to

freshwater ecotone and providing a wetland prism that includes freshwater wetland and/or riparian habitat, as well as habitat connectivity for anadromous fish.

### **Develop New Sediment Management Area on Russ Creek**

Leveraging natural flood processes, a sediment management area would be developed as a high flow bypass to the low-flow Russ Creek side-channel. This bypass would function as an overbank attenuation area to slow flows and allow sediment to deposit. Sediment deposits would be seasonally relocated to approved upland and agricultural locations as needed. The sediment management area itself would then be seeded and irrigated as needed to enhance agricultural productivity in that area.

### **Enhanced Centerville Slough**

Freshwater runoff from the Wildcat Hills is collected and conveyed through two channels on the EREP – Russ Creek running south to north up the center of the EREP, and the Western Drainage Ditch running north along the backside of the dunes, which collects dune over wash, Creamery Ditch and Shaw Creek flows. The Western Drainage Ditch lies in the path of disturbed dunes and is vulnerable to continued dune over wash and sedimentation.

Approximately 3,000 feet of Western Drainage Ditch, from the southern EREP boundary northward, would be realigned into the former Centerville Slough. It would then be reconnected to the existing downstream Western Drainage Ditch, and this portion of Western Drainage Ditch would be enhanced and widened for ecological benefit and drainage efficiency. The reestablishment of Centerville Slough would reconnect Shaw Creek and Creamery Ditch to Cutoff Slough, providing conveyance for over wash on properties to the south. In general, the Centerville Slough channel would be sized to enable the slough to serve as flood storage, conveyance, and brackish aquatic habitat.

### ***Enhance Existing and Create New Off-Channel Habitat***

The lack of connectivity across the EREP has led to infilling and reduced availability of brackish and freshwater ponds for waterfowl and overwintering fish habitat. Existing depressions in the landscape currently serve as freshwater ponds managed for waterfowl which would be enhanced to minimize maintenance and continue a long tradition of waterfowl hunting on the site. Seasonal rainfall would be the primary means of filling the ponds, while existing wellheads would provide backup supply. New brackish water ponds for overwintering juvenile salmonids would also be created by deepening other existing depressions in the floodplain of the Centerville Slough/Russ Creek.

### ***Protect and Enhance Drainage, Land Uses, and Habitats***

Threats to the richness of existing habitat and land uses include disturbances of dunes; saltwater intrusion; sedimentation of watercourses; subsidence and natural conversion of agricultural pasture; and invasive species. Neighboring properties require drainage through the EREP, and can be negatively impacted by management activities on EREP. Actions to balance these needs while retaining habitat include active implementation projects, passive restoration, and ongoing management.

### **Improve Dune Function**

While dunes are generally self-maintaining, their form and dynamics are influenced by vegetation amongst other factors. Non-native invasive vegetation such as *Ammophila*

*arenaria* (European beachgrass) alters dune mobility and shape. Disturbance of dunes from aggressive ground disturbance, such as use of ATVs or storm surges, can also trigger mass movement and flattening of the dunes. Over time, the processes of vegetative colonization and wind would likely result in rebuilt dunes. The timescale of this recovery is not known.

Significant disturbance has occurred over approximately 11 acres of dunes on the southwest boundary of the EREP and over a broader area to the south of EREP. The movement of this sand unconfined in any remaining dune network threatens the Western Drainage Ditch with infilling, a trend that threatens the safety and land use of EREP and properties to the south, all of whom are parties to a formal drainage easement over the EREP.

Dune management remains experimental. Conflicting land use needs often influence restoration/stabilization debates. This project seeks to create passive and active techniques to identify best practices for maintaining a balance in ecological function and limiting land use impacts in dune management. The integrity of the dunefield would be restored through final actions taken in the Project. Space would also be provided in the project design to allow for dune migration inland as part of its recovery process.

