

COASTAL CONSERVANCY

Staff Recommendation
February 15, 2024

CULLINAN RANCH RESTORATION PROJECT: BENEFICIAL USE OF SEDIMENT

Project No. 90-036-02
Project Manager: Sara Haugen

RECOMMENDED ACTION: Authorization to (1) enter into a Memorandum of Agreement with the U.S. Army Corps of Engineers for cost sharing the incremental cost of placing dredged sediment from the Petaluma River at Cullinan Ranch; and (2) disburse up to \$313,000 to the U.S. Army Corps of Engineers for the non-federal share of the incremental cost of placing dredged sediment from the Petaluma River at Cullinan Ranch within the San Pablo Bay National Wildlife Refuge in Solano and Napa Counties.

LOCATION: San Pablo Bay National Wildlife Refuge, Solano and Napa Counties

EXHIBITS

- Exhibit 1: [Project Location Map](#)
- Exhibit 2: [Project Designs](#)
- Exhibit 3: [Redwood City Harbor Beneficial Use Project Staff Recommendation, December 6, 2018](#)
- Exhibit 4: [Project Letters to the San Francisco Bay Restoration Authority](#)
-

RESOLUTION AND FINDINGS

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

Resolution:

The State Coastal Conservancy hereby authorizes:

1. The Executive Officer to enter into a Memorandum of Agreement with the U.S. Army Corps of Engineers for cost sharing the incremental cost of placing dredged sediment from the Petaluma River at Cullinan Ranch, and
2. Disbursement of an amount not to exceed three hundred and thirteen thousand dollars (\$313,000) to the U.S. Army Corps of Engineers for the non-federal share of the

incremental cost of placing dredged sediment from the Petaluma River at Cullinan Ranch.

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 4.5 of Division 21 of the Public Resources Code, regarding restoration and enhancement of natural habitats in the San Francisco Bay Area.
2. The proposed project is consistent with the current Conservancy Project Selection Criteria.

STAFF RECOMMENDATION

PROJECT SUMMARY:

Staff recommends that the Conservancy enter into a memorandum of agreement (MOA) with U.S. Army Corps of Engineers (USACE) for cost sharing USACE's incremental cost of placing dredged sediment from the Petaluma River at Cullinan Ranch and disburse up to \$313,000 to the USACE pursuant to the MOA for the placement of dredged sediment at Cullinan Ranch (the "project") within the San Pablo Bay National Wildlife Refuge (Refuge) in Solano and Napa Counties (See Exhibit 1). The dredged sediment will be used for tidal wetland restoration at Cullinan Ranch. The Refuge is owned and managed by the U.S. Fish and Wildlife Service (USFWS).

The Petaluma River is currently dredged by the USACE every three years and has a volume of 200,000 to 400,000 cubic yards per dredge episode, to maintain its authorized -8-foot depth. The sediment dredged by the USACE must be placed at permitted placement sites, such as the Deep Ocean Disposal Site, In-Bay disposal sites, or at beneficial use sites. The USACE must choose the option known as the Federal Standard, which is the placement alternative that is the least costly, consistent with sound engineering practices and that meets federal environmental requirements. (See 33 Code of Federal Regulations § 335.7.) If beneficial placement is not the Federal Standard for a dredging project, USACE can use a beneficial placement site, but the cost that exceeds the Federal Standard (referred to as the incremental cost) must be paid either entirely by a non-federal sponsor, or cost-shared between USACE and a non-federal sponsor under existing authorizations. In 2020, Section 125(a)(2)(C) of the Water Resources Development Act (WRDA) authorized the USACE to cost share (65% federal, 35% non-federal) the incremental cost of beneficial use when it will provide significant environmental benefits. Beneficial placement is not the Federal Standard for dredging the Petaluma River. Given the important habitat and sea level rise benefits of placing dredged material at Cullinan Ranch, the USACE has determined that Section 125(a)(2)(C) can be utilized to place Petaluma River dredged sediment at Cullinan if the Conservancy enters into a cost-share MOA with USACE.

Currently, the USACE is using estimates of the incremental cost of beneficial placement at Cullinan Ranch based on previous years. While these are just estimates, the USACE staff have

indicated that, after entering the MOA, they will strive to ensure that the actual incremental cost does not exceed the Conservancy's authorized amount of \$313,000, even if the result is that only part of the Petaluma River Harbor dredged sediment is beneficially used while the rest is placed at a disposal site.

