

SAN FRANCISCO BAY RESTORATION AUTHORITY

Staff Recommendation  
May 3, 2024

**EVOLVING SHORELINES PROJECT AT BOTHIN MARSH, PHASE 2:  
DESIGN AND ENVIRONMENTAL COMPLIANCE**

Project No. RA-030  
Project Manager: Linda Tong

**RECOMMENDED ACTION:** Authorization to disburse up to \$1,700,000 to Golden Gate National Parks Conservancy for planning and design, community engagement, and studies in support of environmental review and permitting requirements, to enhance habitat and realign a segment of the Bay Trail at Bothin Marsh Open Space Preserve in Marin County.

**LOCATION:** Bothin Marsh Open Space Preserve, Mill Valley, Marin County, Measure AA Region: North Bay.

**MEASURE AA PROGRAM CATEGORY:** Safe, Clean Water and Pollution Prevention Program; Vital Fish, Bird and Wildlife Habitat Program; Shoreline Public Access Program.

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**EXHIBITS**

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

Exhibit 2: [Project Designs and Photographs](#)

Exhibit 3: [Project Letters](#)

Exhibit 4: [Staff Recommendation for Evolving Shorelines Project at Bothin Marsh \(October 15, 2021\)](#)

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**RESOLUTION AND FINDINGS**

Staff recommends that the San Francisco Bay Restoration Authority adopt the following resolution and findings:

Resolution:

The San Francisco Bay Restoration Authority hereby authorizes the disbursement of an amount not to exceed one million seven hundred thousand dollars (\$1,700,000) to Golden Gate National Parks Conservancy for planning and design, community engagement, and studies in support of environmental review and permitting requirements, to enhance habitat and realign a segment of

the Bay Trail at Bothin Marsh Open Space Preserve in Marin County. Prior to commencement of the project, the grantee shall submit for the review and written approval of the Executive Officer of the Authority the following:

1. A detailed work program, schedule, and budget.
2. Names and qualifications of any contractors to be employed in carrying out the project.
3. A plan for acknowledgement of Authority funding.

Findings:

Based on the accompanying staff recommendation 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 Sections 66700-66706.
2. The proposed authorization is consistent with The San Francisco Bay Clean Water, Pollution Prevention and Habitat Restoration Measure (Measure AA).

### **STAFF RECOMMENDATION**

#### **PROJECT SUMMARY:**

Staff recommends that the Authority authorize a grant of up to \$1,700,000 to Golden Gate National Parks Conservancy (Parks Conservancy) to advance the Evolving Shorelines Project at Bothin Marsh (“the project”), which consists of enhancing habitat and realigning a segment of the Bay Trail at Bothin Marsh Open Space Preserve in Marin County (Exhibit 1). The recommended grant is for preparing plans and designs, conducting community engagement, and conducting environmental studies in support of environmental review and permitting for the project.

The Preserve is Marin County Parks’ most visited park unit and the most vulnerable to sea level rise. The Bay Trail segment that runs through the Preserve will be increasingly compromised by tidal flooding. The Preserve’s 67 acres of tidal wetlands are particularly vulnerable to sea level rise due to the relatively low ambient suspended sediment concentrations in this part of Richardson Bay. This limits the ability of the wetland to grow vertically to keep up with sea level rise by capturing sediment. Although the Bothin Marsh complex is relatively small compared to other marsh complexes in the San Francisco Bay, it is the largest remaining tidal marsh habitat in Richardson Bay, supports higher than average biodiversity, and provides critical habitat for wildlife in the region, such as the federally and state endangered Ridgway’s rail, and Point Reyes bird’s-beak, a rare native plant.

