

SAN FRANCISCO BAY RESTORATION AUTHORITY

Staff Recommendation

December 13, 2024

**SCIENCE ELEMENTS OF THE WETLANDS REGIONAL MONITORING PROGRAM
PHASE 2: MONITORING IMPLEMENTATION**

Project No. RA-032

Project Manager: Erica Johnson

RECOMMENDED ACTION: Authorization to disburse up to \$2,990,000 to the Aquatic Science Center to implement the Wetlands Regional Monitoring Program’s Monitoring Plan, consisting of collecting, analyzing, managing, and sharing wetlands data; developing additional standard operating procedures; and engaging the public, interested parties and groups, and regulatory agencies in the San Francisco Bay region.

LOCATION: All 9 Bay Area Counties, all Measure AA Regions.

MEASURE AA PROGRAM CATEGORY: Safe, Clean Water and Pollution Prevention Program; Vital Fish, Bird and Wildlife Habitat Program; Integrated Flood Protection Program.

EXHIBITS

Exhibit 1: [December 10, 2021 Staff Recommendation](#)

Exhibit 2: [Wetland Regional Monitoring Program Priority Monitoring Site Network Executive Summary](#)

Exhibit 3: [San Francisco Estuary Wetland Regional Monitoring Program 2024 Monitoring Plan Summary](#)

Exhibit 4: [Project Letters](#)

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 two million nine hundred and ninety thousand dollars (\$2,990,000) to the Aquatic Science Center (the grantee) to implement the Wetlands Regional Monitoring Program’s Monitoring Plan consisting of consisting of collecting, analyzing, managing, and sharing wetlands data; developing additional standard operating procedures; and engaging the public,

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interested parties and groups, and regulatory agencies in the San Francisco Bay region (the project).

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.
4. Evidence that all permits and approvals required to implement the project have been obtained.
5. Evidence that the grantee has entered into agreements sufficient to enable the grantee to implement, operate, and maintain the project.

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 recommend that the San Francisco Bay Restoration Authority (Authority) authorize a grant of \$2,990,000 to the Aquatic Science Center (ASC) to implement the Wetland Regional Monitoring Program's Monitoring Plan (Monitoring Plan), consisting of collecting, analyzing, managing, and sharing wetlands data; developing additional standard operating procedures; and engaging the public, interested parties and groups, and regulatory agencies in the San Francisco Bay region (the project). The ASC is a joint powers authority staffed by the San Francisco Estuary Institute.

The San Francisco Estuary Wetland Regional Monitoring Program (WRMP) is a collaboration of diverse and far-reaching organizations and public entities representing major partners in wetland restoration, science, and community engagement. These partners have worked together since 2016 to support a regional goal to improve understanding of wetland conditions and landscape-scale changes that impact wetland conditions in the San Francisco Bay, such as sea level rise, and to decrease the burden of monitoring for individual projects. The WRMP has developed a science framework, governance structure, and key management questions to guide their work. WRMP participants include regulators, funders, non-profits, academics, scientists, community representatives, and tribal representatives. More information on the WRMP's background and framework can be found in the Project Summary section of Exhibit 1.

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At the Authority’s December 10, 2021 meeting, the Authority authorized funding to ASC to implement the Science Elements of the WRMP (Exhibit 1). The WRMP developed the Priority Monitoring Site Network (Exhibit 2) and four standard operating procedures (SOPs) for monitoring and analyzing wetland condition indicators (i.e., Geospatial, Fish and Fish Habitat, Vegetation, and Hydrogeomorphic). From the SOPs, the WRMP identified three priority monitoring indicators from which to collect data to better understand wetland habitat extent (Baylands Habitat Change Map), characterize wetland health (California Rapid Assessment Method for wetlands), and assess vulnerability of wetlands to sea level rise (Sediment Elevation Table Marker-Horizons). In 2023, the Baylands Habitat Change Map was completed with regional data through 2020, and the WRMP worked with Authority staff to provide four new habitat metrics in the Authority’s 2023-24 Annual Report and Project Tracker Dashboard based on analysis of the habitat mapping effort. In 2024, the WRMP published the Monitoring Plan. The Monitoring Plan defines regional, sub-regional, and project scale monitoring activities to be implemented in the 1 to 2-year time frame and the 3 to 5-year time frame (Exhibit 3). The 1 to 2-year time frame describes some work that is already underway with the three priority monitoring indicators. The rest of the work under the first Authority grant includes the monitoring of the remaining two priority indicators at the six priority marsh complexes identified in the WRMP Priority Monitoring Site Network. The work under the first Authority grant is anticipated to be completed in June of 2025.