Cullinan Ranch Restoration Project has long been a top priority of many local and regional habitat restoration plans. The Refuge is within the larger landscape known as the San Pablo Baylands, which includes more than 40,000 acres of current and historic tidal wetlands, non-tidal perennial and seasonal wetlands, riparian corridors, and uplands. The restoration project advances the landscape-scale restoration vision of the Baylands Ecosystem Habitat Goals Science Update 2015 (Conservancy, 2015) – to create an unbroken band of restored marshes from the Petaluma River to Vallejo. Reclamation and conversion have led to the loss of approximately 82% of historic wetlands in the San Pablo Baylands, which despite this loss remain among the most important waterfowl and shorebird staging and wintering habitat complexes in the Pacific Flyway. The area supports over 30 species of waterfowl, and approximately 50% of the Pacific Flyway diving duck population: peak waterfowl populations approach 280,000 ducks. The area also supports nearly 600,000 shorebirds during peak migration periods. Reclaimed lands have subsided three to seven feet relative to marsh elevation depending on land use history. Nevertheless, the Sediment for Survival report (San Francisco Estuary Institute, 2021) indicates that the project is in a prime location for restoration, based on the area's high resilience to sea level rise due to its high sediment supply, both now and into the future. In 2015, Ducks Unlimited (DU), in partnership with the Refuge, restored 1,249 acres of tidal wetlands at the western portion of Cullinan Ranch (Cullinan West). The current phase of restoration consists of 290 acres of wetlands near the lower Napa River at the eastern portion of Cullinan Ranch (Cullinan East).

The project consists of placing dredged sediment at the 290-acre Cullinan Ranch East site. The Cullinan Ranch East restoration project consists of grading the site to create elevations appropriate for marsh and upland habitat restoration and restoring the site to tidal action. Once the sediment is placed on-site and the sediment consolidation period has passed, the Cullinan East restoration project will consist of lowering existing levees, excavating levee breaches at strategic locations to restore hydrology and historic channel networks, and creating broad upland transition zones and islands to benefit tidal marsh species (Exhibit 2). This project will place approximately 200,000-400,000 cubic yards of dredged sediment above and beyond quantities already slated for beneficial use, at Cullinan Ranch East. Several Cullinan East restoration project elements have already been completed, including construction of upland refugia habitat, construction of the setback levee and Pole Barn levee to allow dredged sediment placement. By placing dredged sediment on the site and raising the elevation of the site prior to breaching, this project will accelerate the Cullinan East restoration project timeline by enabling marsh vegetation to colonize sooner and increase resilience to sea level rise. The Cullinan East restoration project will benefit federally listed species such as the salt marsh harvest mouse and Ridgway's rail.

Site Description: The Petaluma River is located on San Pablo Bay in Sonoma and Marin Counties, about 35 miles North/Northwest of San Francisco, California. Operations and Maintenance dredging is divided into two sections - one channel 200 feet wide to a depth of -8-foot Mean Lower Low Water (MLLW) across the flats in San Pablo Bay to the mouth of the river known as Across-the-Flats Channel; and another channel 100 feet wide and -8-foot MLLW thereafter to Western Avenue in Petaluma, known as the River Channel, including a turning basin 300 to 400 feet wide to -8-foot MLLW.

Once dredged from the Petaluma River, the sediment will be placed at Cullinan Ranch East. USFWS purchased the Cullinan Ranch property in 1991, with an intent to restore the area to tidal marsh for the benefit of federally listed species such as the salt marsh harvest mouse and Ridgway's rail. In January 2015, three breaches were constructed in the northern perimeter levee thereby reconnecting over 1,200 acres of Cullinan Ranch to the surrounding tidal sloughs. This area (Cullinan West) is currently accreting sediment naturally through tidal action and providing open water habitat for a diversity of waterfowl and other waterbirds. To accelerate the accretion rate and habitat development, project partners designated a 290-acre area (Cullinan East) for dredged sediment use, with plans to import up to 4 million cubic yards of sediment to the Cullinan Ranch East project site. The sediment is imported from dredging projects throughout San Francisco Bay. So far, approximately 2.7 million cubic yards of sediment have been imported to the site. Dredged sediment was initially delivered via barges which travelled up Dutchman Slough and moored adjacent to the Cullinan East project site; the sediment was hydraulically pumped over the perimeter levee and deposited in the dredged sediment containment area. To accommodate larger equipment, a Napa River offloading location was added, with a pipeline in Dutchman Slough. Within the next five years, the Cullinan Ranch East area will be restored to tidal action, and because of the dredged sediment, it will be at an elevation that is able to immediately support vegetated tidal marsh habitat.

