

SAN FRANCISCO BAY RESTORATION AUTHORITY

Staff Recommendation

April 11, 2018

**DEER ISLAND TIDAL BASIN WETLANDS RESTORATION PROJECT**

Project No. RA-004

Project Manager: Avra Heller

**RECOMMENDED ACTION:** Authorization to disburse up to \$630,000 to the Marin County Flood Control District to prepare detailed designs, permit applications, and environmental documentation for the Deer Island Tidal Basin Wetlands Restoration Project, which will include restoration of approximately 194 acres of tidal baylands and creation of 4,500 linear feet of ecotone levees at Deer Island, Novato, Marin County.

**LOCATION:** Novato, Marin, Measure AA Region: North Bay

**MEASURE AA PROGRAM CATEGORY:** Vital Fish, Bird and Wildlife Habitat Program and the Integrated Flood Protection Program; Shoreline Public Access Program

---

**EXHIBITS**

Exhibit 1: [Project Location and Site Map](#)

Exhibit 2: [Project Photographs](#)

Exhibit 3: [Project Designs](#)

Exhibit 4: [Project Letters](#)

---

**RESOLUTION AND FINDINGS:**

Staff recommends that the San Francisco Bay Restoration Authority adopt the following resolution pursuant to The San Francisco Bay Restoration Authority Act, Gov. Code § 66704.5:

“The San Francisco Bay Restoration Authority hereby authorizes the disbursement of an amount not to exceed six hundred thirty thousand dollars (\$630,000) to the Marin County Flood Control District (MCFCD) to prepare detailed designs, permit applications, and environmental documentation for the Deer Island Tidal Basin Wetlands Restoration Project, which will include restoration of approximately 194 acres of tidal baylands and creation of 4,500 linear feet of ecotone levees at Deer Island in the lower Novato Creek Watershed, Novato, Marin County. Prior to commencement of work, the grantee shall submit for the review and written approval of the Executive Officer of the Authority:

- a. A detailed work program, schedule, and budget.
- b. Names and qualifications of any contractors to be employed in carrying out the work.
- c. A plan for acknowledgement of Authority funding.”

Staff further recommends that the Authority adopt the following findings:

“Based on the accompanying staff report and attached exhibits, the San Francisco Bay Restoration Authority hereby finds that:

1. The proposed authorization is consistent with The San Francisco Bay Restoration Authority Act, Gov. Code § 66700-66706.
2. The proposed authorization is consistent with The San Francisco Bay Clean Water, Pollution Prevention and Habitat Restoration Measure (Measure AA).
3. The grantee is not required to enter into a project labor agreement per Resolution 22 because the proposed authorization is for planning work.”

---

### **PROJECT SUMMARY:**

Staff recommends that the Authority disburse \$630,000 to the Marin County Flood Control District (MCFCD) to prepare detailed designs, permit applications, and environmental documentation for the Deer Island Tidal Basin Wetlands Restoration Project (restoration project or project). Preliminary plans for the project provide for restoration of approximately 194 acres of diked, subsided and degraded historic tidal marsh to full tidal natural conditions, and the creation of 4,500 linear feet of adjacent ecotone levees in the Deer Island Tidal Basin in the lower Novato Creek watershed (Exhibit 1).

Much of the bay’s historic marsh has been lost through diking and draining of former tidal baylands for ranching and agriculture. The goal of the restoration project is to breach existing levees along Novato Creek and restore approximately 194 acres of diked historic tidal wetlands to full tidal function. The project will contribute to restoration of one of the most extensive remaining and important reaches of San Pablo Bay through helping connect a tidal wetlands habitat corridor that arcs across north three North Bay counties. Starting in Marin County, tidal marsh extends from the historic China Camp wetlands through the recently completed tidal wetlands at the former Hamilton Air Force Base up around and through the Sonoma Baylands and Sears Pt. Restoration Projects in Sonoma County and continuing along the Highway 37 wetlands to the Napa/Sonoma salt ponds and Napa River projects in Napa County. Connecting these bay wetlands is critically important for biological diversity and will restore habitat connectivity for the many critically threatened and endangered species that use these areas. The lower Novato Creek baylands, which include the Deer Island Tidal Basin and Bel Marin Keys, are a keystone piece in this

landscape scale wetland restoration both now and under sea level rise conditions since much of the lower watershed is still undeveloped.

