SAN FRANCISCO BAY RESTORATION AUTHORITY

Staff Recommendation
June 24, 2022

REGIONALLY ADVANCING LIVING SHORELINES IN SAN FRANCISCO BAY PROJECT

Project No. RA-036
Project Manager: Marilyn Latta

RECOMMENDED ACTION: Consideration and authorization to disburse up to $500,000 to the San Francisco Estuary Institute for monitoring, preparation of guidance on programmatic permitting, and establishment of a framework for collaboration on development of living shoreline projects as part of the Regionally Advancing Living Shorelines in San Francisco Bay Project at 10 locations in the Central Bay in San Francisco, Alameda, Contra Costa and Marin counties.

LOCATION: Alameda and Contra Costa Counties, Measure AA Region: East Bay; San Francisco County, Measure AA Region West Bay; and Marin County, Measure AA Region North Bay.

MEASURE AA PROGRAM CATEGORY: Vital Fish, Bird and Wildlife Habitat Program, Integrated Flood Protection Program

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EXHIBITS

Exhibit 1: Project Locations and Site Map

Exhibit 2: Photographs of prior pilot sites to be monitored

Exhibit 3: 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 five hundred thousand dollars ($500,000) to the San Francisco Estuary Institute for monitoring, preparation of guidance on programmatic permitting, and establishment of a framework for collaboration on development of living shoreline projects as part of the Regionally Advancing Living Shorelines in San Francisco Bay Project at 10 locations in the

Central Bay in San Francisco, Alameda, Contra Costa and Marin counties. 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 retained.
3. A plan for acknowledgment of Authority funding.
4. Evidence that all permits and approvals required to implement the monitoring activities have been obtained.

Findings:

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

1. The proposed authorization is consistent with The San Francisco Bay Restoration Authority Act, Gov. Code Sections 66700-66706.
2. The proposed authorization is consistent with The San Francisco Bay Clean Water, Pollution Prevention and Habitat Restoration Measure (Measure AA).

STAFF RECOMMENDATION

PROJECT SUMMARY:

Staff recommends that the San Francisco Bay Restoration Authority (Authority) authorize disbursement of up to $500,000 to the San Francisco Estuary Institute (SFEI), a nonprofit organization, for monitoring, preparation of guidance on programmatic permitting, and establishment of a framework for collaboration on development of living shoreline projects as part of the Regionally Advancing Living Shorelines Project in San Francisco Bay at 10 locations in the Central Bay in San Francisco, Alameda, Contra Costa and Marin counties. The Regionally Advancing Living Shorelines Project in San Francisco Bay (the "project") is a planning project to prepare the designs, environmental review documentation, and permits needed for 10 new living shoreline climate adaptation projects. A goal of the project is to plan and permit the 10 projects in a collaborative, programmatic manner to increase efficiency and serve as a model for other living shorelines projects. The recommended authorization is to fund three of the project's components: monitoring of existing living shorelines pilot projects (which will inform design of future projects), preparation of guidance for a programmatic permit approach, and a framework for collaboration. The remaining project components are anticipated to be funded with funds from other funding partners (applications pending).

Background and Need

The locations of the 10 living shoreline climate adaptation projects are in three heavily urbanized reaches of the Central Bay shoreline (San Francisco, Sausalito to San Rafael, and Hayward to Albany) and include a mix of both highly modified areas of anthropogenic fill and natural shoreline conditions including tidal marshes and mudflats, coarse grain sand and gravel beaches, and rocky intertidal areas that extend down into the submerged nearshore aquatic habitats, which

include shellfish, eelgrass, seaweed, and sand beds and other important fish and wildlife habitats. These shorelines are adjacent to underserved frontline communities that are currently impacted by coastal erosion, flooding, and storm events, and at high future risk from more severe flooding, sea level rise (SLR), and other coastal hazards.