Grant Applicant Qualifications: Partnering with USACE to place dredged sediment at Cullinan Ranch East would leverage federal funds that are equal to 65 percent of the project costs, as well as leverage the extensive knowledge of USACE staff who have been involved in beneficial use of dredged sediment for decades. The USACE dredges approximately 1.5 million to 2 million cubic yards of sediment each year as part of its Operations and Management dredge program in San Francisco Bay, maintaining federal navigation channels for shipping.

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 as it will beneficially use dredged sediment from the Petaluma River to raise elevations at Cullinan Ranch prior to breaching that would otherwise have been disposed of in the Bay or ocean. Raising the land elevations at Cullinan Ranch will ensure wetland restoration success as well as sea level rise resilience over time. The budget for this work is reasonable as it is being cost-shared with the federal government with a 65% federal cost share. The project is feasible as the USACE has extensive experience bringing dredged sediment into sites designated for wetland restoration.

The proposed project is supported by several local and regional plans, serves a regional constituency within the Bay Area, is ready for implementation, and will lose project benefits if not implemented quickly. To that end, the project aligns and implements goals from the following plans:

- **Restoring the Estuary: An Implementation Strategy for the San Francisco Bay Joint Venture.** The project will lead to the restoration, and enhancement of 290 acres, supporting the habitat conservation objectives of the San Francisco Bay Joint Venture.
- **Baylands Ecosystem Habitat Goals Science Update 2015.** The project promotes the goal for the North Bay subregion to create an unbroken band of restored marshes from the Petaluma River to Vallejo as soon as possible and reconnect the San Pablo Baylands to the Sonoma Creek watershed. The 2015 Science Update stresses the importance of establishing vegetated tidal marshes by 2030 to maximize resilience to sea level rise and emphasizes the need to accelerate the planning, permitting, and construction of restoration projects.
- **Long-Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region, Management Plan.** The project supports the goal of this strategy to increase beneficial dredged sediment use. It will increase the amount of sediment going to restoration by providing funding to pay the cost offset of in-bay or deep-ocean disposal for dredging projects that have suitably clean sediments that otherwise would not go to beneficial use.
- **Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California.** The project helps meet the core goal of the USFWS's recovery plan —comprehensive restoration and management of tidal marsh ecosystems to lead to the delisting of the focal listed species in the plan.
- **Comprehensive Conservation and Management Plan for the San Francisco Estuary.** The project will lead to restoration of critical physical processes and habitats, allowing tidal wetlands to migrate landward and ensuring habitat connectivity as climate change alters landscapes.
- **Water Quality Control Plan for the San Francisco Bay Basin.** Tidal and freshwater wetland restoration that results from the Cullinan East restoration project, which this project supports, will increase the acreage of Bay wetlands and enable filtration of pollutants, helping to meet water quality objectives identified in this plan.

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

A key long-term benefit of this project is the sea level rise resilience and restoration success potential due to placing dredged sediment to raise land elevations prior to restoring tidal connections. Sediment is the key building block to shoreline habitats and sea level rise protection and this project will be importing up to 400,000 cubic yards of dredged sediment from the Petaluma River. A key long-term benefit of the Cullinan East restoration project, which this project supports, is the connection of upland and tidal habitats and the creation and protection of transition zones, which will provide critical migration space for tidal species as sea levels rise toward the middle of the century.

4. Project delivers multiple benefits and significant positive impact.

The project’s greatest positive impact will be contributing to the creation of a large, connected, protected landscape, including over 14,000 acres of wetlands on the Refuge and within Napa-Sonoma Marshes State Wildlife Area. The Cullinan East restoration project will enhance habitat for vital populations of fish, birds, and other wildlife; restore and enhance seasonal and tidal marshes, thereby enhancing the region’s capacity to remove pollution from the Bay’s water; and sequester carbon. It will provide habitat for endangered species, including Ridgway’s rail and salt marsh harvest mouse, and provide foraging and wintering habitat for hundreds of thousands of waterfowl and shorebirds along the Pacific Flyway. Located in the Refuge, it will enhance opportunities for Bay Area residents to experience the Bay and appreciate all that it offers.