This project is an important step towards reconnecting natural watershed sediment transport processes in lower Novato Creek, and providing habitat for a variety of threatened and endangered species. Restoration of the Deer Island Tidal Basin will allow for tidal channel development which is critical for the endangered Ridgeway's Rail's foraging and nesting habitats. In the current hydrological regime, the basin is largely flooded for approximately half of each year. Restoration plans include restoring tidal fluctuation to the basin and creating transitional habitat areas that are necessary for the endangered Salt Marsh Harvest Mouse. Tidal and freshwater mixing zones such as those that occur at the project area are critical for rearing of out-migrating juvenile steelhead. The stretch of Novato Creek within the project area is also a migratory corridor for steelhead and has been designated by USFWS NOAA as critical habitat for that species. Restoration of the natural floodplain would also enhance foraging opportunities for waterfowl and introduction of transition zones and the creation of high-tide nesting islands would improve nesting habitat for a wide range of bird species.

The project will also serve as a multi-benefit project by combining urban flood protection with shoreline and habitat restoration. The project is intended to provide flood protection to critical local and regional transportation and housing infrastructure including the sections of Highway 37 that experienced significant flooding in 2016 (Exhibit 3). That flooding event shut-down traffic on the corridor for several weeks, which impacted traffic on a regional scale (Exhibit 2). The project fits the combined restoration and sea level rise adaptation vision for the transportation corridor developed by the Highway 37 Baylands Group, a consortium of environmental groups, wetlands scientists, and landowners. On the local scale, the project is expected to reduce water levels in areas of the City of Novato that experience flooding during events below the 100-year flood flows. Figure four in Exhibit 3 shows the specific areas in the City of Novato as well as along Highway 37 that, according to initial studies, will experience either reduced flooding or elimination of flooding if the project is implemented. The flood control benefits of the project can serve as a model for implementing similar projects throughout the region and provide further future opportunities to demonstrate the beneficial reuse of dredged material to adapt to and manage sea level rise.

Deer Island Tidal Basin sits at the critical physical habitat junction where fresh flows from Novato Creek enter the mixed salinity flow regime in San Pablo Bay. The project site is one of only a handful of locations in the Bay where potential remains to restore tidal marsh within this mixing zone. This hydrological zone provides unique and important habitat for a number of important threatened and endangered species (mentioned above). Re-establishing the natural ecological and sediment transport functions of the lower Novato creek system and adjacent marshlands will result in the restoration of these important ecological and physical processes and will provide sediment to maintain the habitat restoration work over time. The project will provide flood control benefits to a critical section of Highway 37, sections of the City of Novato, as well as protection for Novato

Sanitary Districts' wastewater treatment plant which is adjacent to the proposed project site.

The requested funding will support preparation of designs, environmental review, and permit applications for the breaching and removal of the existing channel-confining levee around the creek and restoring natural fluvial-tidal action and processes within this restored basin along Novato Creek. Design studies will be completed for the restoration of approximately 194 acres of tidal baylands. Of that 194 acres, approximately 120 acres of diked baylands will be restored to tidal marsh in the ecologically significant freshwater-saltwater mixing zone, 36 acres will receive full or muted tidal restoration, and 38 acres of flood ponds will be restored to tidal ponds with specific habitat enhancements for birds, especially waterfowl. Restoration plans will address designs for high-flow refugia for migrating steelhead, and rearing habitat for juvenile steelhead, including creating return channels within breached areas.

The project design will include the construction of approximately 4,500 linear feet of new set-back levees designed to create ecotone transition habitats with room for sea level rise adaptation and habitat migration. The project will serve as a demonstration of a natural levee approach and as a model project for sea level rise adaptation planning and design around the Bay edge. This work is informed by the Transition Zone subgroup's planning work that was part of the Bay Area Habitat Goals Update.

