SAN FRANCISCO BAY
RESTORATION AUTHORITY

SAN FRANCISCO BAY RESTORATION AUTHORITY MEASURE AA
GRANT APPLICATION – COVER PAGE

CONTACT INFORMATION			
Organization	City of Berkeley		
Contact Person	Nelson Lam	**Phone**	(510)981-6395
Email	NeLam@CityofBerkeley.info		
Address	1947 Center Street, 5th floor Berkeley, CA 94704		
Partner Entities	Berkeley Paddling & Rowing Club, Bay Area Outreach and Recreation Program, Youth Musical Theater Company, San Francisco Estuary Institute		

PROJECT INFORMATION			
Project Name	Berkeley Aquatic Park Estuarine Habitat Restoration, Resilience, and Public Access Plan		
Summary	Conduct feasibility studies, form a Technical Advisory Group, prepare an Estuarine Habitat Restoration & Resilience Plan, and prepare a Monitoring Plan. The Habitat Plan will summarize opportunities for projects that will protect, restore, and enhance aquatic and upland habitat at Aquatic Park. The feasibility studies will address strategies for: managing the quality & quantity of stormwater inflow; enhancing connectivity between Bay and estuarine refugia and potential		
Total Project Cost	**$** $1,026,950	**Funding Request**	**$** 897,000
Project Start Date	June, 2021	**Project End Date**	June, 2025
Measure AA Program Areas (check all that apply)	☑ Clean Water ☑ Habitat ☑ Flood Protection ☑ Public Access		
Project Phase (check all that apply)	☐ Acquisition ☑ Planning; Design ☐ Permitting ☐ Construction/Implementation ☐ Monitoring; Maintenance ☐ Other: _____		
CEQA	What are the CEQA requirements for your project? ☑ Not a project under CEQA ☐ Exempt from CEQA (statutorily or categorically) ☐ ND ☐ MND ☐ EIR If required, has the CEQA document been approved and filed? ☐ Yes ☐ No If yes, date filed; If no, expected filing month/year: _____		

PERFORMANCE MEASURES Enter data relevant to project - if not applicable, enter "0"			
Acres of beach habitat to be restored, maintained and/or enhanced	0	**Acres of managed ponds to be maintained and/or enhanced**	0
Acres of tidal marsh complex (Includes tidal marsh, and associated tidal flat and shallow bay) to be restored	0	**Acres of other bayland habitat to be restored**	0
Acres of seasonal wetlands to be restored, maintained and/or enhanced	1.8	**Acres of other subtidal habitat to be restored**	68
Acres of shellfish beds to be restored	0	**Acres of submerged aquatic vegetation to be restored**	0
Acres of upland habitat to be restored	0	**Miles of levee to be constructed**	0
Species targeted for restoration (please list)	To be determined in the Estuarine Habitat Restoration, Resilience, and Public Access Plan		
Miles of Bay Trail to be designed	0	**Miles of Bay Trail to be constructed**	0
Miles of other trails to be designed (non-Bay Trail)	0.5	**Miles of other trails to be constructed** (non-Bay Trail)	0
Number of Water Trail sites to be designed	0	**Number of Water Trail sites to be constructed**	0
Number of youth to be engaged	40	**Number of public access facilities to be completed** (non-trail facilities, such as picnic areas, piers, parking lots, or restrooms)	0
Number of volunteer hours to be contributed	1280	**Number of unique volunteers to participate in restoration**	8

LOCATION INFORMATION			
SFBRA REGION	☐ North (Sonoma, Marin, Napa, Solano) ☐ West (San Francisco, San Mateo)	☑ East (Alameda, Contra Costa) ☐ South (Santa Clara)	
County	Alameda	**Specific Location**	Aquatic Park, Berkeley, CA
Latitude **Format: 33.3333**	37.858208	**Longitude** **Format: -111.1111**	-122.299833
What point is represented by the lat/longs (eg., parking lot, center of site, etc)**:**	Center of site		
APNs (Acquisition Only)	NA		

ELECTED OFFICIALS		
Districts	**Number(s)**	**Name(s)**
State Senate	9	Nancy Skinner
State Assembly	15	Buffy Wicks
Congressional	13	Barbara Lee

SAN FRANCISCO BAY RESTORATION AUTHORITY MEASURE AA

Organization	City of Berkeley
Project Name	Berkeley Aquatic Park Estuarine Habitat Restoration, Resilience, and Public Access Plan
Contact Person	Nelson Lam, Supervising Civil Engineer, Parks, Recreation and Waterfront Department
Contact Email	NeLam@cityofberkeley.info

I. GRANT APPLICATION – PROJECT DESCRIPTION

1. Project Eligibility.

The City of Berkeley (City) will conduct feasibility studies, form a Technical Advisory Working Group, prepare an Estuarine Habitat Restoration & Resilience Plan, and prepare a Monitoring Plan that addresses all three Restoration Act project types:**1) Restore estuarine aquatic habitat** via a technical feasibility study to improve water quality and increase connectivity between the Bay and estuarine refugia within Aquatic Park (AP) Lagoon, 2) enhance **flood protection capacity** by evaluating sea-level and groundwater rise resilience adaptation strategies and stormwater inflow to the Lagoon while identifying beneficial re-use of lagoon sediments to enhance or protect existing upland habitats and add habitats to the eroded shoreline with natural-based solutions, and 3) **preserve and enhance existing public access for recreational uses** of AP for unimpeded public access, and education opportunity sites around AP.

This project will summarize opportunities for projects that will protect, restore, and enhance aquatic and potential upland habitat at the City's AP in Alameda County. The feasibility studies will address strategies for flood protection and estuarine habitat restoration; opportunities for education, community engagement, and enhance public access; strategies for managing the quality and quantity of stormwater inflow; strategies for enhancing connectivity between Bay and estuarine refugia; and potential impacts of sea level rise to the project area. Community engagement process will follow the methodologies established by State Coastal Conservancy, Tips for Meaningful Community Engagement: https://scc.ca.gov/files/2019/04/Tips-for-Meaningful-Community-Engagement.pdf

2. Project and Site Description

Need for the Project: There are currently no natural lagoons left in the San Francisco Bay region. AP Lagoon is unique among human-created Bay Area lagoons because it provides both estuarine wetland as well as open water habitat for a variety of species in a partially sheltered locale (refugia) directly adjacent to the open waters of the Bay, as well as a location for a variety of human recreational activities. Island, shoreline, and upland pockets of diverse habitat types attract migrating and resident birds, who can be viewed and enjoyed by bikers and walkers having extraordinary access via parking, amenities, water recreation, and connectivity to Bay Trail. The high visibility and public use of AP Lagoon and the adjacent Bay Trail creates an ideal setting to connect the public to the project outcomes through signage, events, websites, and social media.

Aquatic Park is a large section of urban green-belt with degraded wildlife habitat, and poor water quality. The decline in the estuarine habitat at AP, originally built as a Works Progress Administration project in 1937, has been documented for over thirty years and has resulted in degraded water circulation and water quality, extensive sedimentation in the lagoons, and degraded wildlife habitat. The original hydrology

design for circulating water between the lagoon and the bay does not meet current and future habitat needs. The highly-muted tidal range inside AP barely fluctuates six inches, as compared with the six-to-eight foot range in the adjacent Bay. In September of 2020, the City discovered that the main tide tubes (located at the mid-point of the main lagoon) were completely blocked mostly by an invasive invertebrate tube worm casings (*Ficopomatus enigmaticus (tube works)* that greatly reduce tidal exchange.