### **Improve Quality of Agricultural Pasture**

Sea level rise alters groundwater composition and vegetation communities. As soils become increasingly saline and brackish, salt marsh vegetation would dominate. Periodic dune breaches exacerbate this effect. This is already being observed at the EREP and land to the south in the historic alignment of Centerville Slough. While some areas of the EREP are targeted for wetland increases, other areas would be preserved for agricultural pasture.

- **Raise soil elevation.** Sediment removed from Russ Creek would be periodically spread over agricultural pasture to improve soil quality, keep grasses above the influence of saltwater within the water table, and thereby support freshwater grasses.
- **Livestock management.** New fencing would allow vegetation to recover in designated areas and prevent livestock from impairing wetland resources.
- **Designated access routes.** Project implementation and future management will require durable yet limited access routes that minimize impacts to the project area. Some existing access routes would be improved and maintained, while others may be decommissioned. Routes would be designed to accommodate a range of vehicle types and weight classes.

### **Invasive Species Removal**

This plan would provide the basis for ongoing invasive species management and eradication using passive and active restoration techniques, and participating when appropriate with local and regional programs.

### **Public Education and Access**

Public access to the site is currently limited. The EREP welcomes scheduled and docent led small group site visits and uses the site to educate elementary school children about wetland and estuary

systems and agriculture as practiced in the coastal zone. Interpretation would be enhanced with development of:

#### **North Barn Parking Area and Interpretive Signage**

Minor improvements to the North Barn Parking Area will facilitate TWC's outreach and education efforts while minimizing impacts to the Project area. Signs about the cultural, agricultural and natural heritage of the area would interpret the landscape for viewers.

#### **Dune Walk and Overlook**

A short boardwalk and trail with an overlook would take visitors into an intact dunefield for birding and natural observation.

#### **Sediment Re-use**

Based on the final outcome of sediment sampling and salinity measurements (anticipated to be completed prior to completion of the Draft EIR), a decision would be made on the potential for sediment reuse for beneficial uses during construction such as:

- Dune management and formation of the sand dune core,
- Application to agricultural upland areas,
- Rehabilitation of the existing dike(s), and
- Off haul to other beneficial reuse areas.

## 4. Probable Environmental Effects

The following discussion evaluates potential adverse effects by resource category based on preliminary review of the proposed Project. The environmental categories presented below are from Appendix G of the CEQA Guidelines. Mitigation measures would be developed in the EIR and presented along with additional and specific site information and analysis. There is the potential for significant impacts to occur as a result of the proposed Project, even with the use of mitigation measures; therefore, an EIR would be prepared to evaluate potential environmental effects as a result of the proposed Project, and would also evaluate alternatives. The EIR would recommend mitigation measures, as feasible, to lessen the significance of any impacts identified as potentially significant. Per CEQA Guidelines Section 15082 (a)(1)(c), the probable environmental effects of the Project are summarized below.

### 4.1.1 Aesthetics

Would the project:
a) Have a substantial adverse effect on a scenic vista?
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
c) Substantially degrade the existing visual character or quality of the site and its surroundings?
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

The EREP is a highly scenic area and includes tidal wetlands, freshwater marsh, sand dunes, grass lands, agricultural pastures, and beach frontage. Project activities are not anticipated to substantially degrade scenic resources in the Project area, rather they are intended to enhance habitats and provide for community education and enjoyment. However, the EIR would analyze the potential impacts to aesthetic resources, and if appropriate, include feasible mitigation measures to reduce any potentially significant impacts to a less than significant level.

#### 4.1.2 Agricultural and Forestry Resources

Would the project:
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?
d) Result in the loss of forest land or conversion of forest land to non-forest use?
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

The proposed project would strike a balance between restoration of critical ecosystem functions and preservation of agricultural resources. An Agricultural Baseline Assessment is being prepared by the Coastal Conservancy and would be utilized to determine the impacts/benefits to agricultural land resources on the EREP and would be used as supporting information for the EIR. A portion of the EREP's agricultural land is under Williamson Act Contract and is intended to remain under contract post project. Potential impacts could be the loss of Important Farmland or the conversion of agricultural land to another use. The EIR would analyze the potential effects to agricultural resources from implementation of the Project and include feasible mitigation measures, if needed, to reduce any potentially significant impacts to a less than significant level. The Project site does not include any forest land or land zoned timberland.