Specifically, the grant funds requested in this proposal will be used for the following items:

**Survey, Plans and Designs Preparation**

- Final site topographic and biological surveys
- Geotechnical field investigation and ecotone levee design
- Final hydraulic analysis of project benefits and impacts
- Analysis of how to incorporate public access
- Preparation of design basis memos for constructed features
- Preparation of detailed plans
- Preparation of final Monitoring and Reporting Plan (MRP)

**Permitting & Environmental Analysis**

- Preparation of California Environmental Quality Act (CEQA) documentation for the project, anticipated to be a mitigated negative declaration
- Coordination with permitting agencies (USACE, RWQCB, CDFW, USFWS, and NMFS) and preparation of necessary permit application materials

During the project design work, MCFCD will evaluate all opportunities for including public access in the restoration project, including opportunities to connect the restored area to existing public trails on Deer Island Preserve (which is owned and managed by Marin County Parks and Open Space), as well as opportunities for improving informal trails

along existing levees and constructing formal overlooks and interpretative areas. The project designs will incorporate all such feasible opportunities.

MCFCDD began conceptual design for this project in 2012, developing a comprehensive evaluation of multi-objective projects in the Novato watershed under the Marin County Watershed Program. The Novato Creek Hydraulic Study, which involved multiple partner agencies and stake holders, was conducted to identify and evaluate a suite of feasible alternatives to reduce Novato Creek flood hazards and on-going sediment management effort and costs. The report highlighted alternatives that would reduce flooding hazards while protecting and enhancing habitat for sensitive species (with a particular look to Ridgway's Rails and steelhead). Restoring the Deer Island Tidal Basin was identified during that process.

MCFCDD's in-house staff and consultants have extensive experience and expertise in tidal marsh restoration projects. MCFCDD has been a leader in the use of natural systems for flood protection and habitat projects and has pioneered the implementation of pilot projects for sea level rise adaptation. MCFCDD staff have been involved in tidal wetland restoration at the Hamilton Wetlands Project, provided engineering design support for the McInnis Wetlands Restoration Project, and have led successful restoration design efforts at several other tidal marsh restoration projects around the Bay including the Martin Luther King, Jr. tidal wetlands restoration for the Port of Oakland, Herons Head Park for Port of San Francisco, Oro Loma Marsh restoration for EBRPD, and the Sears Pt tidal wetlands restoration project for the Sonoma Land Trust. California Assembly Member Marc Levine and the Marin Audubon Society each wrote a letter supporting the funding of the project's design, permitting and environmental analyses. (see Exhibit 4). Both letters emphasize this project's capacity to protect and restore essential tidal baylands habitat and provide critical flood control benefits to the City of Novato and to the Highway 37 corridor.

**Site Description:** Deer Island Tidal Basin sits at the mouth of the Novato Creek watershed, at a unique location where the freshwater Delta meets the saline San Francisco Bay. The project site is adjacent to Deer Island Preserve, just north of the Bel Marin Keys and Hamilton Wetlands restoration sites. (See Exhibit 1 for project location.) The site is currently comprised of a mixture of native and nonnative plant species. The northern portion of the site is comprised predominantly of non-native weeds, and the southern portion of the site is dominated by native wetland species, with patches of non-native weeds (see photos in Exhibit 2). As a former tidal marsh, the remaining soil salinity has left remnant areas of salt marsh vegetation, but the current hydrological inputs are freshwater runoff from surrounding areas and groundwater. The presence of adjoining habitat provides the opportunity for species expansion from areas of existing marginal habitat into newly restored areas. The adjacent County-owned Deer Island Preserve, for example, is an example of an intact interface between upland oak woodland habitat and bay fringe marsh, of which few examples remain regionally. These areas provide for

habitat connectivity that supports a diverse range of wildlife species due to the variation seen at the interface between these habitats.

**PROJECT FINANCING**

<b>San Francisco Bay Restoration Authority</b>	\$630,000
<b>Project Total</b>	<b>\$630,000</b>

MCFCDD will contribute in-kind staff time totaling an estimated \$60,000 in burdened costs to oversee and administer the project.

**CONSISTENCY WITH AUTHORITY’S ENABLING LEGISLATION, THE SAN FRANCISCO BAY RESTORATION AUTHORITY ACT:**

The San Francisco Bay Restoration Authority Act (SFBRA Act), Government Code section 66704.5, authorizes the Authority to grant funds for eligible projects. Consistent with Section 66704.5(a), the project is located in Marin County along San Pablo Bay, outside of the Delta primary zone.

The project is eligible for a grant under section 66704.5(b), which provides that an eligible project shall: “(1) Restore, protect, or enhance tidal wetlands, managed ponds, or natural habitats on the shoreline in the San Francisco Bay area, excluding the Delta primary zone,” and “(2) Build or enhance shoreline levees or other flood management features that are part of a project to restore, enhance, or protect tidal wetlands, managed ponds, or natural habitats identified in paragraph (1).” The project will restore tidal wetlands and natural habitats along the shoreline and will build a shoreline levee that will provide both flood protection and habitat.