The current Bay Trail alignment was constructed on a former railroad levee that substantially alters the hydrologic connectivity between Richardson Bay and South Bothin Marsh, which affects marsh ecological function and habitat quality. Tidal flow into South Bothin Marsh is restricted to a small inlet, which has reduced tidal sediment transport. This has resulted in a sediment-depleted marsh, particularly at higher elevations, accelerating the impact of rising water on the ecosystem. Additionally, the current Bay Trail fragments the connection between North Bothin Marsh and South Bothin Marsh and is a barrier for wildlife movement between the marshes. Maintaining the Preserve’s ecological health and public access amenities, including

protecting tidal wetlands to provide the multiple benefits of habitat, water filtration, and flood protection, requires a comprehensive approach for adapting to sea level rise.

Since 2017 the Golden Gate National Parks Conservancy and Marin County Parks have partnered to commission scientific studies of the project site, coordinate a multi-agency working group, engage the community to develop a shared vision for the Preserve, and refine designs for the project. Conceptual design was funded through a partnership between the Marin Community Foundation and the California State Coastal Conservancy, and the preferred concept was refined into a preliminary design with funding from the Authority. During the preliminary design phase, the project team refined approaches to enhance habitats of tidal marsh and adjacent transition zones and uplands, and to improve the Bay Trail to improve safety, accessibility for people with disabilities, and user experience (Exhibit 2).

The recommended grant is for the following tasks to advance the project:

- **Community and Partner Engagement:** Prepare graphic and presentation materials at key design milestones for use in community events and for coordination with project partners. Community engagement activities would include youth programming, tabling at community events, and hosting presentations and site walks.
- **65% Design:** Advance the 30% level of preliminary designs to 65% level schematic designs, sufficient to initiate the environmental review and permitting processes. The 65% Design Phase would include special studies, design, and engineering for the marsh resilience elements and trail structures. Design drawings and basis of design documentation. Construction quantities and cost estimates.
- **Environmental Review:** Conduct environmental studies and prepare draft project description per California Environmental Quality Act (CEQA) requirements.
- **Regulatory Review:** Conduct environmental studies and coordinate with the Bay Restoration Regulatory Integration Team and other regulatory agencies.

The Parks Conservancy has comprehensive experience restoring shoreline habitat and public recreation sites of similar scale to the Preserve, including its work in partnership with the National Park Service at Crissy Field and Muir Beach. Similar to Bothin Marsh, the Redwood Creek restoration at Muir Beach included restoration of floodplain habitat, process, and function; reconnection of hydrological systems with construction of new creek channels and alignments; and development of a new trail system.

Throughout the planning process, community stakeholders have voiced strong support for the project. The team seeks to retain high levels of participation through the following approaches: events through partnerships with community-based organizations; youth programming; stewardship programs; online and in-person presentations to share key design milestones, updates, and decision points; and communications through the project website, email list, One Tam newsletter, social media, and local media. Supporters of this project include Marin County Supervisor Stephanie Moulton-Peters, San Francisco Estuary Institute, Marin Conservation League, Marin Safe Routes to School, Marin County Bicycle Coalition, Marin Chapter of the California Native Plant Society, Marin Audubon Society, the City of Mill Valley, Tam Valley Neighborhood Response Group, and Marin County Parks (Exhibit 3).

The Preserve will likely lose all its high marsh and portions of mid and low marsh if no actions are taken to improve sediment transport and deposition and to reduce shoreline erosion under

current and near-term sea level rise scenarios. The project site is bordered by highly developed urban areas, and with increased tidal inundation, these wetland areas will likely convert to mudflats or subtidal habitat without the ability to migrate inland or gain elevation. There is also concern that populations of invasive plant species could persist, spread, and jeopardize future restoration because of their ability to colonize and dominate disturbed areas. Removal of priority invasive species at the Preserve has been prioritized by Marin County Parks staff and volunteers.