Regionally, climate risk assessments by county are in process or have generally been completed, but specific adaptation plans and guidance on effective and sustainable nature-based adaptation methods haven't been substantially developed. The body of living shorelines and nature-based adaptation pilot demonstration work has been initiated and advanced by a small but growing network of partners led by the State Coastal Conservancy (SCC) (Living Shorelines: The Science and Management of Nature-Based Coastal Protection Bilkovic 2017). With increasing urgency to adapt to climate changes and sea level rise there is a need to rapidly expand capacity, scale-up efforts, and engage a wider network of community partners, municipalities, public and private landowners, and scientific and engineering partners. This capacity-building is critically needed in order to scale up from a limited research stage and integrate and normalize these nature-based restoration approaches within traditional shoreline master planning, sea level rise adaptation planning, and ongoing shoreline management by city, county, state, and private landowners (Bay Adapt Platform 2021, National Wildlife Federation Living Shorelines Regulatory Review 2021, Restore America's Estuaries Living Shorelines: From Barriers to Opportunities Report 2016).

Authority Priority- Advancing Shellfish and Submerged Aquatic Vegetation Goals

This project is a priority for the Authority and was selected in competitive Grant Round Five because it will advance the Measure AA Campaign Goals for shellfish and submerged aquatic vegetation, noted as a priority area to increase focused efforts in the Independent Citizens Oversight Committee Annual Review Letter FY 2019/20. The project will also advance nature-based climate adaptation in San Francisco Bay, a key priority identified in the San Francisco Bay Subtidal Habitat Goals Report, a 50-year conservation plan for the submerged areas of the bay (SCC 2010); and in the Baylands Goals Climate Change Update Report (SCC 2015) which also recommends the integration and advancement of integrated subtidal and intertidal restoration approaches in order to adapt to SLR.

Monitoring of existing pilot sites to inform future designs

Many baywide partners and landowners have been engaged in implementing the recommendations of the Baylands Goals Climate Change Update Report through pilot living shorelines projects to test experimental nature-based approaches in different conditions in the bay from 2012-2022. These projects have resulted in first of its kind data on techniques not previously tried locally, including native oyster reef restoration and various multi-habitat and multi-objective designs for living shorelines and nearshore habitats. The ongoing regional and statewide transfer of knowledge and coordination is critical to programmatically integrate the lessons learned and best practices to date and keep momentum going by seeding this information into additional high-quality site designs and in-the-water projects. One of the project components to be funded through this Authority authorization is monitoring at five existing pilot sites (Exhibit 1 Map). This project component includes monitoring of physical changes to topography and bathymetry, wave attenuation, water quality, and biological monitoring of plant, invertebrate, and other wildlife response at five existing pilot sites. This project component also includes summarizing the monitoring data in a report for the Authority.

Regional Design and Constructability Guidance

As part of the project, but not to be funded through this recommended authorization, the monitoring data will be used along with other regional project data and lessons learned to develop the first-ever design and constructability guidance for living shorelines in San Francisco Bay. The guidance will reduce regulatory burdens and link lessons learned and monitoring outcomes from the demonstration projects conducted to-date to create a programmatic and more efficient approach to regionally advancing new projects. This needed technical guidance is critical to expanding regional capacity to design and implement living shoreline projects, as the field is still in a research stage and there are no local or national standard engineering, ecological design, and constructability guidance documents. The goal for the project is to have local partners work with regional design teams to co-develop a suite of 10 coordinated projects as a set, that link with best available science and identified priority sites and recommended actions in the regional and state plans referenced in the Measure AA Prioritization Criteria section. The guidance will include several habitat methods, alone and in combination: Olympia oyster restoration; eelgrass bed plantings; sand and gravel beach restoration; invasive species removal; shoreline vegetation plantings (Pacific cordgrass, Pacific rockweed, wetland and dune species, etc.); high tide refuge marsh island construction; vertical hybrid green-grey seawall enhancements (living seawalls); enhanced rock slope levees with plantings and other biological treatments (green riprap); and derelict creosote piling removal and artificial structure enhancement.

