SAN FRANCISCO BAY RESTORATION AUTHORITY

Staff Recommendation
June 7, 2019

Tiscornia Marsh Restoration and Sea Level Rise Adaptation Planning Project

Project No. RA-011
Project Manager: Linda Tong

RECOMMENDED ACTION: Authorization to disburse up to $968,916 to Marin Audubon Society to prepare technical studies, refine designs, and conduct environmental review and public outreach for restoration and sea level rise adaptation actions at Tiscornia Marsh. The restoration and adaptation actions are expected to expand marsh habitat, increase flood protection, and provide public access at the mouth of the San Rafael Canal in Marin County.

LOCATION: Tiscornia Marsh; City of San Rafael; 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; Integrated Flood Protection Program; Shoreline Public Access Program

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EXHIBITS

Exhibit 1: Project Location and Site Map

Exhibit 2: Project Designs and Photographs

Exhibit 3: 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 § 66700:

"The San Francisco Bay Restoration Authority hereby authorizes the disbursement of an amount not to exceed nine hundred sixty-eight thousand, nine hundred and sixteen dollars ($968,916) to Marin Audubon Society to prepare technical studies, refine designs, and conduct environmental review and public outreach for restoration and sea level rise adaptation actions at Tiscornia Marsh ("the project"). The restoration and sea level rise adaptation actions are expected to expand marsh habitat, increase flood protection, and provide public access at the mouth of the San Rafael Canal in Marin County (Exhibit 1).

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:

a. A detailed work program, schedule, and budget.

b. Names and qualifications of any contractors to be employed in carrying out the project.

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 authorize a grant of up to nine hundred sixty-eight thousand, nine hundred and sixteen dollars ($968,916) to Marin Audubon Society (MAS) to prepare technical studies, refine designs, and conduct CEQA review and public outreach for marsh restoration and sea level rise adaptation actions at Tiscornia Marsh (the "project"). The restoration and sea level rise adaptation actions are expected to expand marsh habitat, increase flood protection, and provide public access at the mouth of the San Rafael Canal in Marin County (Exhibit 1).

The 26-acre site consists of subtidal mudflats, baylands (both tidal marsh and diked wetlands), and a narrow band of transition habitat on levee slopes. Despite its small size, Tiscornia Marsh supports endangered California Ridgway's rail. The levee behind the marsh, owned by MAS, has low spots and over-steepened embankments and is inadequate overall, contributing to the surrounding Canal community's risk of flooding caused by erosion and overtopping. MAS owns the levee and the 20-acre Tiscornia Marsh, and the City of San Rafael, an active partner in the project, owns the remaining six acres of diked wetlands included in the project.

The marsh restoration and sea level rise adaptation actions are needed to arrest the extensive loss of tidal marsh due to ongoing erosion and to help reduce flood risk for the Canal community in San Rafael. The eroding marsh and lack of functional transition zone greatly increase the vulnerability of the endangered species habitat to loss. The restoration and adaptation actions are expected to use nature-based techniques to restore habitat and protect the shoreline and adjacent communities from sea-level rise. The project could serve as a model for the next generation of marsh restoration by demonstrating how dredged sediment can be used to enhance and expand an existing marsh and how a cobble beach can protect the edge of the newly expanded marsh from erosion (Exhibit 2).

The project includes preparation of plans to protect and restore tidal marsh habitat, open diked marsh to tidal action, raise and widen the adjacent levee, create an ecotone (i.e., a transition zone between tidal marsh and upland habitat) as part of the levee, and add a segment of Bay Trail. The restoration plans will provide for expanded habitat for the endangered California Ridgway's rail, salt marsh harvest mouse and other species, while at the same time attenuating wave action to protect the adjacent levee and improve water quality. The project will evaluate the feasibility, effectiveness, and potential environmental effects of raising the entire levee to a uniform elevation (13 feet NAVD88) to provide increased and more consistent flood protection. The project will also evaluate the section of levee along the canal being set back to the inland side of the diked marsh to allow for restoring tidal marsh, and the section of levee along San Rafael Bay, next to existing tidal marsh, being widened to provide transition zone and high tide refugia habitat for endangered species and other wildlife. The project will benefit the community by advancing planning to improve protection from flooding as sea level rises, while also improving public access, including planning for the construction of a Bay Trail segment on top of the levee.

The project is expected to evaluate feasibility and environmental effects of various potential improvements including:

- Expanding the existing marsh (up to 10 acres) through placement of beneficially reused dredged material;
- Restoring the six-acre diked marsh to tidal action;
- Constructing a new setback levee on the City's property;
- Improving an additional 2,000 feet of the existing levee by raising it and incorporating an ecotone slope;
- Creating a coarse beach along the eastern marsh boundary to protect against marsh erosion and trap sediments;
- Creating a living seawall/rock jetty along the north marsh boundary in response to boat wake in the San Rafael Canal;
- Constructing a segment of the Bay Trail on the new setback levee; and
- Providing additional recreation amenities, which may include interpretive signage, benches, picnic tables, and a bicycle rack.