Over the past three decades, several fish kills have occurred within the lagoons likely due to algal blooms, rapid temperature increases, and changes in salinity. During warm weather periods in late spring, extreme growth in aquatic vegetation (widgeon grass) and algal blooms occur, which can lead to degraded habitat conditions. Urban runoff from City streets along the eastern edge of the lagoon occurs after storms bring pollutants and nutrients into park waters can also lead to degraded habitat conditions; and in 2019, elevated coliform was detected (likely from urban runoff) that greatly impacted all boating activities at AP. Bathymetric data indicate that the average depth of the lagoon has decreased by 50% between 1970 and 1990's, highlighting a long-term concern that eutrophication could occur if hydrology and water quality improvements are not made within the next decade.

The City has identified five main issues within the project area: estuarine refugia habitat degradation, flooding, lagoon water contamination that prohibits public access, and susceptibility to rising seas. The AP Lagoon is isolated by Interstate 80 to the west and by the railroad track to the east with an eroding shoreline and culvert system, which impedes the natural flow of water, fish and mammals. Periodic flooding of the trail and access road system limits safe trail access and directly impacts several community-based non-profit recreation organizations at AP: Waterside Workshops[1] provides employment training for at-risk youth in the form of bicycle repair and café food service; The Bay Area Outreach Program (BORP) [2] provides a wide range of outdoor activities for a highly-diverse population of adults and youth with disabilities using special adaptive equipment (bicycling, boating, etc.), the Berkeley Paddling and Rowing Club provides boating activities, and the Youth Musical Theater Company provides music and outdoor activities for youth.

Alternative flood management strategies are needed to improve habitat and reduce flood risk that are caused by storm runoff events that conflict with high tides that block the outflow via the tide tubes. In the upland areas of the eastern region of the project area, a series of stormwater systems discharge non-point source storm runoff directly into the Lagoon. New strategies are needed to manage stormwater inflow for improved water quality, given potential increased precipitation and runoff patterns projected as the climate continues to change.

Lastly, the project area and nearby community-based recreation infrastructure may be impacted by projected sea level rise. Resilience strategies are needed to lessen the impacts on the habitats and structures along the shoreline. Development of the Plan is needed to inform future restoration actions within the project area.

Organization Structure: All components of the project will be managed by the City's project team and partners. A core team of seven City staff will support the Plan development, including the Supervising Civil Engineer (Waterfront Division), Watershed Manager, Environmental Health (Water Quality Division) Manager, Recreation Manager, Environmental Compliance Specialist, and the Parks, and Public Works Department Directors.

Project Phase Funded by this Grant: Technical studies and data collection; develop conceptual designs and associated cost estimates; and engage the public, key stakeholders, and the regulatory community; identify viable restoration scopes to complete CEQA process.

[1] https://watersideworkshops.org/, last accessed 10/12/2020
[2] https://www.borp.org/, last access 10/12/2020

History and Context: The Park was created for the community to enjoy the shoreline aquatic lagoon during construction of the original East Shore Freeway. In its original design, the daily tidal exchange through a series of culverts at several points was intended to maintain water quality and water depth. In October 2020, the City performed a condition assessment and maintenance project to investigate why the five main tide tubes had been blocked for almost three decades. The assessment found that the blockage was due primarily to encrustation by invasive tube worm casings (*Ficopomatus enigmaticus)*, and the City was able to clear the tubes and restore their full function, at a cost of $550,000. This was a critical first step in developing the long-term and sustainable plan to improve the hydrology of the lagoon and thereby improve water quality and habitat. Culverts to the north and the south of the main tubes are completely blocked, and interior circulation structures are only partly functional. Re-opening the main tide tubes was essential to restoring estuarine habitat, but the City needs funding to conduct planning studies for a comprehensive approach to restore AP Lagoon to its full habitat potential, enhance flood protection capacity, improve recreational use and public access, and design stormwater management assets for improved water quality, maximum sustainability, resilience, and ecological benefits.

The City has been exploring ways to rehabilitate AP Lagoon habitat via restored tidal circulation for the past three decades[3,4,5,6]. Studies have shown that restoring circulation would substantially improve water quality and estuarine habitat. Impaired circulation means that water in AP Lagoon is not replenished as fast a necessary, causing bacteria levels to increase and drawing down dissolved oxygen. Increasing circulation would counter these negative water quality effects.

In 2012, the City developed a Watershed Management Plan[7], supported in part by implementation funding from the City's Measure M bond program. The City's Watershed Management Plan supports a vision of stormwater management that include harvesting stormwater where possible via green stormwater infrastructure throughout the City, providing multiple benefits such as aesthetic improvement, heat island mitigation, and traffic calming along with water quality treatment. The Plan calls for the implementation of treatment devices to remove urban runoff contaminants and trash at drain inlets throughout the City, including the local drainage basin at AP.

The **project goals** will help the San Francisco Restoration Authority (Authority) show near-term success and support its long-term vision. The first goal, **achieve immediate improvements in habitat and water quality**, will leverage existing project designs and cost estimates and stakeholder interest to make tangible changes. Salt/brackish wetland projects, tidal circulation and stormwater treatment infrastructure, and public outreach will connect Measure AA funding to demonstrable habitat resource enhancements. The second goal, **prepare for the future,** will address resilience by designing projects to address sustainability and the effects of rising tides. The approach to contouring will seek to beneficially re-use sediments to integrate habitat restoration and shoreline stabilization in the Park with long-term maintenance of adequate depth for existing recreational uses. Studies and community outreach and education will help the public envision how taking care of AP's assets today helps prepare for the future, as conditions along the East Bay shoreline change over time (Project Maps: Figure 2).

Expected Outcomes: With this approach, we expect to plan, design and permit projects that will achieve near-term habitat and water quality successes that are highly sought after by the community. Measure AA funds in this phase will help the City develop the technical studies and concepts for improved sustainability and resilience and involve stakeholders in the process, and complete the CEQA process for selected implementation projects.

[3] Hydrology and Water Quality: Berkeley Aquatic Park. Phillip Williams Associates, 1990.
[4] Aquatic Park Water Quality Improvement Study. CH2MHill and others, 1994.
[5] Aquatic Park Natural Resources Management Study (NRMS). Laurel Marcus and Associates and others, 2003.
[6] Aquatic Park Improvement Program Technical Report. Laurel Marcus and Associates and others, 2008.
[7] Watershed Management Plan. Adopted by the City of Berkeley, October 30, 2012.

Project Location
Aquatic Park is located in West Berkeley, historically an industrial and disadvantaged community, between Interstate 80 on the west and the Union Pacific Railroad on the east. The eastern edge of Aquatic Park was the original Bay shoreline prior to the construction of Interstate 80 in 1937. Aquatic Park's unique habitat value and accessibility to the community results from a confluence of natural and created features:

- **Estuarine habitat** supported by tidal flushing and freshwater inflow has established unique refugia and pocket habitat areas in the lagoon and along its shoreline that can be protected and enhanced.
- **Tidally enhanced circulation** is intended to manage water quality and needs to be restored to fully support existing habitat and recreational uses
- **Innovative stormwater treatment** is possible in smaller immediate catchments, because the larger watershed has been mostly re-routed around the lagoon
- **Connectivity to Bay Trail** and nearby urban amenities makes AP's habitat and recreational benefits to the wider community, including nearby disadvantaged communities[8].

