

COASTAL CONSERVANCY

Staff Recommendation
May 24, 2018

Advancing Nature-Based Adaptation Solutions in Marin County

Project No. 16-024-99
Project Managers: Marilyn Latta and Kelly Malinowski

RECOMMENDED ACTION: Authorization to disburse up to \$750,000 in funds provided to the Conservancy by the Marin Community Foundation to nonprofit organizations and public agencies for four projects that address the impacts of climate change and sea level rise, particularly on underserved communities, in Marin County.

LOCATION: San Francisco Bay shoreline and the Pacific coast shoreline, Marin County

PROGRAM CATEGORY: San Francisco Bay Area Conservancy

EXHIBITS

- Exhibit 1: [April 25, 2017 Staff Recommendation \(Year One Projects\)](#)
- Exhibit 2: [September 13, 2017 Advancing Nature-Based Adaptation Solutions in Marin County: Year Two Grant Announcement & Application](#)
- Exhibit 3: [Regional map of locations of the proposed projects.](#)

RESOLUTION AND FINDINGS:

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Sections 31113 and 31160-31165 of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes disbursement of up to seven hundred fifty thousand dollars (\$750,000), provided to the Conservancy under a grant from the Marin Community Foundation, to the following nonprofit organizations and public agencies for the projects, described below, that address the impacts of climate change and sea level rise in Marin County:

1. **Conservation Corps North Bay: Nature-Based Wave Attenuation Project – Dunphy Park.** One hundred eighty thousand dollars (\$180,000) to evaluate a proposed, conceptual design for a detached 650-foot-long traditional sheet pile breakwater to be placed offshore from Dunphy Park, and to develop a nature-based solution for wave attenuation along the Dunphy Park shoreline as an alternative to the traditional engineered breakwater conceptual design being proposed and considered.

2. **Marin County Community Development Agency: *Nature-Based Adaptation at Stinson Beach*.** One hundred ninety thousand dollars (\$190,000) to assess the feasibility of a nature-based green infrastructure project at Stinson Beach to develop a resilient beach and dune ecosystem that enhances existing habitats and public access, supports vibrant recreational opportunities for users of all socioeconomic backgrounds, and provides flood and erosion protection against existing coastal hazards and future sea level rise.
3. **Marin County Flood Control District: *Constructed Bay Beaches as Soft Shoreline Alternatives to Hard Engineering*.** One hundred ninety thousand dollars (\$190,000) to develop conceptual designs for three sites that will utilize variations of natural bay beach design solutions for erosion problems.
4. **San Francisco State University, Romberg Tiburon Center: *Nature-Based Rocky Habitat Restoration and Education*.** One hundred ninety thousand dollars (\$190,000) to address knowledge gaps regarding rocky habitats, advance nature-based adaptation planning, and engage local community members through ecological research, restoration and adaptation planning and design, and community science engagement and education.

The authorization is subject to the condition that prior to the disbursement of funds, each grantee shall submit for the review and approval of the Conservancy’s Executive Officer a final work program, schedule, budget, names of any project contractors, a plan for outreach and for acknowledging Conservancy funding, and any agreements determined necessary for the project by the Conservancy’s Executive Officer.”

Staff further recommends that the Conservancy adopt the following findings:

“Based on the accompanying staff report and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed authorization is consistent with Chapters 3 and 4.5 of Division 21 of the Public Resources Code, regarding addressing the impacts and potential impacts of climate change on resources within its jurisdiction (Ch.3), and the resource and recreational goals in the San Francisco Bay Area (Ch. 4.5).
2. The proposed project is consistent with the current Conservancy Project Selection Criteria and Guidelines.
3. Conservation Corps North Bay is a nonprofit organization existing under section 501(c)(3) of the U.S. Internal Revenue Code, and whose purposes are consistent with Division 21 of the Public Resources Code.”

PROJECT SUMMARY:

Staff recommends that the Conservancy authorize disbursement of up to \$750,000 of funding, provided by a grant to the Conservancy from the Marin Community Foundation’s (MCF) Buck Family Fund, to a nonprofit organization and public agencies for four projects that address the impacts of climate change and sea level rise, particularly on underserved communities, in Marin County. The purpose of this grant program is to develop and test new approaches to nature-based adaptation on the Marin County shoreline, increase knowledge and capacity-building for nature-based adaptation design and implementation in Marin County, and complement the county level planning that is already underway for sea level rise in Marin County.