An important consideration for design of public access improvements is the presence of Sewerage Agency of Southern Marin and Pacific Gas & Electric infrastructure. The project team has had initial conversations with these entities and will continue to coordinate as the planning progresses. The project proposes to re-design of a segment of the Mill Valley-Sausalito Multi-Use Pathway which is a designated segment of the Bay Trail, and incorporate a segment of the adjacent McGlashen Pathway, which would result in an increase in the designated Bay Trail length by approximately 0.5 mile. Representatives from the Bay Trail Program have participated in project workshops and have provided input on project goals and design.

**Site Description:** The 106-acre Bothin Marsh Open Space Preserve is owned and managed by Marin County Parks and Open Space District and is located along the shoreline of upper Richardson Bay and directly adjacent to the City of Mill Valley. Bothin Marsh is the largest remaining tidal wetland in Richardson Bay and includes over 70 acres of tidal wetlands ranging from low marsh to high marsh, 20 acres of subtidal mudflats, and limited transition zone and upland habitats. Richardson Bay is located on the Pacific Flyway, a major migration route for birds. Bothin Marsh was historically formed by the accumulation of sediments deposited from Arroyo Corte Madera del Presidio and Coyote Creek. The watersheds of these two streams, approximately 9 square miles, account for 78% of the total catchment for upper Richardson Bay. Over 32% of the two watersheds are urbanized with infrastructure and homes for about 25,000 people. The Preserve’s trails provide shoreline public access and are part of the regional multimodal transportation network. 1,800 feet of Bay Trail bisects the southern portion of the tidal wetlands and is one of the most actively used trails in Marin County with several thousand recreational and commuter trips per day.

**PROJECT FINANCING**

<b>San Francisco Bay Restoration Authority</b>	<b>\$1,700,000</b>
Golden Gate National Parks Conservancy	\$150,000
Marin County Parks Measure A	\$300,000
<b>Total</b>	<b>\$2,150,000</b>

The table above shows the cost of the tasks the recommended grant would fund. Additional funding of \$1,034,000 would allow the Parks Conservancy to prepare environmental documents and conduct public review pursuant to CEQA, as well as prepare regulatory permit applications and develop a Monitoring and Adaptive Management Plan.

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

See Exhibit 4. Staff Recommendation for Evolving Shorelines Project at Bothin Marsh (October 15, 2021) – Consistency with Authority’s Enabling Legislation, The San Francisco Bay Restoration Authority Act.

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

See Exhibit 4. Staff Recommendation for Evolving Shorelines Project at Bothin Marsh (October 15, 2021) – Consistency with Measure AA Programs and Activities.

**CONSISTENCY WITH MEASURE AA PRIORITIZATION CRITERIA:**

1. **Greatest positive impact.** Restoring, enhancing, and protecting the Preserve’s bayland habitat will increase the climate resiliency of its native wildlife and biological diversity. This includes habitat for special status species such as Ridgway’s rail, California black rail, and Point Reyes bird’s beak. The project would be consistent with the [Baylands Ecosystem Habitat Goals, Science Update 2015](#) strategies of restoring Baylands to full tidal action; improving habitat connectivity and wildlife corridors; and restoring transition zones that can be used as refugia for wildlife as well as marsh migration. The project would plan to restore or enhance approximately 70 acres of tidal marsh complex and approximately 4 acres of upland and transition zone habitat. Removing barriers and creating tidal channels in southern Bothin Marsh and allowing full tidal action into the interior of northern Bothin Marsh would improve the marshes’ ability to migrate with increased sea levels. Restoring and enhancing the tidal marsh complex would increase the marshes health and resiliency to climate change and its ability to potentially reduce flooding impacts to surrounding areas.

In addition, the Bay Trail serves as an important recreational and commuting route, and the section at the Preserve sees the highest usage of any multi-use path in Marin County. It connects Sausalito and Marin City in the south to Tam Valley and Mill Valley in the north, and is a critical, non-motorized transportation corridor. The Bay Trail and the connecting McGlashan Pathway, also located at the Preserve, provide designated safe routes to school for residents of Marin City and Tamalpais Valley. The trails at the Preserve also provide a key linkage to other regional trail networks including the Bay Area Ridge Trail and the California Coastal Trail in the Marin Headlands. The project would decrease flood risk to the trails and assets surrounding the Preserve.