#### 4.1.3 Air Quality

Would the project:
a) Conflict with or obstruct implementation of the applicable air quality plan?
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?
c) Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?
d) Expose sensitive receptors to substantial pollutant concentrations?
e) Create objectionable odors affecting a substantial number of people?

The Project area is located within the North Coast Air Basin (NCAB), which is under the jurisdiction of the North Coast Unified Air Quality Management District (NCUAQMD). The NCAB is currently in attainment (or is unclassified) for all state and federal ambient air quality standards, with the exception of the state standard for particulate matter less than ten micrometers in diameter (PM<sub>10</sub>).

The EIR would discuss the temporary impacts from construction activities and identify potential mitigation measures if needed. The EIR would discuss the Project's conformity with applicable air quality plans and exposure of sensitive receptors to criteria air pollutants and odors, and mitigation measures would be included where applicable.

#### 4.1.4 Biological Resources

Would the project:

- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?
- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?
- c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
- d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?
- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

A wide variety of wildlife, including special-status species, inhabit the Project area and utilize the site and may be affected by implementation of the Project. The Project area also includes wetlands, riparian areas, and uplands that support a diverse array of aquatic and terrestrial biological resources. The EIR would utilize a number of special studies in the preparation of this section such as habitat mapping, rare plant and animal studies, wetland delineations, vegetation mapping, Biological Evaluations, and other existing reports/studies. The EIR would analyze potential impacts to special status-species, wetlands, riparian habitat, and include feasible mitigation measures to reduce any potentially significant impacts to a less than significant level. The EIR would also discuss the Project's conformity with local policies or plans protecting biological resources.

#### 4.1.5 Cultural Resources

Would the project:

- a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?
- b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?
- c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
- d) Disturb any human remains, including those interred outside of formal cemeteries?

A Cultural Resources Investigation has been prepared for the Project by Roscoe and Associates to inventory cultural resources and assess potential impacts on these resources from Project activities. Potential impacts could include the destruction of unknown cultural resources. The EIR would include the results from this investigation and include mitigation measures for the inadvertent discovery of cultural resources and inadvertent discovery of human remains.

#### 4.1.6 Geology & Soils

Would the project:

- a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.
  - ii) Strong seismic ground shaking?
  - iii) Seismic related ground failure, including liquefaction?
  - iv) Landslides?
- b) Result in substantial soil erosion or the loss of topsoil?
- c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on, or off, site landslide, lateral spreading, subsidence, liquefaction or collapse?
- d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?
- e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

A geotechnical investigation, prepared by LACO, will be utilized for the preparation of this section. Geologic and soils issues include potential erosion and sedimentation during and after construction due to proposed grading, dredging, channel reconfiguration, levee reconfiguration, and armoring. The EIR would describe the site's existing geologic conditions and soils based on existing information and technical reports prepared for the project. Potential impacts could include soil erosion or the loss of topsoil. The EIR would include an analysis of the geology of the site as it relates to slope stability, earthquake hazards, and landslides, and any other potential geologic hazards, and recommend appropriate mitigation measures if applicable.

#### 4.1.7 Greenhouse Gas Emissions

Would the project:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Construction of the Project would cause release of GHG emissions as a result of combustion of fossil fuels used in construction equipment and vehicles from workers commuting to and from the site. The Project would require the use of several pieces of heavy earthmoving equipment, and construction commute and utility vehicles. The NCUAQMD has not adopted a threshold for construction-related GHG emissions against which to evaluate significance and has not established construction-generated criteria air pollutant screening levels above which quantitative air quality emissions would be required; however, this potential impact would be further discussed in the EIR and appropriate mitigation measures would be included if applicable. The EIR would also discuss climate change projections and the potential effects of climate change on the EREP.

