

COASTAL CONSERVANCY

Staff Recommendation
April 6, 2023

HUMBOLDT BAY LIVING SHORELINE PLANNING

Project No. 23-010-01
Project Manager: Fanny Yang

RECOMMENDED ACTION: Authorization to disburse up to \$750,000 to the County of Humboldt for the Humboldt Bay Living Shoreline Planning project, which consists of completing preliminary designs, CEQA review, preparing 65% design plans, and preparing permit applications for phased salt marsh restoration along the Eureka-Arcata Highway 101 and Humboldt Bay Trail Corridor.

LOCATION: Humboldt County, CA

EXHIBITS

Exhibit 1: [Project Location Map](#)

Exhibit 2: [Salt Marsh Design Concept](#)

RESOLUTION AND FINDINGS

Staff recommends that the State Coastal Conservancy adopt the following resolution and findings.

Resolution:

The State Coastal Conservancy hereby authorizes a grant of an amount not to exceed seven hundred fifty thousand dollars (\$750,000) to the County of Humboldt (the grantee) for the Humboldt Bay Living Shoreline Planning project which consists of completing preliminary designs, conducting CEQA review, preparing 65% design plans, and preparing permit applications for phased salt marsh restoration along the Eureka-Arcata Highway 101 and Humboldt Bay Trail Corridor.

Prior to commencement of the project, the grantee shall submit for the review and written approval of the Executive Officer of the Conservancy (Executive Officer) the following:

1. A detailed work program, schedule, and budget.
2. Names and qualifications of any contractors to be retained in carrying out the project.

Findings:

Based on the accompanying staff recommendation and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed authorization is consistent with Chapter 3 of Division 21 of the Public Resources Code, regarding the Climate Ready Program.
2. The proposed project is consistent with the current Conservancy Project Selection Criteria.

STAFF RECOMMENDATION

PROJECT SUMMARY:

Staff recommends the Conservancy authorize a grant of up to \$750,000 to the County of Humboldt (the County) for the Humboldt Bay Living Shoreline Planning project to complete preliminary designs, conduct California Environmental Quality Act (CEQA) environmental review, prepare 65% design plans, and prepare permit packages for phased salt marsh restoration along the Eureka-Arcata Highway 101 corridor. The future salt marsh restoration will act as a sea level rise adaptation measure.

The Eureka-Arcata Highway 101 corridor is one of the most important transportation corridors in Humboldt County and represents one of the areas that is most vulnerable to sea level rise, continued coastal erosion, and flooding. The shoreline adjacent to the highway undergoes significant erosion associated with wind waves and tidal currents, due to the absence of salt marsh that would otherwise provide a natural energy-attenuating buffer. In December 2005, overtopping of the shoreline closed a portion of Highway 101 and caused severe erosion of the railroad embankment. In September 2022, the County completed an initial feasibility study for the use of natural shoreline infrastructure (NSI), also known as nature-based adaptation measures or living shorelines, to reduce flood risks and augment scarce salt marsh habitat along the portions of the Humboldt Bay shoreline adjacent to the Eureka-Arcata Highway 101 corridor.

Salt marsh restoration projects typically involve breaching levees to restore tidal influence onto diked former tidelands. The NSI project will be innovative by restoring salt marsh within existing mud flats where salt marsh was reduced by historical shoreline alterations. The future living shoreline project may involve an active approach where sediment may be beneficially reused by placement on the mudflat to restore salt marsh, or a passive approach where conditions will be created to promote accretion of sediment circulating in Humboldt Bay. Passive salt marsh restoration could achieve significant cost savings and greatly reduce impacts associated with handling large volumes of sediment that would be used to elevate mudflats to salt marsh elevations. The proposed project includes technical analysis of hydraulics, wave energy, and sedimentation processes under both current and future climate conditions to inform preliminary designs, CEQA review, and 65% design plans. The CEQA review and technical analysis will address data and information gaps around sourcing sediment material, material handling and transport, potential for using dredged sediment, construction phasing, and vegetation management.

Phased implementation is expected to be the preferred approach in order to demonstrate feasibility of the project concept and to account for the likelihood that only partial funding and/or a partial volume of fill material will be available in the short-term. The project design in the initial study envisions a series of self-contained “cells” defined by barrier berms which lends itself well to a phased implementation approach. Phase I would include construction of the first cell or set of cells. CEQA review and technical analysis will cover all phases of the project. Preparation of 65% designs and permit applications will cover Phase I of the anticipated phased implementation of the overall salt marsh restoration as a living shoreline along the Bay.