Building on the conceptual design (Exhibit 2) developed by MAS with funding from the Marin Community Foundation (MCF), the project will develop a preliminary design that is based on thorough technical and ecological analyses. Project components are as follows:

- Produce a set of technical studies that will include topographic mapping, geotechnical investigation, detailed wave analysis, ecological/biological surveys, and comparison with reference sites.
- Using the above studies, develop the preliminary design (approximately 30% complete).
- Conduct CEQA analysis. A Focused Environmental Impact Report will be prepared with the City of San Rafael Community Development Department functioning as the lead agency.

- Consult with regulatory agencies to avoid impacts where possible, and to inform project design and CEQA analysis.
- Conduct community engagement throughout the project, building on momentum already started under the Conceptual Design Phase. MAS will continue to partner with Shore Up Marin to conduct public outreach. Outreach will include community engagement meetings with groups and individuals and media productions about the project and sea level rise.

With its long history advocating for wildlife and implementing successful multi-benefit marsh restoration projects, MAS is well suited to carry out the proposed project. MAS has successfully restored/enhanced more than 1,000 acres in 18 projects. Restoration projects have been of tidal marsh, seasonal wetland and transitional ecotone habitats and have ranged from a few acres to more than 300 acres. MAS is an active participant in the design, environmental review and permitting of its restoration projects, and hires engineers and biologists with extensive experience restoring marshes. MAS contracted Environmental Science Associates (ESA) to prepare the initial conceptual design funded by MCF, and ESA would continue with this second phase. ESA staff includes environmental engineers, biologists and other experts, many with long experience restoring marshes and preparing environmental documents.

The project has broad public support (Exhibit 3). The San Rafael City Council unanimously adopted a resolution supporting the application for Measure AA funds, in accordance with the City's Park and Recreation Commission's recommendation. During the MCF grant period, MAS conducted two public meetings and a walking tour to explain sea level rise and present project alternatives, and public input was supportive of the conceptual design. MAS will continue to partner with Shore Up Marin to hold community meetings related to CEQA and progress of the design. The project will also support the City and the nonprofit organization Friends of San Rafael in their efforts to advance the Community Center area as a community gathering place during emergencies.

Site Description: The site is on the south bank of the San Rafael Canal, and consists of MAS's 20-acre tidal marsh, the City's six-acre diked marsh and small parcel to the west, and a levee owned by MAS (levee segment south of the tidal marsh) and by the City (the rest of the levee within the project site). The levee surrounds the City's diked marsh, Schoen Park, a soccer field and the Albert J. Boro Community Center and park. The eastern end of MAS's levee segment connects with the northern terminus of the Bay Trail. The western end of the City's levee segment connects with the Albert J. Boro Community Center park.

The levee within the project area has an uneven dirt surface. All elevations are below 12 feet NAVD88 with the lowest sections at 9-9.5 feet NAVD88 on MAS's property and 7.5-8 feet NAVD88 on City property. Top widths vary from 10 to 16 feet. The entire levee is steep sided and vegetated primarily with non-native grasses and other ruderal vegetation, except for the east-facing section which was planted and is maintained by Students and Teachers Restoring a Watershed (STRAW), a conservation education program of Point Blue Conservation Science.

Approximately 8 acres of remnant marsh remain on the MAS property, a major reduction from 1987. The marsh vegetation is primarily native mid-to high-marsh plants, pickleweed, cordgrass and salt grass. For such a small area, the marsh supports a well-developed channel system with

overhangs that California Ridgway's rail use for protective cover as they move within the marsh to forage. American avocets and black-necked stilts, herons and egrets are often seen foraging. During winter, MAS's waters provide habitat for migratory shorebirds that forage when mudflat is exposed, for foraging and resting waterfowl, and for diving birds at high tides. Gulls use shallow water in most seasons. The waters outboard of the marsh are often used by rafting diving ducks, primarily scaup and canvasback. The marsh and its channels are also foraging and nursery habitat for native fish, including young anadromous fish as they migrate out to the Pacific Ocean from Delta habitats. The City's diked marsh is at approximately the same elevation as the outboard tidal marsh, but has no channel system and minimal wildlife use.

PROJECT FINANCING

San Francisco Bay Restoration Authority	$968,916
Others	$0
Project Total	**$968,916**

MAS and the City of San Rafael will provide in-kind volunteer and staff time totaling an estimated $75,900 to conduct overall project management, CEQA analysis, and project design.