Hikers and bikers enjoying the Bay Trail can currently take a side trip across the access bridge over Interstate 80 to appreciate a rich diversity of Baylands habitat types across a very short distance (Project Maps: Figure 1). The two mile loop to AP takes users from the shallow Bay and tidal marsh / flat habitat west of the main Bay Trail to the trail around AP's lagoon habitat interleaved with pockets of tidal flats, salt and brackish marsh, freshwater wetlands, and diked ponds and marshes. Along the edges of the Main Lagoon, plants such as the salt marsh gum plant, Jaunea, and pickleweed grow among rock. Cattails, brass buttons, and alkali bulrush grow in areas where freshwater enters the system. The San Francisco Bay Habitat Goals Report notes that Bay Area lagoons support many of the same aquatic invertebrates and fish as adjacent shallow water habitats. Water birds who frequent AP include bufflehead, western grebes, lesser scaup, and double-crested cormorant. Wading birds such as Black-crowned night heron, great blue heron, snowy egret, and great egret forage shallow areas of the lagoon for food. Pockets of delineated salt/brackish wetland currently total 0.76 acres in AP.

3. Specific Tasks

#	Task Name	Description
1	Technical Advisory Group (TAG)	A Technical Advisory Group will be formed to allow experts to provide insight on the proposed Plan and feasibility studies.
2	Feasibility Study #1: Estuarine Aquatic Habitat Restoration	This study will analyze potential solutions to restore aquatic habitat and mitigate flooding from rising sea by restoring tidal circulation assets. The study will evaluate: 1) improving Bay and Lagoon connectivity; 2) implementing appropriate nature-based, or other suitable sea-level rise adaptation strategies; 3) enhancing areas of the lagoon to promote natural habitat that the site offers to fish and mammals; and 4) a long-term sediment reuse plan for maintenance activities.
3	Feasibility Study #2: Stormwater Inflow Quality Improvement and Quantity Management	This study will analyze potential solutions for managing the quality and quantity of stormwater inflow to protect the estuarine aquatic habitat, and to promote unimpeded water-based recreation. The study will evaluate potential options to re-use sediments for creation of nature-based stormwater treatment within AP or in upland areas.
4	Feasibility Study #3: Shoreline Habitat and Environmental Interpretive Sites	This study will identify existing habitat sites at the existing shoreline locations to be protected and enhanced, and analyze potential new sites for suitable habitat elements while balancing recreational needs, and environmental interpretive sites for public awareness of the lagoon habitats and wildlife
5	Community Engagement & Invasive Species Removal	Develop and implement a community engagement plan to involve community members throughout the project process. Conduct community volunteering projects.

[8] Disadvantaged Communities – Tract and Block Group 2016 , per https://gis.water.ca.gov/app/dacs/

6	Estuarine Wetland Habitat Restoration and Resilience Plan	A comprehensive habitat Restoration & Resilience Plan will be developed to identify potential projects to help improve habitat, reduce flooding, improve stormwater quality, increase public access, and increase resiliency to sea level rise for the recreation and natural area surrounding the lagoon. The plan will incorporate results from the three feasibility studies and feedback from the community and TAG.
7	Preliminary Design and CEQA Clearance	Prepare the preliminary design plan for all viable projects identified in the Estuarine Habitat Restoration and Resilience Plan to allow the adoption of a CEQA environmental document.
8	Monitoring Plan	The Monitoring Plan will identify appropriate monitoring strategies for each task identified in the Plan in accordance with Authority's requirements. The plan will outline recommended evaluation methods and suggest baseline and post-project measures. The Plan will incorporate feedback from the TAG. Where appropriate, data will be made available through online information resources, e.g. https://www.ecoatlas.org/, etc.

4. Work Products and Schedule.

#	Task Name	Work Products	Estimated Completion Date
1	Technical Advisory Group (TAG)	Formation of TAG, develop communication protocol, and routine meeting schedule	September, 2021
2	Feasibility Study #1: Estuarine Aquatic Habitat Restoration	Aquatic Habitat Design Alternatives Study	June, 2023
3	Feasibility Study #2: Stormwater Inflow Quality Improvement and Quantity Management	Stormwater Management Design Alternatives Study	June, 2023
4	Feasibility Study #3: Shoreline Habitat and Environmental Interpretive Sites	Shoreline Habitat Design Alternatives Study	June, 2023
5	Community Engagement & Invasive Species Removal	Community engagement plan Bi-Monthly Stakeholders Workshops Quarterly Community Meetings	Duration of Project
6	Estuarine Habitat Restoration & Resilience Plan	A comprehensive report with recommended project elements	June, 2024
7	Preliminary Design & CEQA Clearance	60% level design plans, biological resources evaluation, wetland delineation, and any other supporting documents per CEQA act, and adopted CEQA document	June, 2025
8	Monitoring Plan	Progress reports, Baseline monitoring report	Quarterly, and Duration of Project

5. Project Partners. The City has partnered with the San Francisco Estuary Institute, the four non-profits at Aquatic Park (Waterside Workshops, BORP, Berkeley Paddling and Rowing Club, and the Youth Musical Theater Company), and a current active stakeholder group of Berkeley residents comprised of representatives from environmental groups, the rowing club, and other park users and neighbors.

6. Community Support, Involvement and Benefits. The City currently leases properties to four non-profits at Aquatic Park who provide a range of recreational activities to a diverse population of users: Waterside Workshops, a non-profit that provides job training opportunities (including revegetation projects); Bay Area Outreach and Recreation Program (BORP) to obtain input on specific amenities and needed to improve access to park facilities for persons with mobility challenges; the Berkeley Paddling and Rowing Club; and the Youth Musical Theater Company.

7. **Measuring Success.** The City will fund and implement ongoing management of the plan infrastructure comprised of: maintenance dredging, ongoing invasive plant removal, and inspecting and maintaining hydrology circulation assets. Funds for follow-up monitoring to document change will be sought as part of future Measure AA construction funding sought for habitat restoration and enhancement projects

8. **Applicant History.** The City has over eighty (80) years of experience in implementing major capital improvement projects at the Berkeley Waterfront area with federal, state and regional funding and collaboration provided by USEPA; USFEMA; USACE; USFWS; CDFW; EBRPD; RWQCB; California Coastal Conservancy; California Wildlife Conservation Board; California Department of Boating and Waterways (DBAW); California Department of Parks and Recreation; the Land and Water Conservation Fund. Over the past thirty years, the City has completed several water-based capital projects using $36 million in State-funded DBAW Marina Improvement loans; projects included renovation of several Marina Docks and amenities and shoreline riprap erosion prevention. Over the past twenty years at AP, the City restored habitat at the south end of the Main Lagoon in 2000 (including $100,000 in Habitat Conservation Fund support); performed technical habitat and hydrology studies cited in this funding application ($400,000 from 2003-2006); dredged the north end of the Main Lagoon in 2006 ($571,000); and in October 2020, performed a thorough cleaning and assessment of the five main tide tubes that connect AP ($550,000). The City has a comprehensive financial system and experienced finance and auditing staff to manage the accounting and auditing of all capital projects, and contracts for an independent audit of its federally funded capital projects (a single audit) on a yearly basis.