The proposed project will build upon the previous work described above by implementing the monitoring activities described in Monitoring Plan that was developed under the first Authority grant. These activities include preparing an updated (2025) Baylands Habitat map, and an elevation map, vegetation map, and shoreline change map. Subregional monitoring activities include water surface elevations and rates of change, surface water salinity, suspended sediment concentrations, and dissolved oxygen. Site scale monitoring includes the California Rapid Assessment Method of wetlands, sediment accretion and erosion, elevation transects, vegetation transects, wildlife monitoring (fish, birds, other mammals), and carbon sequestration. The proposed project will occur over a three-year period (2025-2028) and include the following specific tasks:

3. **Program Management and Governance:** The proposed project will support the work of the WRMP’s two lead scientists to implement tasks 2 through 5 (below); manage the WRMP governing bodies and work groups; develop additional SOPs, such as for birds and other mammals; and adapt documents and plans to address any unforeseen challenges or opportunities.
4. **Wetland Monitoring Implementation:** The WRMP will implement the Monitoring Plan through both time frames described in the plan (1 to 2 year and 3 to 5 year) and collect and analyze data in accordance with the SOPs developed for Geospatial, Fish and Fish Habitat, Vegetation, and Hydrogeomorphic monitoring and any additional SOPs to be developed by the WRMP in task 1. WRMP staff will interpret and share data widely with the region’s interested parties and groups. As additional habitat metrics are developed, the WRMP will

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also work with Authority staff to support the Authority’s reporting on habitat metrics and seek alignment where possible.

5. **Data Management:** The WRMP will develop a data storage and management system and maintain an online platform to share data with the public. The WRMP will maintain the WRMP website and post key reports, analysis, and workshop training for data tools on the website.
6. **Regulatory Alignment:** The WRMP will continue to engage regulatory agencies to improve coordination between agencies and restoration practitioners regarding permit requirements. To help meet the needs of regulatory agencies, the WRMP will increase access to wetland monitoring data (see item 3, Data Management); standardize data collection approaches (see item 2, Wetland Monitoring Implementation above); and, when possible, collect data from projects implementing new marsh restoration techniques. The WRMP will continue to coordinate with the Bay Restoration Regulatory Integration Team to create opportunities to streamline processes and address challenges.
7. **Communications and Public Engagement:** The WRMP will produce information products, such as maps, graphs, conceptual diagrams, and reports that help visualize, interpret, and understand data outcomes of the monitoring. These materials will be shared with interested parties and the public to raise awareness of the region’s wetlands, the benefits they provide, and how they are changing over time. The WRMP will also write technical reports and present information at conferences and workshops to share the practical implications and lessons learned from long-term monitoring and wetland restoration.

Site Description: Wetland habitat in the San Francisco Estuary.

PROJECT FINANCING

San Francisco Bay Restoration Authority	\$2,990,000
U.S. Environmental Protection Agency (EPA)	
San Francisco Bay Geographic Program	\$17,000,000
U.S. EPA Wetland Program Development Grant	\$498,762
Other Local and State Funds	\$2,928,000
Project Total	\$23,416,762

The WRMP is seeking federal funds from two U.S. EPA grant programs:

The WRMP is on their fourth phase for the U.S. EPA Wetland Program Development Grant. The \$498,762 of funding will support efforts to advance regulatory alignment, support community participation in WRMP work groups, and produce maps and other visual products.