Programmatic Permitting Framework

One of the biggest constraints to development of innovative nature-based adaptation projects in San Francisco Bay is a lack of understanding about the permits required and process; and the complexity of state and federal permit mechanisms. Programmatic permit pathways can result in clearer submittal criteria and standardized permit conditions. The second project component to be funded by the recommended authorization includes initial planning for programmatic permit pathways to efficiently permit these future 10 projects as a suite of projects in order to address conflicts between agency regulations and achieve higher quality and more efficient environmental consultations and regulatory permitting that covers all activities. This approach will advance permit consultations with six regulatory agencies (US Army Corps of Engineers [USACE], National Marine Fisheries Service [NMFS], US Fish and Wildlife Service [USFWS], San Francisco Bay Regional Water Quality Control Board, California Department of Fish and Wildlife [CDFW], and the San Francisco Bay Conservation and Development Commission[BCDC]) for a cohesive set of projects all at once, with the goal of reducing costs and expediting the permit process compared with doing so project by project. The project will coordinate with the Bay Restoration Regional Integration Team (BRRIT) and other agencies to develop programmatic permit pathways and consultations on 30-60% restoration designs for 10 living shoreline projects. This may include development of a new regionwide general permit specific to these project types, which could be a major step forward and model that can be used by this project and other baywide landowners and groups who want to develop living shorelines projects. Based on the design guidance and work conducted to date, preliminary consultations with regulatory agencies will focus on programmatic permit pathways and may include development of a new USACE regionwide general permit or other permits specific to these projects. The initial planning on the permitting pathway framework will be summarized in a report to the Authority and then furthered and implemented as part of the project.

Coordinated Regional Approach to Maximize Efficient, High Quality Project Designs

The project's comprehensive four-county approach with multiple regional landowners, community groups, natural resource agencies, and public works departments will provide larger direct community resilience benefits from the future green infrastructure; and achieve environmental outcomes sooner to fish and wildlife including oyster and mussel beds, eelgrass and algal beds, endangered and protected salmon, steelhead, sturgeon, herring, surfperch, and additional estuarine species and essential fish habitats. Working together as a cohesive regional collaborative will benefit the landowners and communities included in this project; and will also generate new technical resources and permit pathways that will provide transferable models to additional local partners in San Francisco Bay and other estuaries statewide. The third project component includes initial planning to establish a framework for collaboration. This work includes collaboratively informing other landowners, project proponents, community groups, and residents from frontline communities in the Central Bay regarding climate resilience planning for living shorelines, subtidal and intertidal habitats and species, protection measures, best design practices, lessons learned, and permit guidance by supporting a Living Shorelines Collaborative. Funding through the proposed Authority grant will start initial planning for this forum to allow the sharing of technical information, discuss design and permitting issues, identify opportunities to leverage synergies, and foster a stronger community of living shoreline partners. The initial planning on the Collaborative will be summarized in a report to the Authority, and then furthered and implemented through anticipated match funding.

Qualifications of Partners

The community and scientific partners, municipal and private landowners, and resource agencies in this project have been engaged in pilot living shorelines projects to test experimental nature-based approaches in different conditions in the bay since 2012. These projects have resulted in new data on techniques not previously tried locally or in California, including Pacific cordgrass revegetation, Olympia oyster restoration, eelgrass, seaweed and vegetated shoreline plantings, coarse beach designs, and others. These innovative multi-habitat, multi-objective designs have increased habitat function and connectivity, while also buffering shoreline communities from sea level rise and erosion. Initial demonstration projects have resulted in increased public awareness about the values of these submerged and shoreline areas in the bay, community engagement models, and best practices for design, permitting, and construction that can be applied to improve and expedite future projects.