#### 4.1.8 Hazards & Hazardous Materials

Would the project:

- a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
- d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?
- f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?
- g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Phase I and II Environmental Site Assessments were completed for the Project. The information from these assessments would be used in the analysis of this resource category and appropriate mitigation measures would be incorporated if applicable. Potential impacts could include the discovery of unknown hazardous materials during construction or the release of hazardous materials associated with transport, use and disposal. The EIR would discuss the existing conditions with regard to potential hazards in the Project area, identify appropriate spill prevention measures, identify potential impacts to project workers and recreation users due to potential soil contamination and other potential hazards at the site, and describe necessary mitigation measures.

#### 4.1.9 Hydrology & Water Quality

Would the project:

- a) Violate any water quality standards or waste discharge requirements?
- b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?
- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off- site?
- d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off- site?
- e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?
- f) Otherwise substantially degrade water quality?
- g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
- h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

j) Inundation by seiche, tsunami, or mudflow?

The Project could affect water quality through release of contaminants and sediment from construction activities. The Project could alter hydrodynamic processes, which control local salinity levels. The project could increase turbidity during and after construction, adversely affecting water quality. In addition, flows in Centerville Slough and Cutoff Slough are likely to change with the increased tidal prism following restoration; these increased flows could affect water quality, erosion along these waterways, and fisheries use of these waterways. The EIR will discuss these issues and potential effects and incorporate mitigation measure if applicable to reduce potentially significant impacts to a less than significant level.

#### 4.1.10 Land Use & Planning

Would the project:

a) Physically divide an established community?

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

The Project would require a Conditional Use Permit from Humboldt County and a Coastal Development Permit from the Coastal Commission per the Coastal Act. The EIR will describe existing land uses in the Project area, assess Project impacts and identify any potential land use conflicts. The EIR will review the County's General Plan and the Eel River Area Plan and summarize applicable goals and policies and assess the Project's consistency with applicable General Plan and Eel River Area Plan goals and policies, land use designations, and the Zoning Ordinance.

#### 4.1.11 Mineral Resources

Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

There are no mining operations in the Project area. The Project would not require the use of a substantial amount of any mineral resource, and would not result in the loss of availability of known mineral resources of value to the state, region or locally. The EIR would analyze potential effects to mineral resources and incorporate mitigation measures if applicable.

#### 4.1.12 Noise

Would the project:

- a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?
- c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
- d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?
- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?
- f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Noise levels would increase temporarily during construction activities at the EREP. The EIR would describe the existing noise levels in the Project area and identify any noise sensitive receptors. The EIR would evaluate the potential for temporary noise impacts from construction, including any construction noise impacts to noise-sensitive biotic species. Future noise levels would be compared to existing noise levels to determine if the Project would cause a significant increase in ambient noise levels and mitigation measures would be included if applicable.

#### 4.1.13 Population & Housing

Would the project:

- a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?
- b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?
- c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

The proposed Project would not add either new homes or businesses to the EREP, no housing units are on the site and no new housing is proposed. The Project would not displace any housing or people, on or adjacent to the site. The impacts are anticipated to be less than significant; however, the EIR will discuss these issues in more detail.

#### 4.1.14 Public Services

Would the project:

- a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire Protection?

Police protection?

Schools?

Parks?

Other public facilities?

Except in the event of an emergency, the Project would place no material demand on fire and police services. The Project would not place additional demands on schools, parks, or other services. The Project does not include the construction of residential or commercial structures, and the Project is not anticipated to result in substantial population growth in the area; and therefore would not substantially increase the need or use of public services and amenities.

#### 4.1.15 Recreation

Would the project:

- a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
- b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

The Project is not anticipated to place additional demands on recreational facilities and the Project does not include or require recreational facility construction or expansion. The Project does include the construction of a trail and short boardwalk with an overlook which would take visitors into an intact dunefield for birding and natural community observation (Figure 3). The EIR would analyze potential impacts to recreational resources and identify feasible mitigation measures if significant impacts are identified.