9. **Barriers and Risks.** Because of sea level rise, we need to plan for how the uses of the park might evolve over the next fifty years. The East Bay shoreline is expected to keep up with sea level rise through marsh accretion, but this could mean substantial transformations within AP Lagoon and upland environments. Rising groundwater associated with sea level rise may alter hydrology and mobilize contaminants from nearby underground plumes from earlier industrial uses. These changes do not need to be problematic if they are anticipated and designed into the long-term management plan for AP.

10. **Environmental Review**. 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. City of Berkeley, as the lead agency, will file a Notice of Exemption upon approval of the proposed project.

11. **Bay Trail or Water Trail Public Access.** AP is currently connected to the Bay Trail via the pedestrian / bike bridge over I-80, and the trail within AP is considered an ancillary feature of the main Bay Trail. The Community Engagement Plan will build on this connectivity via signage and events.

Permitting and Mitigation. Permits from Caltrans, CDFW, ACE, EBRPD, SFRWQCB, and BCDC are anticipated. No mitigation beyond AP is anticipated at this time.

15. **Acquisitions.** The City owns all properties within the proposed project area.

11. GRANT APPLICATION – PRELIMINARY BUDGET

In-Kind Match Services: The City will provide City Staff Time at 100% to manage the Technical Advisory Group, conduct the community engagement process, and host invasive species removal events (e.g., community volunteer projects). The City also provides 12.6% of an FTE staff person for Project Management of all technical consultant contracts (Staff Time).

Contingency Costs: Not Applicable.

Operation and Maintenance. Not Applicable

Uncertainties. Unanticipated environmental impact issues raised; if additional studies needed. City can provide other funds when necessary.

II. GRANT APPLICATION - PRELIMINARY BUDGET								
Task Number	**Task Name**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Restoration Authority Grant Request**	**In-Kind Matching Fund**	**Total Cost**
1	Technical Advisory Group (TAG)	$5,000	$5,000	$5,000	$5,000	**$0**	$20,000	$20,000
2	Feasibility Study #1: Estuarine Aquatic Habitat Restoration and Resilence Study	$75,000	$75,000	$25,000	$10,000	**$185,000**	$0	$185,000
3	Feasibility Study #2: Stormwater Inflow Quality Improvement and Quantity Management Study	$50,000	$50,000	$30,000	$10,000	**$140,000**	$0	$140,000
4	Feasibility Study #3: Shoreline Habitat and Environmental Interpretive Sites Study	$60,000	$60,000	$40,000	$10,000	**$170,000**	$0	$170,000
5	Community Engagement	$14,500	$14,500	$14,500	$14,500	**$0**	$58,000	$58,000
6	Develop Estuarine Habitat Restoration & Resilience Plan	$0	$25,000	$100,000	$35,000	**$160,000**	$0	$160,000
7	Preliminary Design & CEQA Clearance	$0	$0	$50,000	$75,000	**$125,000**	$0	$125,000
8	Monitoring Plan	$0	$0	$0	$0	**$0**	$0	$0
9	Project Management (Staff Time)	$33,488	$33,488	$33,488	$33,488	**$117,000**	$16,950	$133,950
10	Invasive Species Removal (Community Volunteer Project)	$0	$0	$35,000	$0	**$0**	$35,000	$35,000
TOTAL		$237,988	$262,988	$332,988	$192,988	**$897,000**	$129,950	$1,026,950

II. GRANT APPLICATION - PRELIMINARY BUDGET								
Task Number	**Task Name**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Restoration Authority Grant Request**	**In-Kind Matching Fund**	**Total Cost**
1	Technical Advisory Group (TAG)	$5,000	$5,000	$5,000	$5,000	**$0**	$20,000	$20,000
2	Feasibility Study #1: Estuarine Aquatic Habitat Restoration and Resilence Study	$75,000	$75,000	$25,000	$10,000	**$185,000**	$0	$185,000
3	Feasibility Study #2: Stormwater Inflow Quality Improvement and Quantity Management Study	$50,000	$50,000	$30,000	$10,000	**$140,000**	$0	$140,000
4	Feasibility Study #3: Shoreline Habitat and Environmental Interpretive Sites Study	$60,000	$60,000	$40,000	$10,000	**$170,000**	$0	$170,000
5	Community Engagement	$14,500	$14,500	$14,500	$14,500	**$0**	$58,000	$58,000
6	Develop Estuarine Habitat Restoration & Resilience Plan	$0	$25,000	$100,000	$35,000	**$160,000**	$0	$160,000
7	Preliminary Design & CEQA Clearance	$0	$0	$50,000	$75,000	**$125,000**	$0	$125,000
8	Monitoring Plan	$0	$0	$0	$0	**$0**	$0	$0
9	Project Management (Staff Time)	$33,488	$33,488	$33,488	$33,488	**$117,000**	$16,950	$133,950
10	Invasive Species Removal (Community Volunteer Project)	$0	$0	$35,000	$0	**$0**	$35,000	$35,000
TOTAL		$237,988	$262,988	$332,988	$192,988	**$897,000**	$129,950	$1,026,950

12. GRANT APPLICATION - PRIORITIZATION CRITERIA

1. **Greatest positive impact.** The project's feasibility studies will result in restoration plans that enhance Bayland lagoon habitat quality and connectivity of Bayland refugia to shallow Bay habitat. The goal of the studies is to plan the details of projects that will restore circulation, restore bathymetry for recreation and flood capacity, beneficially re-use sediments for wetland habitat enhancement and shoreline stabilization, and improve the quality of stormwater entering AP Lagoon and the Bay. This will build on the immediate success the City has achieved in restoring significant tidal circulation to the Lagoon in 2020. Public engagement funded by this project will help the active stakeholder base, including AP users and elected officials, be a part of envisioning the future. Through public involvement the project will help chart a course for the City to carry out necessary work such as restoring circulation, maintaining lagoon depth and shoreline stability, and managing stormwater in ways that create the greatest net environmental and societal benefit. The outcomes will be an approach to rehabilitating AP's habitat and recreational resources that not only enriches the mosaic of Bayland habitat types present within AP. The approach will be tailored to help the public tell the story through their involvement in the planning, monitor habitat and water quality benefits, record successes through actions such as self-guided signage connecting Bay Trail through the project area, websites, social media, and events involving local partnerships such as Waterside Workshops and BORP.

2. **Greatest long-term impact.** The planning process funded by this project is essential to not only optimize today's habitat and connectivity, but also to understand how this unique niche within the East Bay Baylands habitat mosaic will evolve over time as sea level rises.

    a. The City needs to understand whether current uses would be sustainable in fifty years, when sea level rise is expected to fundamentally change the design assumptions of the tide tubes. The answer will inform the approach to sediment re-use over time, within AP and / or in conjunction with other accessible restoration projects. The proposed Estuarine Habitat Restoration & Resilience Plan (Habitat Resilience Plan) presents a unique opportunity to address this kind of question now, to help projects addressing immediate needs design for resilience. To that end, the City will coordinate with the San Francisco Bay Joint Venture and enter the AP sediment budget findings of the Habitat Resilience Plan into the San Francisco Estuary Institute's Sedimatch database.

    b. The City also needs to understand how rising groundwater may mobilize underground contaminant plumes from earlier industrial uses known to exist along the East Bay shoreline. If this is a significant risk due to rising sea level, the City needs to know if future configurations of AP could mitigate contaminant mobilization, i.e. could creation of sloped ecotones along AP's eastern shoreline abutting the railroad line mitigate seawater intrusion?