PROJECT FINANCING

Coastal Conservancy	\$313,000
Project Total	\$313,000

The anticipated funding source for this authorization is from a FY 2023/2024 appropriation of General Fund to address urgent sea-level rise adaptation and coastal resilience needs using nature-based solutions or other strategies (The Budget Act of 2023, Chapter 38, Statutes of 2023 (AB 102)). The proposed project is consistent with this funding source as it will increase the sea level rise resilience and wetland restoration success of the Cullinan Ranch Restoration Project by bringing in dredged sediment that would have otherwise been disposed of in the Bay or ocean. The USACE will provide their 65% cost share of federal dollars, but the exact amount will depend on the result of a competitive bid process.

Unless specifically identified as “Required Match,” the other sources of funding and in-kind contributions described above are estimates. The Conservancy does not typically require matching funds or in-kind services, nor does it require documentation of expenditures from other funders or of in-kind services. Typical grant conditions require grantees to provide any funds needed to complete a project.

CONSISTENCY WITH CONSERVANCY'S ENABLING LEGISLATION:

The project is being undertaken pursuant to Chapter 4.5 of Division 21 of the Public Resources Code (sections 31160-31165). Section 31162 authorizes the Conservancy to undertake projects in the nine-county San Francisco Bay Area to help achieve regional public access and resource goals. Consistent with Section 31162(b), the project will raise the elevation of the land which will accelerate restoration of critical tidal wetland habitat.

Consistent with Section 31162(c), the project assists in the implementation of the San Francisco Bay Plan, which contains policies to protect and restore marshes and mudflats: "Tidal marshes and tidal flats should be conserved to the fullest possible extent" [Tidal Marshes and Tidal Flats, Policy No. 1]; "Where feasible, former tidal marshes and tidal flats that have been diked from the Bay should be restored to tidal action in order to replace lost historic wetlands" [Tidal Marshes and Tidal Flats Policy No. 5]; and, "Dredged materials should, if feasible, be reused or disposed outside the Bay..." and "dredging projects should maximize use of dredged material as a resource consistent with protecting and enhancing Bay natural resources, such as creating, enhancing, or restoring tidal and managed wetlands" [Dredging Policy, Policies No.3 and 5, respectively].

The proposed project satisfies the criteria for determining project priorities under Section 31163(c):

- (1) It is supported by adopted local and regional plans including the San Francisco Bay Plan, Sediment for Survival, and the Long-Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region;
- (2) It is multi-jurisdictional and serves a regional constituency by offering opportunities for beneficial reuse of dredged sediment throughout San Francisco Bay and providing a resource enhancement opportunity of statewide significance;
- (3) The project can be implemented in a timely way as USACE has secured its cost-share and stands ready to continue project work;
- (4) It provides benefits that could be lost with time, as vegetated tidal wetlands need to be established as soon as possible to keep pace with sea level rise; and
- (5) The project includes matching funds from the federal government, which will provide 65 percent of project implementation costs.

CONSISTENCY WITH CONSERVANCY'S [2023-2027 STRATEGIC PLAN](#):

Consistent with **Goal 3.2, Restore or enhance habitats**, the proposed project will contribute to ensuring the sea level rise resilience and success of 290 acres of tidal wetland restoration at Cullinan Ranch.

CEQA COMPLIANCE:

On December 6, 2018 (Exhibit 3), the Conservancy reviewed and adopted findings for the "Final Environmental Assessment/Environmental Impact Report, Maintenance Dredging of the Federal Navigation Channels in San Francisco Bay, Fiscal Years 2015-2024" (USACE EA/EIR),

which was certified, pursuant to the California Environmental Quality Act (CEQA), by the San Francisco Bay Regional Water Quality Control Board on May 13, 2015. The Conservancy found that, although the placement of dredged sediment at Cullinan Ranch may have potentially significant effects in the area of Cultural and Paleontological Resources, these effects will be mitigated through feasible mitigation measures. The project remains substantially unchanged from its description in the USACE EA/EIR, and no new environmental information or change in circumstances require a re-evaluation of the potential environmental effects of the project (14 Cal Code. Regs. Section 15162(b))

Staff filed a Notice of Determination on December 11, 2018.