There are no known barriers to implementation and there is broad support for the project. While the exact habitat methods and locations at the 10 sites are to be determined, the future plan is to apply the design guidance to development of 10 designs to 30-60% level under a collaborative and programmatic approach. A key goal is regional information sharing and transferability so that others can benefit from this work, through design guidance and permit pathways that will be helpful to current and future projects and partners beyond the 10 direct sites.

Site Descriptions: This project is different from typical projects that have a single site and is designed specifically in a multi-site approach to collaboratively plan and permit a suite of projects at once in order to support landowners and municipalities in developing experience and increasing engagement in designing and permitting living shoreline projects. Please see a short description below of the sites included in the regional project that spans four counties in three reaches of the Central Bay.

San Francisco Shoreline (three project sites)
Port of San Francisco (Port) has a varied shoreline, with natural and human-made features, including **Mission Creek to Islais Creek, Pier 94 wetlands** and **Heron's Head Park**. The Port has established a goal of improving habitat and designing future coastal flood defenses through Engineering with Nature (EWN), a USACE initiative to align engineering and natural processes to deliver multi-benefit solutions using nature-based approaches as a critical path toward climate adaptation. The San Francisco District of USACE has recently become the first West Coast EWN proving ground, signifying a commitment on the part of the District to integrate nature-based approaches into studies and projects across its missions. This Authority-funded project will be a step forward for the Port to work with the project team and advance pilot nature-based projects including living seawall demonstration projects that will help to inform the full seawall replacement project to be conducted in the 2030's. The Authority has previously funded work at Heron's Head, and this project would expand into designs for additional complementary eelgrass restoration in the nearshore areas adjacent to the first project. SCC has funded beach and marsh restoration work at Pier 94, and this project would expand into additional complementary designs for oyster treatments in the adjacent nearshore areas.

Marin County Shoreline (three project sites)
The existing **San Rafael Living Shorelines pilot site**, led by SCC, San Francisco State University (SFSU), Smithsonian Environmental Research Center, and other partners including landowner The Nature Conservancy, is widely known as the first larger-scale demonstration site for oyster reefs and eelgrass restoration in a living shorelines approach, and has provided a model for projects in Humboldt Bay, Newport Bay, San Diego Bay, and other areas of California and San Francisco Bay. The City of Sausalito manages **Dunphy Park** on the Sausalito shoreline, where recent terrestrial park and public access improvements link well with a vision for a connected extension into the bay with additional nearshore oyster and eelgrass restoration included in this proposal. CDFW manages the **Corte Madera Marsh Ecological Reserve**, and partners Estuary and Ocean Science Center and Marin County Public Works Department have developed promising early ideas for placement of coarse sediment to create marsh fringing beaches to protect the marsh from ongoing and significant marsh edge erosion and loss of tidal marsh habitat.

Alameda and Contra Costa Counties, East Bay Shoreline (four project sites)
The project includes landowners in the East Bay shoreline from Hayward to Albany, including East Bay Regional Parks District, City of Berkeley, and City of Albany. Unique opportunities exist to develop broader transition zones due to several locations, including **Berkeley North Basin**, where development is some distance back from the existing shoreline margin. Other site opportunities along this shoreline include nearshore designs adjacent to a future new interchange at **Ashby Spit** on Highway 80, improvement of failing riprap north and south of **Point Isabel**, and subtidal and intertidal components to complement **Hayward Shoreline** climate adaptation planning. The site design planning in this proposal will be developed for these specific locations (Exhibit 1 Map).