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

The proposed project is consistent with Government Code Section 66704.5 of the Authority's enabling legislation, and therefore is eligible for grant funding from the Authority. Consistent with Government Code Section 66704.5(a), the project is within the Authority's jurisdiction, as the mouth of the San Rafael Canal is a shoreline parcel in the San Francisco Bay Area but not in the Delta primary zone. Marin Audubon Society, a 501(3)(c) nonprofit organization, is an eligible grantee, as defined by Section 66704.5(a). The project involves planning for the restoration and expansion of tidal wetlands; enhancement of a shoreline levee and creation of an ecotone transition zone; and improvement of public access through adding a segment of Bay Trail, making it an eligible project as defined in Section 66704.5(b). Funding this planning project is consistent with Section 66704.5(e), which allows the Authority to award grants for "all phases of planning, construction, monitoring, operation, and maintenance" of eligible projects.

CONSISTENCY WITH MEASURE AA PROGRAMS AND ACTIVITIES:

The proposed project is consistent with the programs and activities of Measure AA, as outlined below:

The project would support the *Safe, Clean Water and Pollution Prevention Program's* purpose of providing clean water for fish, birds, wildlife and people, through planning for the restoration of wetlands that provide natural filters and remove pollution from the Bay's water.

The project would help implement the *Vital Fish, Bird and Wildlife Habitat Program's* purpose of significantly improving wildlife habitat to support and increase vital populations of fish, birds, and other wildlife in and around the Bay because it would produce a plan for restoring wetlands and shoreline habitats to benefit wildlife, including shorebirds, waterfowl and fish. The project would support this program's purpose by planning for enhancing habitat in a shoreline park.

The project would be consistent with the *Integrated Flood Protection Program's* purpose because it would plan for providing nature-based flood protection through wetland and habitat restoration along the Bay's edge and at a creek outlet that flows to the Bay. The project would also help implement this program by planning for improving a flood protection levee that is a necessary part of wetland restoration activities, to protect existing shoreline communities and infrastructure.

The *Shoreline Public Access Program'*s purpose is to enhance the quality of life of Bay Area residents through improved public access, as part of and compatible with wildlife habitat restoration projects in and around the Bay. The project would support implementation of this program by planning to construct a new segment of Bay Trail to increase public access along the shoreline.

CONSISTENCY WITH MEASURE AA PRIORITIZATION CRITERIA:

1. **Greatest positive impact.** Tiscornia Marsh is one of the few remaining marshes along the San Rafael Bayfront. The proposed project would develop a preliminary design for new, high quality tidal marsh and high tide refugia habitat for wildlife, especially for two endangered species (California Ridgway's rail and salt marsh harvest mouse), migratory shorebirds, and other species that depend on the marsh. Expanded marsh vegetation will enrich and increase the productivity, and improve the quality, of the waters of San Rafael Bay and the North Bay. The project would also fill a major gap in the City of San Rafael's flood protection plans. Adjacent to the shoreline is Marin's largest urban area, with 50,000 residents living at low lying elevations. The levee extending from the Canal Area to the Richmond-San Rafael Bridge including Interstate Highway 580 is the primary flood protection for San Rafael. Plans to improve the levee and the marsh will protect Marin County's largest underserved community and largest city from levee overtopping and flooding, while improving public access by expanding the Bay Trail.

2. **Greatest long-term impact.** The project could serve as a model for beneficial reuse of dredged sediments to enhance marshes in the Bay, as a key sea-level rise adaptation strategy. This could help inform future projects seeking to restore tidal marsh habitat, stabilize shorelines, sequester carbon, and beneficially reuse material dredged from nearby marinas or other local dredging projects to restore marsh. The project goals include designing the levee improvements to achieve protection for a 100-yr flood until 2050-2070 using the OPC (2018) medium-high risk curves for sea level rise. In the future, the project's improved levee could be further modified to address climate variability and rising tides.

3. **Leveraging resources and partnerships.** The proposed project would strengthen and expand partnerships with the City of San Rafael; Marin County Public Works through its BayWAVE program; and Shore Up Marin, a multi-racial environmental coalition that

advocates for equitable inclusion of low-income communities in planning and community preparedness. New partners include the San Francisco Bay Trail, a project of the Metropolitan Transportation Commission; STRAW, which works with local school children to create transition zone habitat; and the Friends of San Rafael, which aims to establish a community hub in a multi-ethnic, low-income community for long-term city adaptation planning.

4. **Economically disadvantaged communities.** The most immediate and primary beneficiaries of this project will be the adjacent Canal community, which would be among the first to flood with overtopping of the levee adjacent to Tiscornia Marsh. The Canal population is diverse, with Latino, Asian, Pacific Islander, African-American and Middle Eastern, English speaking and non-English speaking residents. The Canal Area has a median household income less than 60% of the California median household income and is considered a severely disadvantaged community. The Canal Area also supports businesses and services essential for residents with limited mobility. This project would allow for the local streets and sidewalks to be protected from flooding, enabling the residents and businesses of the Canal Community to continue thriving in the community.