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U.S. EPA San Francisco Bay Program Office anticipates awarding \$17 million to WRMP to implement regional monitoring, data collection and management, analysis, communication and engagement of interested parties and groups regarding data products, and support the advancement of social equity indicators and community participation. These funds are expected to be awarded in two disbursements, the first (\$10 million) supporting WRMP work from the end of 2024-2026 and the second (\$7 million), which is more tentative, to support WRMP work from end of 2026-2029. Non-federal match, such as funds from the Authority, are critical to being able to access the second, anticipated disbursement of \$7 million to open a total of \$17 million dollars for the project.

Other local and state funds will come from the following sources who are providing match for federal fund sources or in-kind services: State Revolving Fund: \$50,000, State Coastal Conservancy (monitoring at South Bay Salt Ponds Project): \$400,000, San Francisco Bay Regional Water Quality Control Board: \$100,000, Alameda County Mosquito Abatement District: \$2,400, Save The Bay: \$13,934, Point Blue Conservation Science (bird monitoring): \$311,000, University of California, Davis (fish monitoring): \$799,058, Bay Area Toll Authority (Highway 37 project monitoring): \$891,950, HoneyHive (youth wetland education program): \$360,000. The sum total of these sources is \$2.928 million.

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

The proposed project is consistent with Government Code Section 66704.5(a) of the Authority’s enabling legislation, which enables the Authority to award grants to ASC because it is a public or private entity (joint powers authority), and the proposed project will take place in counties within the Authority’s jurisdiction. In accordance with Section 66704.5(b), the proposed project is eligible for funding because it will help 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, by improving restoration project success through use of wetland data that is collected and analyzed by scientists. In accordance with Section 66704.5(e), the funds may be used to support all phases of planning, construction, monitoring, operation, and maintenance of eligible projects. The proposed project will monitor existing restoration projects and can be used to plan future restoration projects.

CONSISTENCY WITH MEASURE AA PROGRAMS AND ACTIVITIES:

The proposed project is expected to benefit all four program areas of the Authority because it includes monitoring indicators of wetland conditions, such as water quality, wildlife populations, quality and size of habitat, wetland elevations and wave attenuation, and public access to shoreline parks and open space (using other funds). These examples align with the goals of the Safe, Clean Water and Pollution Prevention, Vital Fish, Bird and Wildlife Habitat, Integrated

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Flood Protection, and Shoreline Public Access Programs. More information about how the proposed project aligns with Authority program goals can be found in Exhibit 1.

CONSISTENCY WITH MEASURE AA PRIORITIZATION CRITERIA:

8. **Greatest positive impact.** The proposed project will improve baseline wetland monitoring data by ensuring monitoring is consistent and comparable across data, expanding and improving access to data, and increasing knowledge gained from regional monitoring. The proposed project will support the Adaptive Management Plan of the South Bay Salt Ponds Restoration Project, Suisun Marsh Habitat Management, Preservation and Restoration Plan, Sonoma Creek Baylands Strategy, and Novato Creek Baylands Vision because each of the sites (South Bay Salt Ponds in Santa Clara and Alameda counties, Novato Creek Baylands, Sonoma Creek Baylands, and Suisun Marsh) are part of the six priority monitoring areas for the WRMP. The proposed project will monitor vegetation, wildlife, hydrodynamic, and geomorphic indicators in those and other areas. The monitoring and subsequent data analysis will support each of those plans by collecting ecological and physical data, documenting change over time, informing adaptive management plans, and/or supporting restoration management decision-making.

The proposed project also supports and implements the goals and strategies of the Baylands Ecosystem Habitat Goals, Science Update 2015, because the project seeks to understand changes to habitat, impacts of climate change over time, progress toward increasing wetland habitat acreage, the drowning or accretion of marshes and other key physical drivers of change. Strategy #19 calls for the investment in planning, policy, research and monitoring which the project is implementing for the region.

Lastly, the project advances the 2022 Estuary Blueprint Action 8 which calls for the implementation of the WRMP to help local, regional, state, and federal agencies evaluate the effectiveness of wetland restoration projects and create a better understanding of landscape-scale drivers that impact mature and restored marshes, especially in the presence of climate change.