PROJECT FINANCING

San Francisco Bay Restoration Authority	$500,000

National Fish and Wildlife Foundation (pre-proposal pending)	$1,000,000
U.S. Environmental Protection Agency (proposal to be submitted)	$1,500,000
Coastal Conservancy (pre-proposal pending)	$3,500,000
Project Total	**$6,000,000**

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

Consistent with Section 66704.5(a), SFEI is a non-profit 501(c)(3) organization. Consistent with 66704.5(b)(1) the project will "restore, protect, or enhance tidal wetlands, managed ponds, or natural habitats on the shoreline in the San Francisco Bay area." The project will advance climate adaptation planning for living shorelines at 10 sites; and will provide shoreline protection as well as healthier habitat area and function to native fish, birds, and other wildlife. Consistent with Section 66704.5(b)(2), the project will "build or enhance shoreline levees or other flood management features that are part of a project" by designing innovative approaches that will protect the shoreline from wave energy and erosion while also enhancing shoreline habitats. Consistent with Section 66704(e) this award will be used to support planning and monitoring.

CONSISTENCY WITH MEASURE AA PROGRAMS AND ACTIVITIES:

This authorization is consistent with Measure AA's Vital Fish, Bird and Wildlife Habitat Program since it will lead to projects that restore subtidal and shoreline habitats to benefit wildlife such as Pacific herring, coho salmon, steelhead, Dungeness crab, eelgrass, Olympia oysters, Pacific rockweed, and additional species of plants, birds, and other wildlife. This authorization is also consistent with the Integrated Flood Protection Program since it will design multi-objective and multi-habitat approaches to adapt to sea level rise and coastal storms which cause flooding and erosion of shorelines in San Francisco Bay.

CONSISTENCY WITH MEASURE AA PRIORITIZATION CRITERIA:

1. **Greatest positive impact:** Living shorelines have resulted in documented physical and biological benefits in San Francisco Bay. The three project components to be funded by this authorization (pilot site monitoring, preparation of technical guidance and initial planning of a programmatic permitting and collaboration frameworks are necessary elements of the project, which will be completed with anticipated match funding to result in 10 site-specific designs. This work will leverage with additional match funded work to result in 10 new site-based projects that demonstrate best techniques through the use of established best available scientific knowledge; implement recommendations in adopted regional and local plans and relevant studies; and will provide the greatest potential benefits to the Bay ecosystem. In addition, the restoration projects will be designed to provide co-benefits, including, but not limited to, improved flood protection, public access, local workforce development, local job training in green infrastructure, potential beneficial reuse of dredged material, and carbon sequestration.

2. **Greatest long-term impact:** The monitoring data and new site designs will have a long-term impact through design of climate adaptation methods that focus on enhanced subtidal and intertidal shoreline habitats that will continue to grow and adapt to SLR, benefiting bay aquatic species such as endangered Ridgway's rails, Coho and Chinook salmon, Steelhead, Pacific herring, Pacific cordgrass, Olympia oysters, and other important species that have been negatively impacted by artificial fill. The project is part of a continuing effort by SCC, BCDC, NMFS, San Francisco Estuary Partnership, and the Ocean Protection Council to promote climate adaptation, restoration, and long-term management of subtidal habitats in the San Francisco Bay.

3. **Leveraging resources and partnerships:** The project will leverage state and federal resources, and public/private partnerships. SFEI and SCC have developed a strong regional network of organizational partners, from local, state, and federal agencies to universities, consultants, engineering firms, and community groups; and the project has strong support. The partners engage multiple stakeholders in planning meetings and in technical forums and share information about project status through presentations and media coverage. The SCC, National Fish and Wildlife Foundation, US EPA, USFWS, NMFS, and others have funded the five existing pilot projects to be monitored at San Rafael, Hayward, Richmond Point Pinole, Richmond Point San Pablo; and the Authority has funded pending enhanced rock slope protection at Terminal Four. The project is supported by the SCC, and a network of diverse stakeholders including Smithsonian Environmental Research Center, SF State University's Estuary and Ocean Science Center, Port of San Francisco, Marin County Department of Public Works, the Cities of Sausalito, Berkeley, Albany, and Emeryville, CDFW, East Bay Regional Park District Marin and Golden Gate Audubon Societies, Merkel & Associates, and additional landowners, agencies, and partners. The high capacity of the applicants is demonstrated through multiple prior projects; and includes local, regional, and state landowners, non-profits, community organizations, and experts in various design, permitting, engineering, and ecological disciplines.