Grant Program with funds from Marin Community Foundation

This funding initiative between the Conservancy and MCF, the “Advancing Nature-Based Solutions in Marin County” program, originated in 2016 following a strategic planning process MCF undertook to develop new focal areas for their environmental programs, which identified climate change and shoreline resilience as two of their top priorities.

Conservancy staff then worked with MCF to identify areas of interest where MCF funding could make a significant difference in Marin County and would help implement several regional recommendations developed by the Conservancy and local, state, and federal agencies. The development of this grant program is further described in the April 25, 2017 Staff Recommendation’s Project Description section (Exhibit 1).

The objectives of the Advancing Nature-Based Solutions in Marin County grant program are to develop, highlight and test new strategies in climate adaptation, as well as promote research, education and outreach necessary to developing communities’ capacity to adapt to sea level rise in Marin County. An additional objective is to engage and involve underserved communities in this process.

MCF approved the first year of funding in June 2016, and the Conservancy approved four Year One projects in April 25, 2017 (See Exhibit 1). Building on the successful implementation of the first year of funding, MCF and the Conservancy are continuing their partnership for another year.

Focus on nature-based shoreline adaptation and climate resilience

The impacts of climate change, specifically sea level rise, will be exacerbated in those ecosystems that are less intact and functional, including subtidal environments (i.e. oyster and eelgrass beds) and bayland habitats (i.e. tidal marshes). The Advancing Nature-Based Adaptation Solutions grant program seeks to show how restored baylands ecosystems and subtidal environments can help improve ecological health *and* enhance flood control in populated areas. The grant program also has a focus on engaging and involving underserved communities in public outreach and in the planning and implementation of the nature-based projects. Additional description of the grant program’s approach is provided in the April 25, 2017 Staff Recommendation’s Project Description section (Exhibit 1).

MCF and the Conservancy solicited proposals for Year Two following the processes established through the first grant round (Exhibit 2). In November 2017, the Conservancy received nine proposals requesting a total of \$1,622,087 in funding. Conservancy staff and MCF reviewed applications with respect to the grant program focal areas and the Conservancy’s enabling legislation and project selection criteria, and selected four Year Two projects to recommend to the Conservancy for funding totaling an additional \$750,000.

The ***Nature-Based Wave Attenuation Project – Dunphy Park*** will improve resilience to sea level rise by reducing wave-induced shoreline erosion and provide a calmer environment for boat moorage. Data collected from this project will be translated and reported so that research can serve as a model for similar projects throughout the Bay Area and beyond. The project will also assess the protection, and potential expansion, of eelgrass and native oyster beds offshore of Dunphy Park’s shoreline, for each proposed conceptual design, as well as educate and engage local community members about the need for and value of nature-based adaptation solutions. The Conservation Corps North Bay employs youth and young adults from Marin City, the Canal District, and other underserved communities in Marin County and has a strong track record of

implementing nature-based habitat restoration projects and has an extensive network of partners they have worked with over many years.

The ***Nature-Based Adaptation Project at Stinson Beach*** will investigate the feasibility of nature-based adaptation measures, such as dune restoration, within the context of a long-term adaptation plan. The feasibility study will look at a range of geometries formed with sand and dune plants, and cobble. Each alternative will include a detailed description with dimensions, materials, quantities and engineers' estimates of construction costs and reconstruction frequency. The plan will be sufficiently detailed to assess public support and regulatory feasibility to formulate next steps. Marin County Community Development Agency recently completed Sea Level Rise Assessments for both the bayshore and outer coast, and this work will be part of the climate change adaptation planning that is underway in the county. While Stinson Beach is in a fairly affluent community, it serves visitors from underserved communities in Marin County and the Bay Area.

In the ***Constructed Bay Beaches as Soft Shoreline Alternatives to Hard Engineering Project***, each site demonstrates a different potential design solution to a different shoreline erosion issue. The conceptual designs are intended to provide County, State, and Federal regulatory and planning agencies a sound foundation for assessing feasible "environmentally superior" alternatives for Marin shoreline stabilization projects. The project also includes demonstration projects at each site that will also provide quantitative design data to private sector engineering firms to further the implementation of natural beach shoreline solutions to combat wind-wave erosion and the rising bay tide level. The Marin County Flood Control District has demonstrated expertise in restoring coarse grained beaches, including the successful Arambaru Island Restoration Project constructed in 2012. The proposed planning builds on this work and incorporates lessons learned from their prior projects.