#### 4.1.16 Transportation & Traffic

Would the project:

- a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?
- b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?
- c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?
- d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- e) Result in inadequate emergency access?
- f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

The Project would result in increased traffic during construction and minimal traffic post construction, potentially affecting levels of service on local streets. The EIR would discuss existing traffic volumes and level of service in the Project area and recommend mitigation measures (such as the implementation of a traffic control plan) that would ensure any potential significant environmental impacts on transportation would remain less than significant.

#### 4.1.17 Utilities & Service Systems

Would the project:

- a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

- b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?
- e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
- f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?
- g) Comply with federal, state, and local statutes and regulations related to solid waste?

The Project does not include the construction of facilities (residential, commercial, or industrial) that would place additional demands on public water systems, wastewater systems, or landfills. The EIR would include information obtained from the County of Humboldt and applicable utility providers regarding any potential constraints, and if any significant impacts are identified then mitigation measures would be incorporated to reduce any potentially significant impacts to less than significant.

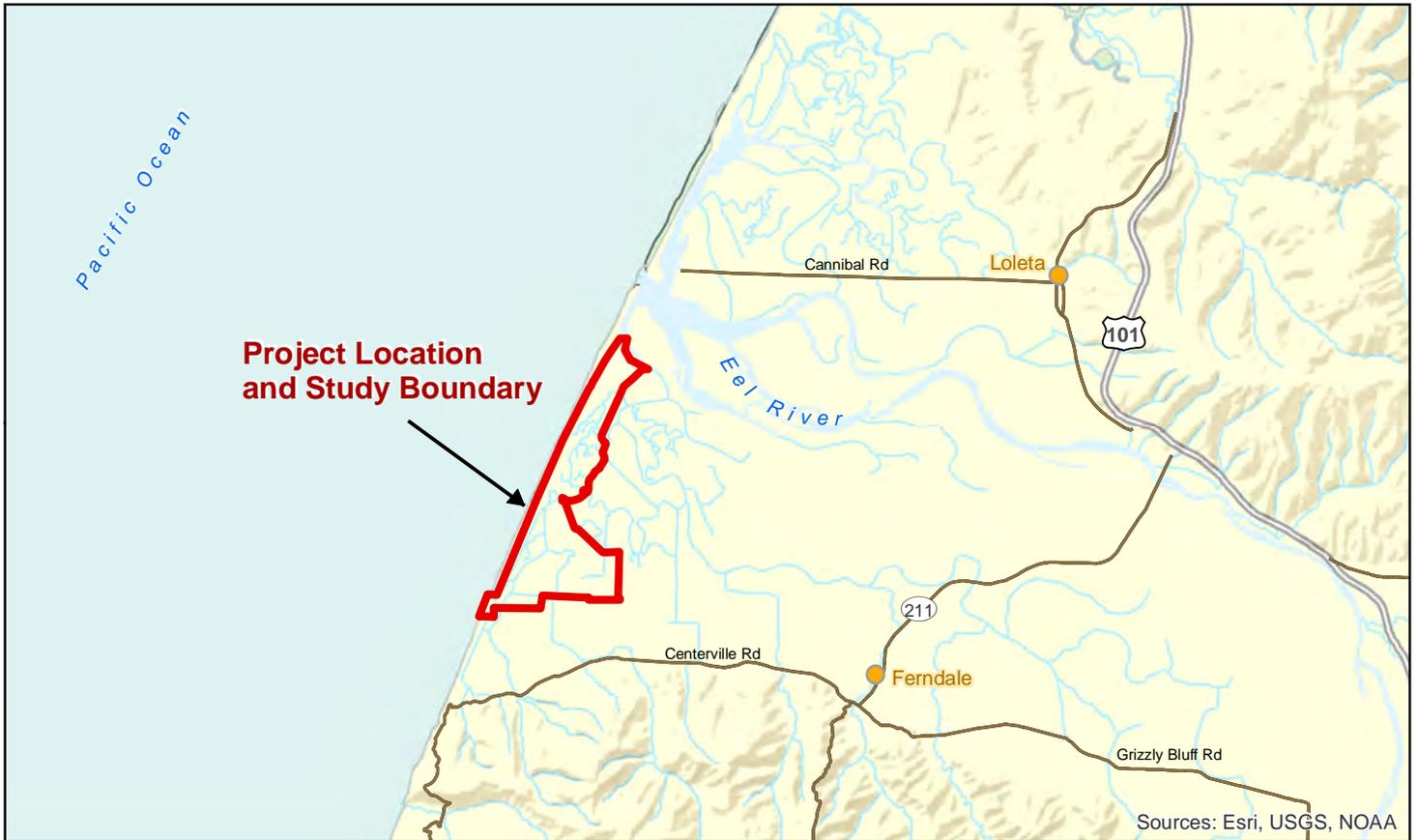
THIS PAGE INTENTIONALLY LEFT BLANK

## Appendices

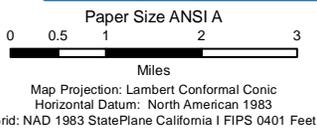
THIS PAGE INTENTIONALLY LEFT BLANK

## Appendix A - Figures

THIS PAGE INTENTIONALLY LEFT BLANK



-  Eel River Estuary Preserve
-  Humboldt County
-  Counties
-  Freeway
-  Highway
-  Roadway
-  Streams

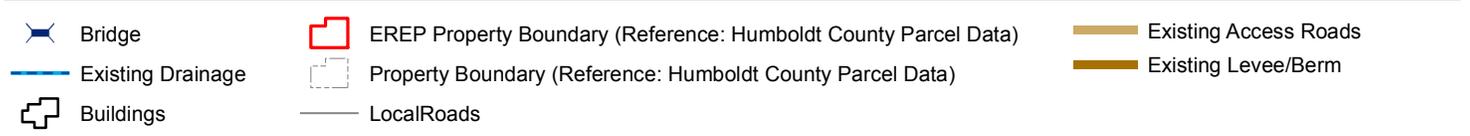
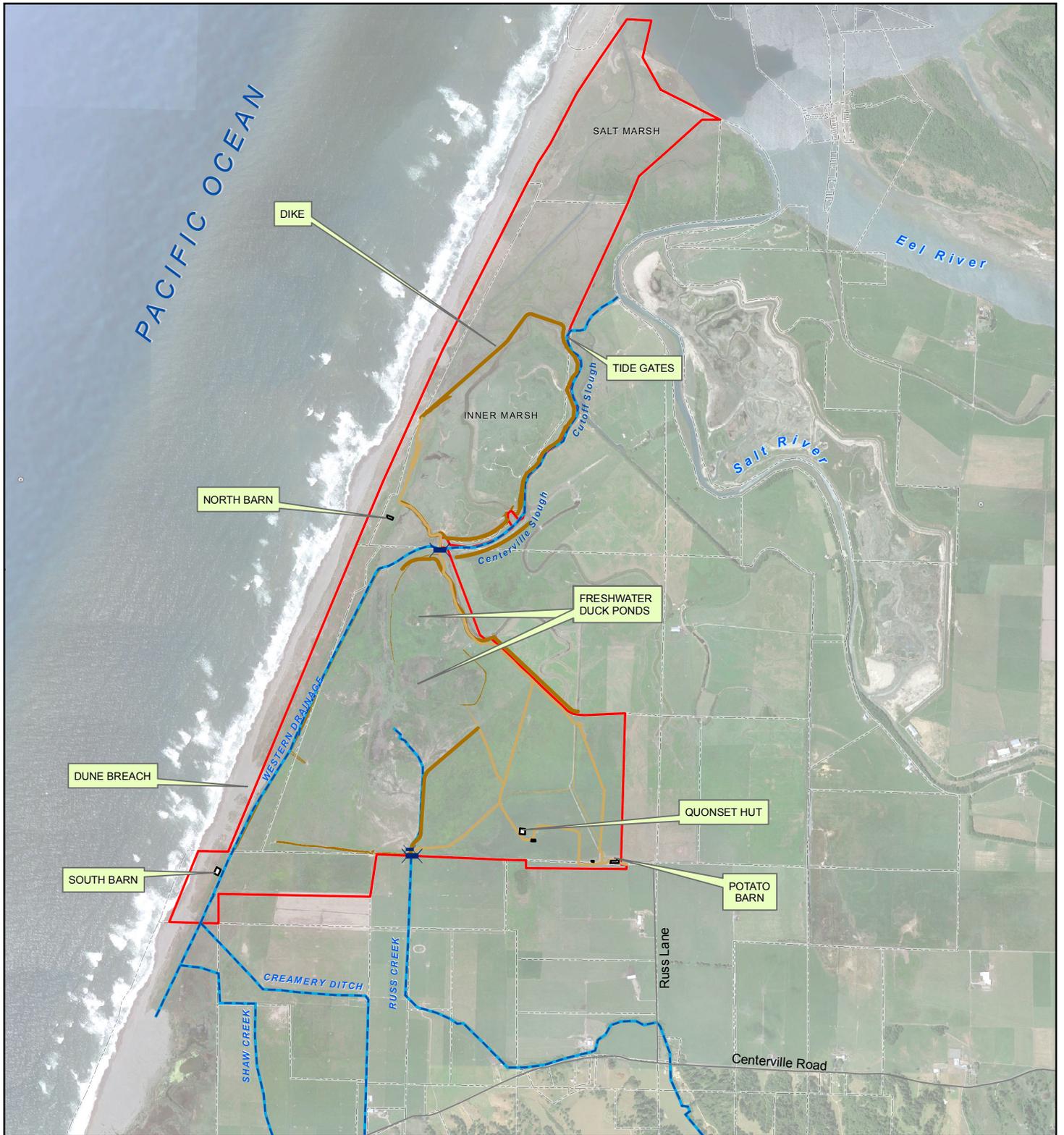