2. **Greatest long-term impact.** With its particularly low elevation, the Preserve serves as a preview of what sea level rise could look like elsewhere in the San Francisco Bay. Lessons learned from the project’s nature-based design and implementation would be applicable to local and regional climate change adaptation and tidal marsh restoration efforts. The project would support wetland habitat that would provide a level of flood protection through 2050 sea level rise projections and potentially longer if sediment transport and deposition goals are achieved. The project would ensure time to create a larger, long-term strategy and not lose existing habitat in the near term.

3. **Leveraging resources and partnerships.** The Golden Gate National Parks Conservancy and Marin County Parks are part of the One Tam partnership, which convenes community members and jurisdictional agencies to support long-term stewardship of Mount Tamalpais. The One Tam partnership has leveraged the financial resources of partner agencies to provide the basis for a detailed landscape level topographic survey, and for hydrologic and hydraulic modeling and analysis of adaptation concepts and flooding scenarios for all Marin County sea level rise projects. The project is also leveraging the work of Marin County Department of Public Works through the SB1 Caltrans Adaptation Planning Grant for the “Highway 1 Corridor in Tam Valley Transportation Resiliency Planning” project. The focus of that project is on addressing flooding concerns at the Highway 1 and 101 corridor which overlaps the Bothin Marsh Project area.
4. **Economically disadvantaged communities.** The underserved community of Marin City is linked to the Preserve by the Bay Trail. Marin County Parks and Parks Conservancy staff are currently participating in the Marin City Stormwater Plan Task Force which is seeking to identify projects to reduce stormwater and sea level rise flooding risk in Marin City. One potential strategy is to improve public ingress and egress to Marin City during flood events which may include improved multi-modal transportation access to the Bay Trail. Staff will continue to engage Marin City community members through the Stormwater Plan process and seek ways to collaborate and deepen community connections.
5. **Benefits to economy.** The Parks Conservancy and Marin County Parks maintain ongoing partnerships with the Conservation Corps of the North Bay (CCNB), a non-profit that hires diverse young adults to gain job skills and work in conservation. To date the CCNB has participated in vegetation management and maintenance at Bothin Marsh. The project would be an ideal continuation of that collaboration and additional elements of the project implementation suitable for CCNB corps members will be identified and planned for as early as possible in the project’s design.
6. **Engage youth and young adults.** Through Parks Conservancy youth programming, every year approximately 48 young adults and 30 middle school aged youth learn about tidal wetland ecology and water quality monitoring, and then work through the planning process to design and model a sea level rise adaptation project based on real conditions at Bothin Marsh. In addition to the Parks Conservancy’s youth programs, past activities focused on youth at Bothin Marsh have included a guided tour and Bothin Marsh Scavenger Hunt, a four-month long StoryWalk exhibit along the Bay Trail for youth and their parents, and distribution of a Marsh Explorer’s Guide and coloring page including versions in Spanish.
7. **Monitoring, maintenance, and stewardship.** Marin County Parks will continue to remove non-native invasive plants in the Preserve in the years leading up to and following construction of the project. Marin County will also continue observation and monitoring of Ridgway’s and black rail populations, and of the rare plant species Point Reyes bird’s-beak. The future implementation phase of the project would include stewardship through citizen science and ongoing maintenance that might include invasive plant removal, plant monitoring, seed collecting, and native planting.