3. **Leveraging resources and partnerships.** This planning project creates a unique nexus to leverage state, federal, regional, and local partnering resources. The three types of capital projects planned - tidal circulation restoration, contouring and beneficial sediment re-use, and stormwater improvement – each will likely be constructed with a different mix of funding.

    a. Tidal tube improvements may fit City capital funds, such as Measure T1; however, designs for resiliency and amenities for habitat improvement may also warrant some Measure AA support.

    b. Habitat restoration projects that beneficially re-use sediments may be funded by Measure AA or the Habitat Conservation Fund grant source.

    c. The City understands that construction of stormwater improvement would likely be funded by infrastructure capital funds and the City's Measure M program is a potential source of

stormwater capital funds. The City will also explore the possibility of partnering with Caltrans for stormwater improvements through a Cooperative Implementation Agreement.

d. The design of signage for habitat - related walking would involve collaborating with Easy Bay Regional Parks.

4. **Economically disadvantaged communities.** AP's public recreation and wildlife appreciation amenities are available to all of Berkeley and the Bay Area's diverse community. Maintaining the park's facilities for boating, walking, biking, and frisbee golf along the Baylands provides a simple readily available pleasure that within easy reach of thousands of residents. The park is directly adjacent to the historically economically disadvantaged residential communities of West Berkeley, (Project Maps: Figure 3). The Park is also easily reachable by AC Transit and the Bay Trail that serves disadvantaged communities in the East Bay.

5. **Benefits to economy.** Resilient rehabilitation of AP for existing uses integrates the work within the larger context of shoreline revitalization along the waterfront, including improvements to the Berkeley Marina and shallow water habitat restoration projects along the East Bay shoreline. This provides multiple economic benefits:

   a. Visitors accessing East Bay parks enjoy local amenities at the Marina and the Fourth Street commercial district, increasing local revenues.

   b. Capital projects planned will translate to more than $10 million in design fees and construction labor.

   c. Involving the community in the project planning stages will identify opportunities to build on community partnerships that can provide employment and experience through habitat restoration labor and other meaningful engagement.

   d. Planning to reduce flood risk provides an economic benefit from protection of buildings and infrastructure within the park and also to the businesses and residents just to the east in West Berkeley.

6. **Engage youth and young adults.** The City's partnerships with organizations located at AP establish a basis for meaningful youth and young adult involvement in the project. Waterside Workshops provides job training through two non-profit businesses: Berkeley Boathouses and Street Level Cycles. The Berkeley Outreach and Recreation Program (BORP) maintains an Adaptive Cycling Center in AP that provides mobility access. The City will work with its network of contacts through these and similar organizations sponsored by the City to evaluate opportunities to involve youth through volunteer shoreline cleanups and replanting events, and potentially more substantive job training through paid labor removing invasive plants and replanting native species.

7. **Monitoring, maintenance, and stewardship.** The project outcomes will include a monitoring plan that establishes baseline conditions and protocols to characterize change. Monitoring will document project effects on circulation, hydraulics, water quality, habitat, wildlife, bathymetry, geomorphology, and public / park user perceptions. A monitoring and reporting plan will be developed, following guidance from the Technical Advisory Group (TAG) and federal and state guidance. Water Quality monitoring will follow the state's Surface Water Ambient Monitoring Program (SWAMP) guidance. Habitat assessments will follow established protocols such as the California Rapid Assessment methodology (CRAM). The City will prepare O&M plans for rehabilitated assets and restored or enhanced wetland areas as part of the planning process and program funding adequate to implement the O&M plans.

8. **Coastal Conservancy's San Francisco Bay Area Conservancy Program.**

   a. The project is supported by regional plans including: *Restoring the Estuary, The Baylands and Climate Change, Recovery Plan for Tidal Marsh Ecosystems for Northern and Central*

California, Comprehensive Conservation and Management Plan for the San Francisco Estuary, Surviving the Storm, San Francisco Bay Trail Plan, Water Quality Control Plan for the San Francisco Bay Basin.

b. The proposed project serves a regional constituency. The results of the feasibility studies will inform future implementation phases that will have benefits beyond the immediate project site.

c. The proposed project can be implemented in a timely way. The project can begin as soon as funding is secured through the propose authorization and is projected to be completed by 2022.

d. The proposed project provides opportunities for benefits that could be lost if the project is not quickly implemented. The Plan will address several urgent issues including flooding, habitat degradation, water contamination, limited public access, and sea level rise.

9. **San Francisco Bay Conservation and Development Commission's Coastal Management Program.** The feasibility studies address several policies of BCDC's San Francisco Bay Plan, part of its Coastal Management Program:
    a. Water Quality Policy 1: Feasibility studies for stormwater improvements will support projects to reduce pollutants entering the Bay.
    b. Water Quality Policy 2: Restoring tidal circulation will more fully support beneficial uses of AP Lagoon.
    c. Water Surface Area and Volume Policy 1: Restoring AP Lagoon bathymetry increase water volume. Restoring circulation will maximize active oxygen exchange through tidal action.
    d. Public Access Policy 3: The project will consult with appropriate agencies as a part of the TAG involvement to determine the potential improvements for public access;
    e. Public Access Policy 4: Public access will be reviewed to identify potential changes needed to prevent significant adverse effects on wildlife;
    f. Public Access Policy 5: Project plans include outreach to a diverse group of community members and specify plans to enhance the existing inclusive public access;
    g. Environmental Justice and Social Equity Policy 3: Equitable community outreach and engagement will be conducted;
    h. Public Access Policy 8: The public access improvements will be designed to encourage diverse Bay-related activities and will provide barrier free access for persons with disabilities;
    i. Public Access Policy 14: Review of public access is being integrated early into the planning and design of habitat restoration projects;
    j. Climate Change Policy 2: The project will include a risk assessment accounting for future sea level rise;
    k. Climate Change Policy 3: The project designs will assume useful life through mid-century and include adaptive management guidance for AP beyond that time frame.
    l. Climate Change Policy 4: The project will give special consideration for preservation and habitat enhancement to areas vulnerable to future flooding (i.e., the shoreline of AP Lagoon);
    m. Climate Change Policy 5: The project will incorporate sea level rise adaptation approaches where feasible and appropriate for AP Lagoon;
    n. Climate Change Policy 8: The project planning for resilience will include coordination with the California Department of Transportation and Union Pacific Railroad, who own transportation corridors bounding AP;

o. Recreation Policy 1: The project will enhance and increase existing opportunities for accessible water-oriented recreation;
p. Recreation Policy 3: AP currently conforms to the standard for waterfront recreational facilities. The project will review and improve the balance between public access and wildlife disturbance as necessary and preserve site features compatible with water recreation;
q. Recreation Policy 4. Protecting properties within the park from flooding will help continue to use of historic buildings for compatible new uses;
r. Public Access Policy 6: The project will evaluate management and maintenance of public access to avoid significant adverse impacts from sea level rise;
s. Public Access Policy 8: The project will maintain and enhance public access in a manner consistent with the culture of the local community and provide for the public's safety and convenience

10. **San Francisco Bay Joint Venture's Implementation Strategy.** The proposed project is not currently on the Joint Venture's list, but the project is consistent with the Joint Venture's Implementation Strategy. The results of Feasibility Study #1 will contribute to the Joint Venture's goal of protecting, restoring, and enhancing Bay habitat of lagoon type. The project will contribute directly toward The Joint Venture's goal for enhancing 1,500 acres of lagoon habitat. The Implementation Strategy emphasizes the need to control pollutants to improve water quality, which will be directly addressed by the outcomes of Feasibility Study #2, which will lead to controls for pollutants discharged from stormwater.