There is existing and growing support for NSI projects in and around Humboldt Bay. An initial NSI study assessing the feasibility of a salt marsh restoration project within the project area was completed by the County with funding from the Ocean Protection Council and National Fish and Wildlife Foundation. US Fish and Wildlife Service provided technical assistance for the initial NSI study and the US Geological Survey participated in the technical advisory committee. Caltrans District 1 is developing a Comprehensive Adaptation and Implementation Plan for the Eureka-Arcata Highway 101 corridor and is interested in incorporating nature-based solutions into their plan. The Humboldt Bay Harbor, Conservation and Recreation District will be generating large volumes of dredged material in the near future from various projects and is interested in promoting beneficial reuse of sediment in NSI initiatives. Other community stakeholders that were intimately involved with the initial NSI study and will continue to be consulted during the development of the advanced feasibility study include Cal Poly Humboldt Sea Level Rise Institute, the Wiyot Tribe, the Coastal Commission, the California Department of Fish and Wildlife, Humboldt County Fish & Game Advisory Committee, and community waterfowl groups.

Site Description: The project site is located along an approximately 1.25-mile section of the eastern shoreline of North Humboldt Bay (also known as Arcata Bay), situated between the Bracut Industrial Park on the north and the former California Redwood Company property at Brainard on the south, adjacent to Highway 101. Prior to development, the site included salt marsh associated with the Fay Slough complex. Construction of levees, railroad, and the state highway in the late 19th and early 20th century severely impacted the margins of the salt marsh plain and the associated tidal channel network. Currently, the shoreline adjacent to the railroad is primarily intertidal mudflat with only small, remnant salt marsh patches. The County is the primary landowner along the upland portion of the shoreline (through property acquisition for the Humboldt Bay Trail). California Department of Fish and Wildlife, Humboldt County, and a private party are listed as owners of the tideland parcels within the bay adjacent to the shoreline.

Grant Applicant Qualifications: The County has a strong track record for leading collaborative projects involving public agencies, non-governmental organizations, interested stakeholders, and environmental professionals to address complex natural resource issues. In 2020, the County received a Sustainable Groundwater Management planning grant (\$1.9 million) administered by the Department of Water Resources to prepare a Groundwater Sustainability Plan for the Eel River Valley groundwater basin. Also in 2020, the County received grants from the Ocean Protection Council and National Fish and Wildlife Federation (totaling \$250,000) to develop an initial feasibility study for applying nature-based methods on a multi-objective

project along the Humboldt Bay shoreline. In 2018, the County received an Adaptation Planning grant from Caltrans (\$425,000) to prepare a sea level rise adaptation plan for the Eureka Slough hydrographic area of Humboldt Bay, in conjunction with the City of Eureka and the Humboldt County Association of Governments. This project involved coordinating with many stakeholders and conducting innovative technical work to understand flood vulnerability and develop conceptual designs for adaptation projects in sensitive habitat areas.

The County will be responsible for maintaining the Humboldt Bay Trail South project which is scheduled to begin construction in 2023. The trail project is located adjacent to the site for the planning project. Thus, the County will also be managing, maintaining, and monitoring a project close to the site of the future NSI project.

CONSISTENCY WITH CONSERVANCY’S PROJECT SELECTION CRITERIA:

The proposed project is consistent with the Conservancy’s Project Selection Criteria, last updated on September 23, 2021, in the following respects:

Selection Criteria

1. Extent to which the project helps the Conservancy accomplish the objectives in the Strategic Plan.

See the “Consistency with Conservancy’s Strategic Plan” section below.

2. Project is a good investment of state resources.

The project is a good investment of state resources because it builds on previous investments and is supported by various state and federal agencies. The proposed project contributes to a future pilot salt marsh living shoreline project that will serve as a model for other nature-based climate adaptation projects in both the Humboldt region and other parts of the state.

3. Project includes a serious effort to engage tribes. Examples of tribal engagement include good faith, documented efforts to work with tribes traditionally and culturally affiliated to the project area.

The project includes a serious effort to engage tribes by continuing consultation with the Wiyot Tribe, which participated in the technical working group for the previous study and is actively involved in the Cal Poly Humboldt Sea Level Rise Institute.

4. Project benefits will be sustainable or resilient over the project lifespan.

The proposed project will facilitate the future restoration of a salt marsh living shoreline along the Eureka-Arcata Highway 101 corridor, which will provide sea level rise adaptation for road infrastructure over the course of this century. NSI projects are an effective tool for addressing expected sea level rise due to climate change as they reduce wave exposure while preserving ecosystem benefits. A fundamental purpose of the project is to develop plans for a landform that will be sustainable and resilient to sea level rise through at least the end of the 21st century.

5. Project delivers multiple benefits and significant positive impact.

The proposed project will facilitate the future implementation of a living shoreline that provides multiple benefits including salt marsh habitat enhancement, continued access to recreational amenities by protecting public road infrastructure, carbon sequestration, and mitigation of sea level rise impacts to Highway 101 between Eureka and Arcata. The proposed project also contributes to community preparedness and resilience to future climate change impacts such as flooding.