Funding the designs, permit preparations, and environmental analyses for the project is consistent with SFBRA Act section 66704.5(e), which provides that the Authority may award grants for “all phases of planning, construction, monitoring, operation, and maintenance” of eligible projects.

**CONSISTENCY WITH MEASURE AA PROGRAMS AND ACTIVITIES:**

The project will help achieve the *Vital Fish, Bird and Wildlife Habitat Program’s* goal to “significantly improve wildlife habitat that will support and increase vital populations of fish, birds, and other wildlife in and around the Bay.” This restoration project will recreate wetlands and provide low and high marsh habitat for a number of important fish, bird, and mammal species of concern, including the Salt Marsh Harvest Mouse, Ridgway’s Rail,

steelhead, tidewater goby, and numerous other shorebirds, waterfowl, and fish. Upon completion of construction of the project, the MCFCD will provide for stewardship, maintenance and monitoring of the restored marsh. MCFCD is committed to maintaining the marsh to ensure its benefits for future generations.

The *Integrated Flood Protection Program's* purpose is to use natural habitats to protect communities along the Bay's shoreline from the risks of severe coastal flooding caused by storms and high-water levels. The restoration project will be designed to provide significant flood protection for several important infrastructure items such as the Novato Sanitary District's force main sewer which runs down the middle of Deer Island Tidal Basin, and Highway 37, a major transportation corridor vulnerable to flooding. All flood management aspects of the project will also provide habitat benefits.

As per the *Safe, Clean Water and Pollution Prevention Program's* purpose, the project will help improve water quality by restoring tidal marsh and wetlands that will act as natural filters preventing harmful toxins from entering the Bay.

Finally, the project will help achieve the *Shoreline Public Access Program's* goal of enhancing the quality of life of Bay Area residents through safe and improved public access as part of wildlife habitat restoration projects in and around the Bay. The project design will include, to the extent feasible, public access and connectivity to existing public trails on Deer Island Preserve (Marin County Parks and Open Space), as well as improvements to informal trails along existing levees and constructing formal overlooks and interpretative areas.

#### **CONSISTENCY WITH MEASURE AA PRIORITIZATION CRITERIA:**

**1. Greatest positive impact.**

The project will contribute to restoration of one of the most extensive remaining undeveloped reaches of San Pablo Bay, connecting and creating a tidal wetlands habitat corridor across three SF North Bay counties (Marin, Sonoma and Napa). Connecting these bay wetlands is critically important for biological diversity and will restore habitat for the many critically threatened and endangered species that use these areas, while increasing the functions of Bay habitats and the quality of our regional aquatic environment. Regional habitat planning efforts including the Baylands Ecosystem Goals Project, the USFWS Tidal Marsh Ecosystem Recovery Plan, Flood Control 2.0 and the Novato Watershed Plan all point to the ecological importance of restoring tidal marsh along Novato creek.

**2. Greatest long-term impacts.**

The restored marshes will ultimately provide important benefits for flood control and shoreline erosion, which are both expected to increase in severity over time. The flood control benefits of the project can serve as a model for implementing similar projects throughout the region, and ownership by the Flood Control District provides further future opportunities to demonstrate the beneficial reuse of dredged material to adapt to

sea level rise. The 4,500 linear feet of ecotone levee is intended to both protect critical infrastructure from sea level rise and provide areas for tidal bayland habitats to migrate upslope, ensuring long-term sustainability of the habitat and physical flood protection benefits of the proposed project.

**3. Economically disadvantaged communities.**

The City of Novato has a disadvantaged community just upstream of the project site that would benefit from the projected lowering of surface water levels and an overall reduction in flooding. Exhibit 3, Figure 4 shows the areas that will benefit from reduced or eliminated flooding under the initial hydraulic modeling for the project. As shown, there are several areas of low income properties in the City of Novato that will see increased levels of flood protection along with reduced water levels at the State Highway 37 crossing (the location of 2016 flooding). These results will be confirmed during final design.