GRANT APPLICATION CHECKLIST

A complete application will consist of the following files:

- ☐ Grant application:
  - PDF cover pages
  - Project description section I
  - Preliminary budget section II
  - Prioritization criteria section III
- ☐ Project maps and design plans (in one pdf file, 10 MB maximum size)
- ☐ Project photos (in jpg format)
- ☐ Optional: Support letters from community representatives

Project Maps and Graphics. Provide the following project graphics with your application. Project maps and design plans should be combined into one pdf file with a maximum size of 10 MB. Project photos should be provided in jpg format.

- Regional Map – Clearly identify the project's location in relation to prominent area features and significant natural and recreational resources, including regional trails and protected lands.
- Site-Scale Map – Show the location of project elements in relation to natural and man-made features on-site or nearby. Any key features discussed in project description should be shown.
- Design Plan – Construction projects should include one or more design drawings or graphics indicating the intended site improvements.
- Site Photos – One or more clear photos of the project site

☒ I have reviewed the **Grant Agreement Provisions** listed in the Request for Proposals and understand the likely requirements for receiving and administering Measure AA Funds.

Applications should be emailed to grants@sfbayrestore.org. If you are unable to email your application, you may mail your application materials to the following address:

San Francisco Bay Restoration Authority
c/o State Coastal Conservancy
1515 Clay Street, 10th Floor
Oakland, CA 94612

Grant applications must be received by the San Francisco Bay Restoration Authority by 5pm on October 23, 2020.

Berkeley Paddling & Rowing Club
2851 W Bolivar Drive
Berkeley, CA 94710

October 22, 2020

Nelson Lam, Supervising Civil Engineer
Department of Parks, Recreation & Waterfront
City of Berkeley
1947 Center St, 5th floor
Berkeley, CA 94704

RE: Letter of Support for the **Berkeley Aquatic Park Estuarine Habitat Restoration, Resilience, and Public Access Plan**

Dear Mr. Lam:

We are writing in support of the City of Berkeley's grant application to the SF Restoration Authority to fund the **Berkeley Aquatic Park Estuarine Habitat Restoration, Resilience, and Public Access Plan.** We believe this is an important first step in improving the water quality at Aquatic Park and will provide the foundation for developing the next steps for implementation projects.

The Berkeley Paddling and Rowing Club (BPRC) is a recognized non-profit organization, which aims to support, promote and educate the public about the amateur sports of rowing and paddling and to train paddlers and rowers of all ages for local and national competition. BPRC is home to scullers and paddlers who represent a variety of skill levels and experience, from novices to Olympians, including former national team members from around the world.

We will support the City's efforts for future projects that are determined feasible by this proposed project by attending planning workshops, advertising workshops on our website, and providing advice and comments as needed.

Sincerely,

Elaine Baden

Elaine Baden
BPRC President

Leo Siecienski
Program Manager
Bay Area Outreach and Recreation Program
80 Bolivar Drive
Berkeley, CA 94710
leo@borp.org
510-848-2930

10/21/2020

Nelson Lam
Supervising Civil Engineer
Department of Parks, Recreation & Waterfront
City of Berkeley
1947 Center St, 5th floor
Berkeley, CA 94704

RE: Letter of Support for the Berkeley Aquatic Park Estuarine Habitat Restoration, Resilience, and Public Access Plan.

Dear Mr. Lam:

We are writing in support of the City of Berkeley's grant application to the SF Restoration Authority to fund the **Berkeley Aquatic Park Estuarine Habitat Restoration, Resilience, and Public Access Plan.** This project will conduct feasibility studies, form a Technical Advisory Working Group, prepare an Estuarine Habitat Restoration & Resilience Plan, and prepare a Monitoring Plan. The Berkeley Aquatic Park Estuarine Habitat Restoration Plan will summarize opportunities for projects that will protect, restore, and enhance aquatic and potential upland habitat at the City's Aquatic Park in Alameda County. The feasibility studies will address strategies for flood protection and estuarine habitat restoration; opportunities for education, community engagement, and enhance public access; strategies for managing the quality and quantity of stormwater inflow; strategies for enhancing connectivity between Bay and estuarine refugia; and potential impacts of sea level rise to the project area.

We believe this is an important first step in improving the water quality at Aquatic Park and will provide the foundation for developing the next steps for implementation projects.

The mission of our organization is to provide recreational opportunities to people with physical disabilities. This proposal will directly impact our adaptive kayaking program.

We will support the City's efforts for future projects that are determined feasible by this proposed project by attending planning workshops, advertising workshops on our website, and providing advice and comments as needed.

Sincerely,

Leo Siecienski

Project Map

Regional Map

Existing Conditions

Project Boundary:
Estuarine Habitat Restoration, Resilience, and Public Access Plan

Model Yacht Basin to Main Lagoon Connection

Main Lagoon to Bay Connection

Model Yacht Basin to Bay Connection

Stormwater Inflow

San Francisco Bay Trail

0 400 800
Feet

Figure 2. Project Goals and Approach Addressing Baylands Habitat Types Found in Aquatic Park