8. **Coastal Conservancy’s San Francisco Bay Area Conservancy Program.** The project meets the criteria of the San Francisco Bay Area Conservancy Program:
  - a. The project is consistent with the recommended actions in the Baylands Ecosystem Habitat Goals and 2015 Update, in that the goal is to design and restore a complete tidal wetland system at Bothin Marsh.
  - b. The project is a good investment of regional resources and serves a regional constituency, as it is consistent with goals of multiple regional and local plans, including the San Francisco Bay Trail Plan/Trail Design Guidelines, the Regional Bicycle Plan for the San Francisco Bay Area as well as the local Tamalpais Area Community Plan, the County Wide Plan, and the Mill Valley General Plan.
  - c. The project benefits will be sustainable or resilient over the project lifespan. The project will allow Bothin Marsh and the Bay Trail to adapt to the impacts of climate change and increased flooding.
  - d. The project delivers multiple benefits and significant positive impact. The project will enhance or restore over 70 acres of bay habitat, and will increase public access benefits by realigning a segment of Bay Trail to reduce flooding impacts.
  - e. The project is planned with meaningful community engagement and broad community support. The Project is set within a highly visited public open space in a community highly vulnerable to the impacts of flooding. This project presents an opportunity to build on community-driven design that has been underway since 2017. Throughout the planning process, community stakeholders have voiced strong support for the project. This support has been documented in the Evolving Shorelines Vision, in surveys, and heard by the project team during the more than 40 workshops, meetings, and community events in the past two years of the preliminary design phase.
  
9. **San Francisco Bay Conservation and Development Commission’s Coastal Management Program.** This project is consistent with several policies of BCDC’s Coastal Management Program, San Francisco Bay Plan:
  - a. Fish, Other Aquatic Organisms and Wildlife, Policy 3: restore the Bay’s tidal marshes to assure benefits of fish, other aquatic organisms and wildlife.
  - b. Tidal Marshes and Tidal Flats, Policy 4: enhance marsh tidal action.
  - c. Tidal Marshes and Tidal Flats, Policy 6: incorporate restoration monitoring.
  - d. Public Access, Policies 4 and 13: plan for public access at the earliest stage and design project to be compatible with restoration and wildlife habitat.
  - e. Climate Change, Policy 3: address the project area’s resilience to climate change, and its capacity to adapt to climate change impacts such as sea level rise.
  - f. Shoreline Protection, Policy 5: incorporate nature-based flood protection techniques into habitat restoration. The project would plan for and test strategies to enhance or create habitats to increase shoreline resilience.
  
10. **San Francisco Bay Joint Venture’s Implementation Strategy.** The project is consistent with the San Francisco Bay Joint Venture’s Implementation Strategy, as it would contribute to the goal of enhancing 4,000 acres of bay habitats in the Central Bay Subregion. The project team presented the project to the San Francisco Bay Joint Venture’s Conservation Committee for adoption at their November 15th, 2023 meeting, and was approved for adoption as a Planning Project on November 28, 2023. The project is listed in EcoAtlas as

the Evolving Shorelines Project: Sea Level Rise Adaptation at Bothin Marsh Open Space Preserve.

**CONSISTENCY WITH AUTHORITY’S INTERIM TRIBAL CONSULTATION**

**POLICY:** Marin County Parks invited several local tribes to consult on the project. Marin County Parks received a letter of interest from one of the tribes and has since provided them with the opportunity to consult on the project and to provide tribal monitors during subsurface exploratory investigations that were conducted in October and November of 2022. The tribe did not respond to the opportunities presented, but Marin County Parks will continue to offer interested tribes the opportunity to participate in design development and implementation of any project that may affect tribal resources and in accordance with all federal and state laws.

**COMPLIANCE WITH CEQA:**

The project is statutorily exempt from the requirement to prepare an environmental impact document under the California Environmental Quality Act Guidelines, California Code of Regulations, Title 14, Section 15262, because the project involves planning for possible future actions which have not been approved, adopted, or funded. In addition, the project is categorically exempt under California Code of Regulations, Title 14, Section 15306, because the project involves basic data collection, research, and resource evaluation activities which do not result in a serious or major disturbance to environmental resources. Upon approval of the project, staff will file a Notice of Exemption.