6. Project planned with meaningful community engagement and broad community support.

The proposed project will involve meaningful community engagement and community support as the County will continue coordinating and collaborating with stakeholders previously involved in the initial NSI feasibility study. The County will continue to engage with Cal Poly Humboldt Sea Level Rise Institute, the Wiyot Tribe, Humboldt County Fish & Game Advisory Committee, Humboldt Baykeeper, North Coast Chapter of the California Waterfowl Association, Humboldt County Ducks Unlimited, Caltrans, resource and regulatory agencies, and the Humboldt Bay Harbor District through one-on-one meetings.

PROJECT FINANCING

Coastal Conservancy	\$750,000
Project Total	\$750,000

Conservancy funding is anticipated to come from a Fiscal Year 2022/23 appropriation from the Greenhouse Gas Reduction Fund (GGRF) to the Conservancy for the Climate Ready Program for purposes of nature-based projects to address sea level rise (Budget Act of 2022, SB 154, as amended by AB 178, Chapter 45 of the Statutes of 2022). The Greenhouse Gas Reduction Fund Investment Plan and Communities Revitalization Act (Health and Safety Code (HSC) Sections 39710 – 39723) requires that GGRF funds be used to (1) facilitate the achievement of reductions of GHG emissions consistent with the Global Warming Solutions Act of 2006 (HSC Sections 38500 *et seq*), and (2) to the extent feasible, achieve other co-benefits, such as maximizing economic, environmental and public health benefits and directing investment to disadvantaged communities (HSC Section 39712(b)). The Global Warming Solutions Act of 2006 sets forth (among other things) certain GGRF funding priorities (HSC Section 38590.1). The California Air Resources Board (“CARB”) has adopted guidelines that establish program goals that agencies must achieve with their GGRF funds.

Consistent with the CARB 2018 Funding Guidelines, the proposed project will help the Conservancy meet its GGRF program goals because the project will:

- Facilitate GHG emission reductions (which includes increases in carbon sequestration) and further the purposes of AB 32 and related statutes;
- Maximize economic, environmental, and public health co-benefits to the State;
- Encourage projects that contribute to other State climate goals;

- Coordinate investments and leverage funds where possible to provide multiple benefits and to maximize benefits.

The proposed project will meet these goals by contributing to a future NSI implementation project restoring a salt marsh living shoreline. In addition to the direct benefit of road infrastructure protection, the salt marsh will help sequester greenhouse gases because tidal wetland habitat is one of the most carbon dense ecosystems in the world. The project will also provide additional environmental benefits to the state, including by facilitating the construction of transitional habitats that will ensure sea level rise resiliency.

CONSISTENCY WITH CONSERVANCY’S ENABLING LEGISLATION:

The proposed project will be undertaken pursuant to Section 31113 of Chapter 3 of Division 21 of the Public Resources Code, which authorizes the Conservancy to address the impacts and potential impacts of climate change on resources within the Conservancy’s jurisdiction (Section 31113(a)). Section 31113(b) and (c) authorizes the Conservancy to award grants to nonprofit organizations and public agencies to undertake projects that reduce greenhouse gas emissions and address extreme weather events, sea level rise, flooding, and other coastal hazards that threaten coastal communities, infrastructure, and natural resources. The Conservancy must, to the extent allowed, prioritize projects that maximize public benefits and accomplish one of several purposes, including reducing flood risk and enhancing fish and wildlife habitat. Consistent with these requirements, the proposed project will help develop nature-based shoreline infrastructure along the Eureka-Arcata Highway 101 corridor to reduce the threat of sea level rise and enhance salt marsh habitat.

Section 31113 also requires the Conservancy to prioritize projects that use natural infrastructure to help coastal communities adapt to climate change and projects that provide multiple public benefits, including, but not limited to, protection of communities, natural resources, and recreational opportunities. See Section 31113(d)(1). As discussed above, the proposed project will help develop future nature-based adaptation measures to protect critical road infrastructure.

CONSISTENCY WITH CONSERVANCY’S [2023-2027 STRATEGIC PLAN](#) GOAL(S) & OBJECTIVE(S):

Consistent with **Goal 3, Objective 3.2**, the proposed project contributes to planning for future salt marsh restoration along the Eureka-Arcata Highway 101 corridor.

Consistent with **Goal 4, Objective 4.1**, the proposed project is a planning project designing nature-based shoreline infrastructure as a sea level rise adaptation measure.

Consistent with **Goal 4, Objective 4.3**, the proposed project plans for a future nature-based climate adaptation project to mitigate climate impacts to infrastructure, such as sea level rise and flooding.

CEQA COMPLIANCE:

The proposed project is statutorily exempt from review under CEQA pursuant to 14 California Code of Regulations Section 15262, which exempts planning and feasibility studies for possible future actions that have not yet been approved, adopted, or funded. The proposed planning project consists of completing preliminary designs, conducting CEQA review, preparing 65% design plans, and preparing permit applications. Upon approval, staff will file a Notice of Exemption.