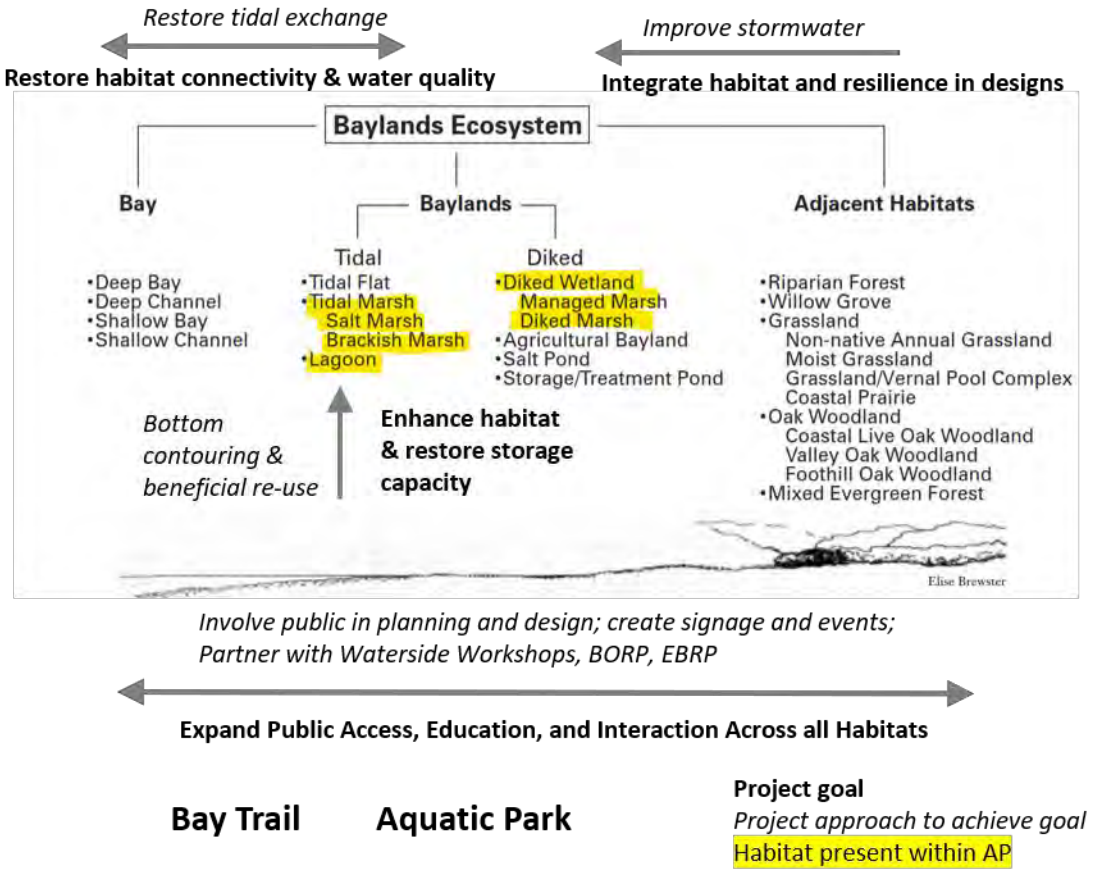
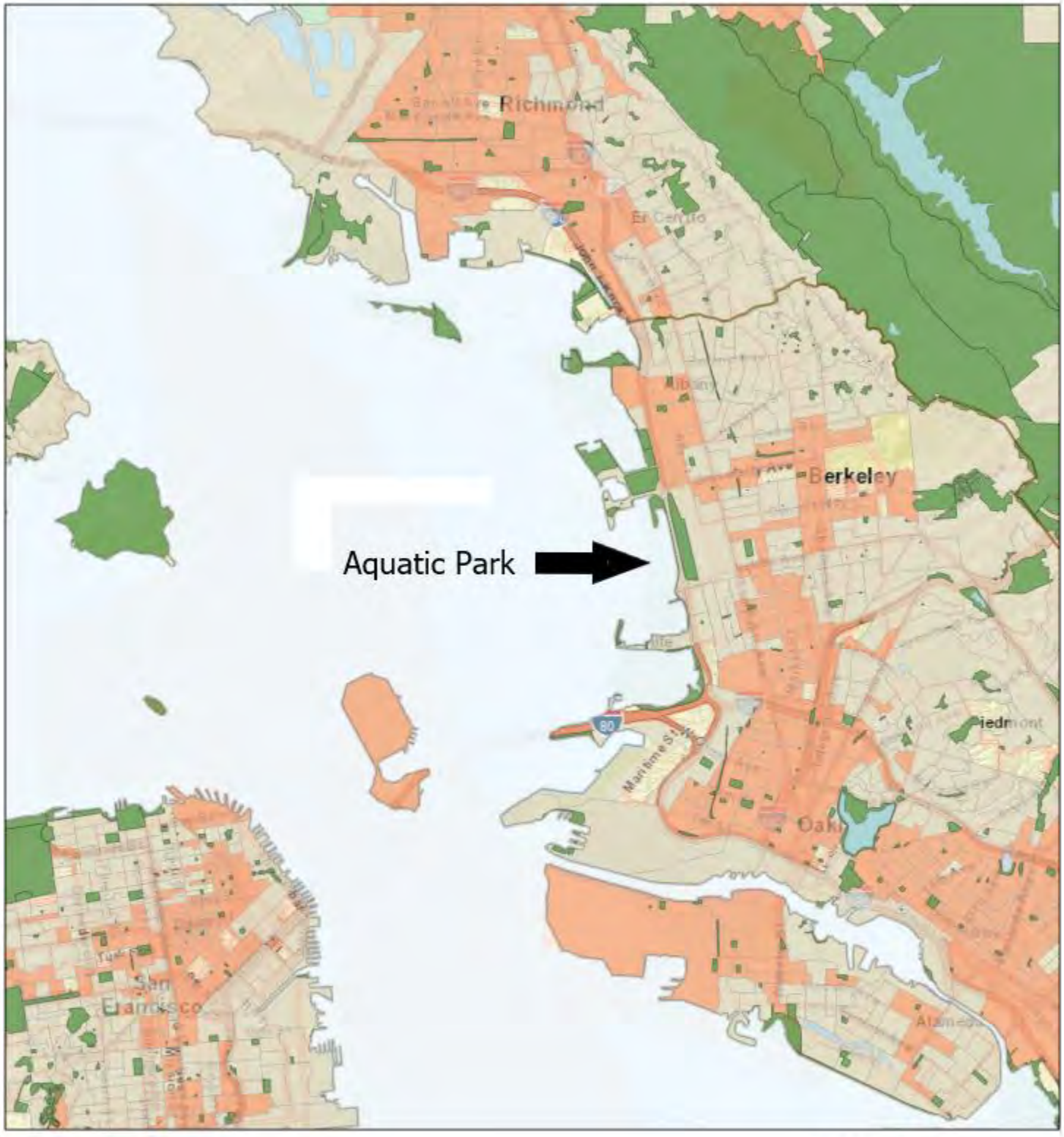