**4. Benefits to economy.**

At the local scale, the project will protect against the costs of flooding, including rehabilitation of public and private infrastructure and the disruption to small and local businesses that results from flooding. This increases the viability of local businesses and allows those businesses to continue to provide job opportunities for the local workforce.

At the regional scale, the project will protect critical wastewater treatment infrastructure necessary to maintain regional water quality. The design will minimize the potential for costly repairs and allow for water treatment processes to continue, avoiding economic and social costs associated with poor water quality. The project will also help to protect Highway 37's critical transportation infrastructure from flood events.

**5. Engage youth and young adults.**

The proximity of the project to local schools offers an abundance of opportunity for outreach and education to youth in the community. The MCFCD has previously partnered with the Students and Teachers Restoring a Watershed, and the implementation of this project will create an opportunity to partner with them and the North Bay Conservations Corps to restore wetlands. Marin County Parks and Open Space regularly engages with local schools to provide natural resources education. In addition, MCFCD regularly contracts with the North Bay Conservation Corps to provide maintenance services, offering opportunities for at-risk youth to gain valuable job experience and knowledge of opportunities in natural resources management.

**6. Monitoring, maintenance, and stewardship.**

The proposed design work for the project includes preparation of a Monitoring and Reporting Plan (MRP) that will address the monitoring of chemical, biological and physical properties of the restored site to assess project performance and success. The



MRP will describe performance criteria and monitoring for biological resources, sediment and water quality, engineering and construction, and operation. Following implementation, the local Flood Zone would assume responsibility for managing and monitoring the work.

**7. Coastal Conservancy’s San Francisco Bay Area Conservancy Program.**

This project meets all the goals and requirements of the Coastal Conservancy’s San Francisco Bay Area Conservancy Program.

- a. The project supports the goals of local and regional planning efforts including the USFWS Tidal Marsh Ecosystem Recovery Plan, Flood Control 2.0, Novato Watershed Program and the Baylands Ecosystem Habitat Goals Project (original 1999 and 2015 update).
- b. The project location provides opportunities for expansion of core species populations that can provide regional benefits. It can also serve as a regional model for the co-benefits of flood control and ecological restoration as well as for the beneficial reuse of dredged material to manage and adapt to sea level rise. The project’s expected flood control benefits for the Highway 37 corridor have the potential to positively impact regional traffic flows and hazard mitigation.
- c. The size of the project, geographic location, incorporation of local community benefits, overall low level of risks and barriers to restoration, along with MCFCD’s highly experienced staff, all contribute the applicant’s expected ability to complete the project in a timely manner.
- d. Several benefits of the project could be lost without its timely implementation. The steelhead population within Novato Creek is one of the few remaining salmonid runs inhabiting local tributaries within San Francisco Bay. Implementing the project in the near term will provide enhanced opportunity for high flow refugia and juvenile rearing habitat to the benefit of the population. Existing ground elevations behind the levees have experienced some subsidence but have not subsided to elevations that are problematic for restoration. Implementing the project now would avoid risks of future subsidence and associated increased complexity of accomplishing restoration. Future sea level rise could exacerbate this risk.
- e. MCFCD will provide leverage to Authority funds through \$60,000 in in-kind staff services and will be responsible for the implementation and maintenance of the project in future phases.

**8. San Francisco Bay Joint Venture’s Implementation Strategy**

This project meets the San Francisco Bay Joint Venture’s implementation strategy criteria and is included on the SFBJV’s priority projects list due to its explicit focus on restoring tidal wetland habitat.

**COMPLIANCE WITH CEQA:**

The proposed preparation of designs, permit applications and environmental documentation is categorically exempt from CEQA pursuant to 14 Cal. Code of Regs. Section 15306, which exempts basic data collection and resource evaluation activities that do not result in a serious or major disturbance to an environmental resource. In addition, to the extent the proposed authorization will fund planning work, it is statutorily exempt from the requirement to prepare an environmental impact report or negative declaration under 14 Cal. Code of Regs. Section 15262, which provides that preparation of planning or feasibility studies for possible future actions that have not yet been approved, adopted or funded does not require preparation of an EIR or MND although environmental factors must be considered. The preparation of designs, permit applications and CEQA documentation entails planning, data collection, and resource evaluation activities for future actions that have not yet been approved or funded, and the resource evaluation activities will not result in disturbance to an environmental resource. Environmental factors will be considered. Staff will file a Notice of Exemption upon approval of the proposed project.