5. **Benefits to economy.** The Canal community is a vital part of San Rafael and Marin County's economy, supporting many local businesses and the North Bay Conservation Corps. Increasing flood protection of the area would benefit Canal Area residents who are part of the regional workforce, and Canal Area workers who come from outside the community. If the Canal community floods, infrastructure, roads, drainage systems and other utilities are at risk of flooding. In addition, the project would provide professional employment in designing the marsh and levee. Potential construction during future project phases would also provide employment opportunities.

6. **Engage youth and young adults.** MAS is working with STRAW, an organization that partners with local school children to restore transition habitat, to develop an ecotone at MAS's levee segment adjacent to Tiscornia Marsh. MAS plans to involve the youth at nearby Bahia Vista School through media projects about the restoration project, and to continue an ongoing partnership with the local community organization, Shore Up Marin.

7. **Monitoring, maintenance, and stewardship.** Monitoring, maintenance and stewardship would be more specifically developed and incorporated into the construction phase of the project. MAS and the City would partner in maintaining and monitoring their portion of the property. Monitoring results would be regularly reported and shared.

8. **Coastal Conservancy's San Francisco Bay Area Conservancy Program.** The proposed project is consistent with the Conservancy's San Francisco Bay Area Conservancy Program's Criteria:
    a. The project is supported by local and regional plans including: *San Rafael General Plan 2020, Climate Change Sea Level Rise San Rafael-White Paper, Marin County's BayWAVE Program, USFWS Recovery Plan for Tidal Marsh Ecosystems for Northern California, Comprehensive Conservation and Management Plan 2016,*

The Baylands and Climate Change What We Can Do (Baylands Ecosystem Habitat Goals Science Update 2016), San Francisco Bay Trail Guidelines, and the *Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan)*;

b. The proposed project serves a regional constituency. Construction of a trail segment on the levee improvement would expand the Bay Trail, which continues south to the Richmond-San Rafael Bridge. The Bay Trail serves the entire San Francisco Bay, connecting communities to parks and open spaces, and providing an alternative commute corridor. This proposed segment has the potential to directly serve the Canal Area, an economically disadvantaged community adjacent to the project;
c. The proposed project can be implemented in a timely way. The project can be implemented as soon as funding is secured through the proposed authorization;
d. The proposed project provides opportunities for benefits that could be lost if the project is not quickly implemented. The impacts to the marsh and levee increase as extreme weather, higher tides and storm surges continue and increase. If a remedial plan is not created habitat and flood control benefits of the marsh and habitat, and recreational benefits could be lost due to marsh and levee erosion, marsh flooding, and levee overtopping.

9. **San Francisco Bay Conservation and Development Commission's Coastal Management Program.** The project is consistent with multiple policies of BCDC's San Francisco Bay Plan, part of its Coastal Management Program:

   Tidal Marshes and Mudflats Policy 4: Restoring former tidal marshes that have been diked from the Bay;
   Tidal Marshes and Mudflats Policy 6: The project design will be based on analysis of fish and wildlife, sediment erosion and accretion, and resilience to sea level rise and climate change;
   Tidal Marshes and Mudflats Policy 8: Minor amounts of fill may be authorized based on scientific ecological analysis and consultation with relevant state and federal agencies is proposed;
   Public Access Policy 4: Public access will be sited, designed and managed to prevent significant adverse effects on wildlife;
   Public Access Policy 13: Public access is being integrated early into the planning and design of a habitat restoration project;
   Dredging Policy 11: Detailed site-specific studies on the site's physical conditions, biology and various engineering aspects of the project are being conducted to support a project in which the use of dredged material is being considered as a means to protect and enhance the habitat.

10. **San Francisco Bay Joint Venture's Implementation Strategy.** The Tiscornia Restoration project is fully consistent with the San Francisco Bay Joint Venture's goals and implementation strategy. Tiscornia Marsh has been on the Joint Venture's Project list as Tier 1 for several years. The project has been significantly expanded since it was approved by the Joint Venture because of increased awareness of impacts of sea-level rise, advances made with the MCF grant and opportunities that have arisen from MAS's partnership with the City.

COMPLIANCE WITH CEQA:

The proposed project is statutorily exempt from the requirement to prepare an environmental document under the California Environmental Quality Act and categorically exempt from CEQA under 14 Cal. Code of Regulations Sections 15262 and 15306, as it only involves preparation of feasibility and planning studies for possible future actions that have not yet been approved, adopted or funded, and basic data collection, research and resource evaluation activities that will not result in serious or major disturbance to an environmental resource. The planning studies will consider environmental factors. Staff will file a Notice of Exemption upon approval of the proposed project.