Figure 3. Proximity of Low-Income Communities to Aquatic Park



October 23, 2020

1:144,448

0 1 2 4 mi

0 1.5 3 6 km

Protected Areas

Economically Disadvantaged Communities Block Group

Not a Low-Income Community

Low-Income Community

No Data - MHI Data Missing

No Data - Household Size Data Missing

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

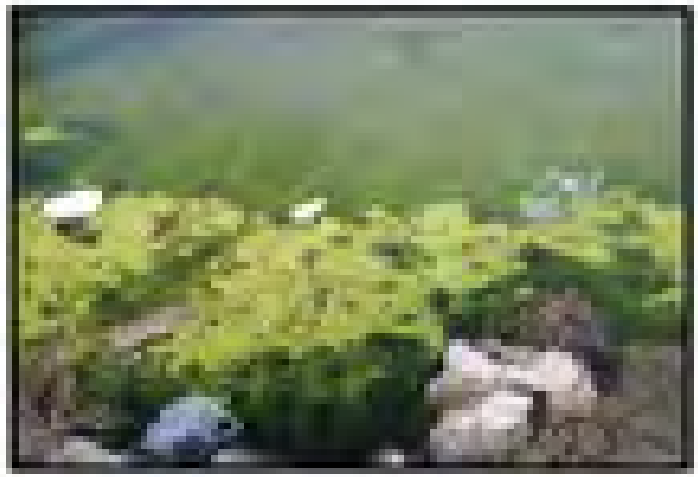


Figure 42: Algae Blooms in Main Lagoon

Black-crowned night heron

Great egret

Great blue heron

Snowy egret

Figure 31: Wading Birds of Aquatic Park

Figure 49: Mixed Flock of Shorebirds at Mudflat Area in Main Lagoon

Figure 53: Rock Wall Falling off Shoreline Trail on East Shore of Main Lagoon

Figure 16: Rocky Shoreline of Main Lagoon

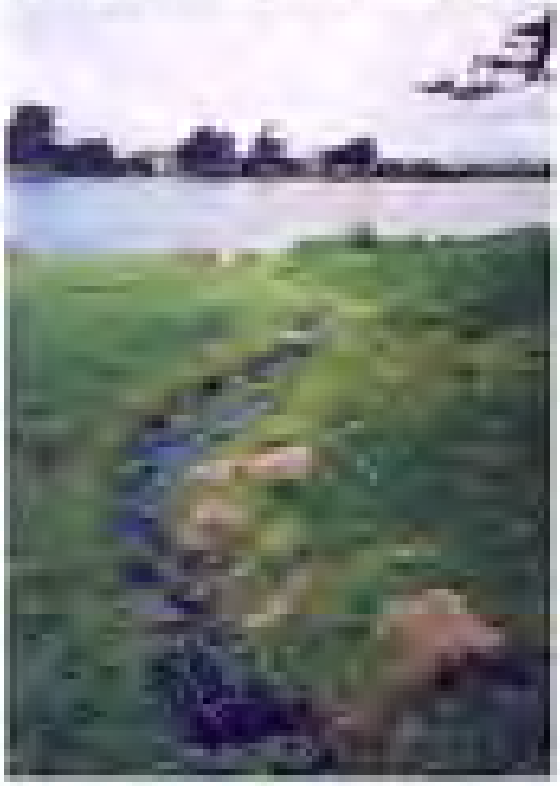
Figure 3-35. Alkali Bulrush (*Scirpus robustus*) on the Eastern Shoreline of the Main Lagoon

Figure 3-36. Marsh Gumplant (*Grindelia stricta* var. *angustifolia*) along the Eastern Shoreline of the Main Lagoon

Figure 3-37. Pickleweed (*Salicornia virginica*)

Figure 2-10. English Ivy in Trees along Railroad Berm in Freshwater Wetland #8

Figure 2-11. Freshwater Wetland #9 - Narrow Drainage to Main Lagoon



Bufflehead

Lesser scaup

Western grebes

Double-crested cormorant

Double-crested cormorant

Figure 38: Water Birds of Aquatic Park

SAN FRANCISCO BAY
RESTORATION AUTHORITY

February 26, 2021

Nelson Lam
City of Berkeley
NeLam@CityofBerkeley.info

RE: San Francisco Bay Restoration Authority Grant Application
Berkeley Aquatic Park Estuarine Habitat Restoration, Resilience, and Public Access Plan

Dear Nelson Lam:

Thank you for applying to the San Francisco Bay Restoration Authority's competitive grant round for Measure AA funding. Unfortunately, your application for "Berkeley Aquatic Park Estuarine Habitat Restoration, Resilience, and Public Access Plan" will not be recommended for funding.

The San Francisco Bay Restoration Authority received many qualified grant applications but does not have enough funding to meet the demand for these grants, and we regret not being able to fund so many proposals. We hope that we will be able to work with your organization in the future.

If you have any questions, or would like to discuss, please email Jessica Davenport, Deputy Program Manager, at jessica.davenport@scc.ca.gov.

Sincerely,

DocuSigned by:
Sam Schuchat
C091C1DA2FC1466...

Sam Schuchat
Executive Officer

From: Tong, Linda@SCC <Linda.Tong@scc.ca.gov>
Sent: Wednesday, April 14, 2021 12:11 PM
To: Lam, Nelson <NeLam@cityofberkeley.info>
Cc: Davenport, Jessica@SCC <Jessica.Davenport@scc.ca.gov>; Miller, Roger <RMiller@cityofberkeley.info>; Ferris, Scott <SFerris@cityofberkeley.info>
Subject: Re: Response to Your SF Bay Restoration Authority Application

Hi Nelson,

Here are comments from the review team for the Berkeley Aquatic Park Estuarine Habitat Restoration, Resilience, and Public Access Plan project:

Strengths:

- This is a significant amount of habitat (70 acres) for an urban area with very good public access (Bay Trail, boating). It is an unusual habitat type (human-made lagoon) and supports significant bird populations, despite degraded habitat quality. The project also addresses other issues e.g. flood/SLR resilience.
- The project could result in substantial water quality improvements in the lagoon. As the proposal notes, lagoon habitats may provide important refugia habitat for some species and are locally rare in the SF Bay Region.
- The Aquatic Park is a highly utilized public space that benefits the community (including youth, low-income, and disadvantaged residents) in multiple ways.
- The project will result in 60% design of projects identified within a comprehensive plan and development of a CEQA document covering those projects. They plan to create a community engagement plan and have a focused approach for the Monitoring Plan.
- The City has a long history as an active steward of the Aquatic Park and is invested in maintaining its habitat and recreational values.
- Part of the work of reconnecting the lagoon to the bay has already been done. The project will build on their preliminary success of improving circulation at the project site and would contribute to furthering our understanding of how sediment can be reused for Bay restoration projects.

Weaknesses:

- The proposal says the City has been exploring ways to rehabilitate AP Lagoon via restored tidal circulation for the past three decades and cites several studies that have been completed. It is unclear how the new feasibility studies would differ from the previous work products.

- Four years seems like a long time to complete the studies and plan, given that many studies have already been conducted over the past few decades, including an improvement program technical report in 2008. However, given that it includes project designs and CEQA, could be considered reasonable.
- The feasibility studies did not include focused questions and some of the goals for the project were not clearly addressed in the description of the feasibility studies. It is unclear if there is a feasibility study that will address new recreation opportunities on site or if there is only focus on preserving existing opportunities through flood protection and improved water quality.
- The lagoon is man-made and highly constrained by adjacent development. Would have liked to see an expanded discussion of barriers/risks as well as additional engagement with technical experts prior to submittal. SFEI is listed as a partner, but there is no letter of support, and they don't appear to have contributed significantly to the proposal.
- The project's objectives are quite ambitious (e.g. improving tidal exchange while reducing flooding and increasing resiliency to sea level rise, mitigating saltwater intrusion, managing/treating stormwater inflow, etc.). Given the constraints of the surrounding development and infrastructure, not sure how feasible these objectives are.
- The proposal may have community support and the support of other programs, but the proposal didn't do a great job of articulating this support. The application did not clearly explain how community based organizations local to the site would be involved in this planning phase. The direct benefits from the project to the neighboring Economically Disadvantaged Community were not explained in enough detail.

Questions/Other Comments:

- Why is a feasibility study still needed if there have been several other studies on restoring tidal circulation in this area? Are there already existing project designs for this area?
- Does feasibility study include assessing an extension or connect to the Bay Trail?
- Why not combine Feasibility Study #1 (estuarine habitat restoration) with Feasibility Study #3 (shoreline habitat and env interpretive sites)? This could facilitate exploration of reusing sediment dredged from the lagoon to enhance shoreline habitat. Also, it is good to plan for a continuum of habitats from subtidal to tidal to upland, given SLR.
- The City should request to be considered for addition to the SF Bay Joint Venture’s list.
- Would like to see greater involvement with the community.

Best,
Linda

If you need additional clarification after you receive the comments, let us know.

Thanks,
Jessica

Jessica Davenport
Deputy Program Manager
SF Bay Area Program, State Coastal Conservancy/
San Francisco Bay Restoration Authority