9. **Greatest long-term impact.** The WRMP established a monitoring network and SOPs such that monitoring implementation can be standardized, repeated, and capture change over time. The information will be valuable for understanding how projects fare under various climate change stressors. See Exhibit 1 for more information on WRMP's long-term impact.

10. **Leveraging resources and partnerships.** See Project Financing section above.

11. **Economically disadvantaged communities.** Supported by other funding, WRMP established the People and Wetlands workgroup to develop social equity indicators to measure the benefits and impacts of wetland projects to communities, and the distribution of those benefits and impacts. The work groups include representatives from communities vulnerable to impacts of climate change due to income, historic underinvestment of infrastructure, and disproportionate environmental burden. In December of 2023, the workgroup proposed eight new indicators and a special study for inclusion into the WRMP science framework. Indicators include demographic representation, such as in wetland decision-making, visitation and stewardship, and distribution of wetland project benefits, such as access to shoreline open space and parks, flood risk, and environmental quality.

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While this aspect of the WRMP is not funded by the Authority, WRMP and Authority staff have been working together to align social equity metrics.

12. **Monitoring, maintenance, and stewardship.** The proposed project will fund three years of planning and implementation of regional monitoring. Monitoring efforts will be scaled up overtime as the WRMP increases capacity and lessons learned from the pilot monitoring occurring now. For more information on how the WRMP will improve monitoring and inform stewardship in the region, see Exhibit 1.
13. **Coastal Conservancy's San Francisco Bay Area Conservancy Program.** The proposed project is consistent with Section 31163(c)(1)-(2), (5) of the Public Resources Code, regarding the San Francisco Bay Area Conservancy Program, because the WRMP is supported by adopted local or regional plans (see Greatest Positive Impact section above), serves constituents in the San Francisco Bay region, and includes matching funds from other sources (see Project Financing above). Due to the match requirement of the federal funds being leveraged by this project, the funding from the Authority is critical to accessing the full budget for monitoring implementation. In addition, it is critical to begin collecting regional data to help inform restoration project decision-making and natural resource management in anticipation of climate change impacts that are upon the region. There have been substantial planning and fundraising efforts for the WRMP that have prepared the program and staff for implementation. The WRMP has established a science framework, governance structure, monitoring site network, and standardized monitoring protocols for key indicators. The project can be implemented as soon as funds become available.
14. **San Francisco Bay Conservation and Development Commission's Coastal Management Program.** The project is consistent with the San Francisco Bay Conservation and Development Commission's Coastal Management Program as described in December 10, 2021, staff recommendation (Exhibit 1).
15. **San Francisco Bay Joint Venture's Implementation Strategy.** The project is consistent with the San Francisco Bay Joint Venture's Implementation Strategy as described in December 10, 2021, staff recommendation (Exhibit 1).

CONSISTENCY WITH AUTHORITY'S INTERIM TRIBAL CONSULTATION POLICY:

The WRMP conducted outreach to Tribes to solicit their participation in the WRMP's Steering Committee and social equity (People and Wetlands) workgroup. For the social equity work group, in particular, the WRMP collaborated with Authority staff in 2023 to reach out to the tribes of the Bay Area including those on the Californian Native American Heritage Commission list, those that participated in the 2022 SFEP Regional Water Needs Assessment process, and tribal organizations that are known to have interest in the San Francisco Bay Region. There are currently two Tribal organizations participating in the WRMP Committees and work groups and they include a representative from the Confederated Villages of Lisjan and the Association of Ramaytush Ohlone.

COMPLIANCE WITH CEQA:

The proposed project consists of monitoring wetlands (e.g., collecting, analyzing, and managing data), sharing data, developing protocols, engaging regulatory agencies and other interested

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parties and groups, and similar activities. These activities are exempt under California Environmental Quality Act Guidelines, pursuant to Title 14, California Code of Regulations, Sections 15061(b)(3) (common sense exemption), 15262 (feasibility and planning studies), and 15306 (information collection); or do not constitute a “project” because the activities will not result in a direct or reasonably foreseeable indirect physical change in the environment. Upon approval of the project, the Authority will file a Notice of Exemption.