4. **Benefits to economy:** The project is a priority for the Authority, SFEI, and SCC because it will provide job opportunities and economic benefits. The project will use the services of multiple monitoring contractors and will plan for future calls for engineers and ecologists selected through an open, competitive bid process. To the extent that the project funding allows, bidding will be subject to local business and hire requirements, including Local Employment and Living Wage.

5. **Monitoring, maintenance, and stewardship:** The project components funded by this authorization will be successful if all monitoring activities at existing pilot sites are completed successfully such that the results can be used to inform future designs. Another key element of success is planning for robust local and underserved community engagement in the Living Shorelines Collaborative, and a plan for programmatic permit framework for the future 10 site designs. SFEI and SCC will oversee the monitoring activities to confirm they comply with existing pilot project permit requirements including biological and physical monitoring. SFEI will provide monitoring reports and engagement and permitting plans to confirm goals have been met.

6. **Coastal Conservancy's San Francisco Bay Area Conservancy Program.** The project is consistent with SCC's San Francisco Bay Area Conservancy Program's Criteria in several ways summarized below.

It will promote and implement three state and regional plans:

San Francisco Bay Subtidal Habitat Goals Report (2010, jointly authored by SCC, California Ocean Protection Council, NOAA NMFS and Restoration Center, BCDC, and San Francisco Estuary Partnership), a 50-year Conservation Plan for submerged habitats in San Francisco Bay which recommends the removal of derelict piling structures in combination with piloting living shoreline techniques in San Francisco Bay. The project helps to implement several goals, including **Integrated Habitats Restoration** Goal 1 Understand the ecosystem services supported by marsh-subtidal integration and living shorelines, Goal 2 Develop best practices for integrating subtidal restoration with adjacent wetlands, and Goal 3 Develop best practices for pilot projects to create living shorelines. The project also addresses **Subtidal-Wetland Design Integration** Goal 1 Explore the integration of upland, intertidal, and subtidal habitats in SF Bay, Goal 2 Integrate habitat flexibility to increase resilience in the face of long-term change at habitat restoration sites in the bay, Goal 3 Explore the use of living shoreline projects as a way to achieve multiple benefits in future shoreline restoration. It also addresses Artificial Structures Goal 2 Using a pilot project approach to remove artificial structures and creosote pilings at targeted sites in combination with active or passive restoration of natural habitats that provide environmental benefits with reduced engineering of hard structures (a "living shoreline"). In addition, the project implements climate change recommendations including **Foundational Science Goal** 3 Understand the long-term prospects for subtidal habitats, Goal 4 Develop mechanisms to adapt to climate change; and **Public Access and Awareness** Goal 1 increase public awareness and foster support for subtidal habitat protection.

Baylands Goals Science Update (2015): The project is consistent with the Update's recommendations to increase resilience to sea level rise by removing fill and cleaning up the shoreline along the Bay edge and enhancing subtidal and intertidal physical habitat and functions.

State Coastal Conservancy's Strategic Plan (2018-2022): The Project is consistent with Objectives 12A, 12B, and 12D which call for the protection of tidal wetlands and subtidal habitat, protection of wildlife, and the enhancement of tidal wetlands and subtidal habitat.

7. **San Francisco Bay Conservation and Development Commission's Coastal Management Program.** The San Francisco Bay Plan ("Bay Plan") was completed and adopted by BCDC in 1968 pursuant to the McAteer-Petris Act of 1965 and last amended in 2019 to include the beneficial fill for habitat policies. The project is consistent with the following policies articulated in Part III, Findings and Policy Section of the Bay Plan:

> Subtidal Areas Policy 5 (adopted April 2002): "The [BCDC] should continue to support and encourage expansion of scientific information on the Bay's subtidal areas, including: (a) inventory and description of the Bay's subtidal areas; (b) the relationship between the Bay's physical regime and biological populations; …(e) where and how restoration should occur."