EREP Ecosystem  
Enhancement Project EIR

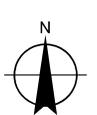
Job Number | 8410882.03  
Revision | 1  
Date | 06 Oct 2014

Project Vicinity and Location **Figure 1**





Paper Size ANSI A  
 0 750 1,500 3,000 Feet  
 Map Projection: Lambert Conformal Conic  
 Horizontal Datum: NAD 1983 2011  
 Grid: NAD 1983 2011 StatePlane California 1 FIPS 0401 Ft US



EREP Ecosystem Enhancement Project EIR  
 Job Number 8410882.03  
 Revision A  
 Date 08 Dec 2014

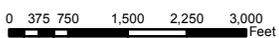
Project Area and Existing Conditions **Figure 2**

N:\US\Eureka\Projects\Legacy\Projects\1000298 Cal Trout\8410882 EREP Ecosystem Enhancement\08-GIS\Maps\Figures\NOI\F2\_Project\_ExistingConditions.mxd  
 © 2012. Whilst every care has been taken to prepare this map, GHD (and DATA CUSTODIAN) 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: Google Earth Aerial, 2014. Created by:progers  
 718 Third Street Eureka CA 95501 USA T 1 707 443 8326 F 1 707 444 8330 E eureka@ghd.com W www.ghd.com

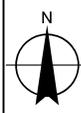




Paper Size ANSI A



Map Projection: Lambert Conformal Conic  
Horizontal Datum: NAD 1983 2011  
Grid: NAD 1983 2011 StatePlane California I FIPS 0401 Ft US



KAMMAN HYDROLOGY & ENGINEERING, INC



EREP Ecosystem Enhancement Project EIR

Job Number 8410882  
Revision A  
Date 17 Dec 2014

Conceptual Project Components

Figure 3



GHD Inc

718 Third Street  
Eureka CA 95501

T: 707-443-8326 F: 707-444-8330 E: eureka@ghd.com

© GHD Inc 2014

[www.ghd.com](http://www.ghd.com)