The proposed project will assist in implementation of this policy by providing additional data on best techniques for restoration at specific sites, describe the densities, locations, and species associated with subtidal habitats at that site, and provide a basis for engineering and physical benefits of restoring habitat to buffer and protect shorelines to adapt to sea level rise and prevent shoreline erosion.

> Fish, Other Aquatic Organisms and Wildlife Policy 1 (amended April 2002): "To assure the benefits of fish, other aquatic organisms and wildlife for future generations, to the greatest extent feasible, the Bay's tidal marshes, tidal flats, and subtidal habitat should be conserved, restored and increased."

The project is consistent with this policy because it will plan for restoration designs that will increase and improve subtidal and intertidal habitats in San Francisco Bay.

> Tidal Marshes and Tidal Flats Policies 10: "Based on scientific ecological analysis, project need, and consultation with the relevant federal and state resource agencies, fill may be authorized for habitat enhancement, restoration, or sea level rise adaptation of habitat."

The project is consistent with this policy because it will plan for restoration designs using beneficial fill (sediment, oyster shell, sand, and others) that will increase and improve subtidal and intertidal habitats and climate resiliency in San Francisco Bay.

> Tidal Marshes and Tidal Flats Policies 11: "The Commission should encourage and authorize pilot and demonstration projects that address sea level rise adaptation of Bay habitats. These projects should include appropriately detailed experimental design and monitoring to inform initial and future work. Project progress and outcomes should be analyzed and reported expeditiously. The size, design, and management of pilot and demonstration projects should be such that it will minimize the project's potential to negatively impact Bay habitats and species."

The project is consistent with this policy because it will plan for sea level rise adaptation designs that will increase and improve shoreline resilience and resilience of subtidal and intertidal habitats in San Francisco Bay.

> Shoreline Protection Policy 5: "All shoreline protection projects should evaluate the use of natural and nature-based features such as marsh vegetation, levees with transitional ecotone habitat, mudflats, beaches, and oyster reefs, and should incorporate these features to the greatest extent practicable. Ecosystem benefits, including habitat and water quality improvement, should be considered in determining the amount of fill necessary for the project purpose. Suitability and sustainability of proposed shoreline protection and restoration strategies at the project site should be determined using the best available science on shoreline adaptation and restoration…" (As amended 2019)

The project is directly consistent with this policy because it has a focus on evaluating the use of integrated subtidal and intertidal habitats for shoreline protection and will evaluate ecosystem benefits and the minimum amount of fill necessary to achieve nature-based shoreline protection.

8. **San Francisco Bay Joint Venture's Implementation Strategy:** The project is consistent with the Joint Venture's Implementation Strategy in that it will help clean up marine debris and fill from the bay and enhance subtidal and intertidal shoreline habitats. The project is included on the Joint Venture's list, and the project proponents consulted with the Joint Venture staff and the Conservation Committee prior to applying for funding and received strong support.

COMPLIANCE WITH CEQA:

The proposed project is categorically exempt from the California Environmental Quality Act pursuant to 14 California Code of Regulations Section 15306, which exempts basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource. The project qualifies for this exemption because it is a planning project consisting of basic data collection (monitoring of existing pilot projects) and planning for programmatic permitting and collaboration. Not only is this project exempt, the living shoreline projects to be designed through this project will have a net positive effect on subtidal and intertidal areas of the bay through the monitoring and design of habitats that support multiple species of invertebrates, fish, and wildlife; act as a nursery for spawning and rearing of aquatic species; and help to stabilize sediments, reduce wave action, and protect critical wetland sites that have already been identified as regionally important.

Upon approval of the project, staff will file a Notice of Exemption.