The ***Nature-Based Rocky Habitat Restoration and Education Project*** will document community structure of natural rock and cobble habitats and compare them to traditional grey riprap habitats and vertical seawalls with emphasis on those supporting rockweeds and native oysters. The restoration and adaptation planning and design of the restored rocky bluff and future seawall will be informed by research efforts, as well as local experts, and will involve adaptation pilot projects at SFSU's Estuary and Ocean Science Center. The community science engagement and education component will engage community educators and school groups from underserved communities in learning about the ecology of rock, cobble, and pocket beach habitats and coastal armoring in the estuary, as well as the concepts of nature-based adaptation and restoration approaches. SFSU has extensive expertise in conservation planning and site-based living shorelines approaches, and the site provides an excellent venue for hosting educational events to involve the community in the planning for this project.

Site Description: All of the proposed projects serve the San Francisco Bay shoreline region within Marin County, one of the nine counties under the jurisdiction of the San Francisco Bay Area Conservancy Program. See Exhibit 3 for a regional map depicting the locations of the projects.

Project History: In 2007, the Conservancy incorporated specific measures to address climate change in its strategic planning process. In 2009, the Conservancy adopted a comprehensive Climate Change Policy that informs all aspects of its work and amended its Project Selection Criteria to ensure that all Conservancy projects are designed with climate change in mind. Then, in 2012, the legislature and governor empowered the Conservancy with new authority (SB 1066,

Lieu) to prepare for and adapt to the effects of climate change and take action against its causes, by adding Public Resources Code section 31113 to its enabling legislation. Following the adoption of SB 1066 and the addition of section 31113, the Conservancy quickly responded with the launch of its Climate Ready Program, and Climate Ready Grants, through which the Conservancy has held three grant rounds. This partnership with MCF was established in 2016 to administer grants to advance nature-based adaptation strategies in Marin County, which also aligns with the Conservancy’s priorities and past efforts related to climate change work.

The Conservancy has a long history of supporting projects to enhance, protect and steward the Marin shoreline. The four new recommended projects will help to leverage prior Conservancy investments in the San Francisco Bay Trail in Marin County, BayWAVE Marin County climate risk assessment, and San Francisco Bay Living Shorelines work on the San Rafael Shoreline. Conservancy staff are currently in discussions with MCF about continuing this grant program with additional funds to support one additional grant cycle in subsequent Year Three.

PROJECT FINANCING

Coastal Conservancy	\$750,000
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All funds provided by a grant from the Marin Community Foundation

Project Total	\$750,000
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Project Breakdown:

Nature-Based Wave Attenuation Project-Dunphy Park <i>Conservation Corps North Bay</i>	\$180,000
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Nature-Based Adaptation at Stinson Beach <i>Marin County Community Development Agency</i>	\$190,000
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Constructed Bay Beaches as Soft Shoreline Alternative to Hard Engineering <i>Marin County Flood Control District</i>	\$190,000
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Nature-Based Rocky Habitat Restoration and Education <i>San Francisco State University, Romberg Tiburon Center</i>	\$190,000
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As discussed under the Project Summary and Project History sections above, the source of Conservancy funds for the four recommended projects comes from MCF, under two priorities within their environmental program: climate change and shoreline resilience. MCF participated in the selection of the projects, and the four selected projects will fully carry out the objectives of the Advancing Nature-Based Solutions grant program. An additional \$100,000 is being provided by MCF under the grant program for Conservancy staff support and administration of the selected projects.

CONSISTENCY WITH CONSERVANCY'S ENABLING LEGISLATION:

The proposed projects are consistent with Public Resources Code sections 31113, regarding projects to address the impacts of climate change, and 31160-31165 (Chapter 4.5 of Division 21), regarding projects carrying out the objectives of the San Francisco Bay Area Conservancy Program. All four of the proposed projects are located within the County of Marin, which is one of the nine San Francisco Bay counties required by Section 31162.

Section 31113, Address Impacts of Climate Change.

Pursuant to PRC Section 31113, the Conservancy is authorized to address the impacts and potential impacts of climate change on resources within its jurisdiction, and may undertake projects that include, but are not limited to, reducing greenhouse gas emissions, and addressing extreme weather events, sea level rise, storm surge, beach and bluff erosion, salt water intrusion, flooding, and other coastal hazards that threaten coastal communities, infrastructure, and natural resources.

Consistent with this section, the four proposed projects will address the potential impacts of climate change by enhancing coastal and bayshore wetlands and shorelines, reducing coastal and bayshore hazards due to sea level rise and storm surge, and reducing beach and bluff erosion, in an effort to protect coastal and bay communities, infrastructure, and natural resources from the impacts of sea level rise.

Chapter 4.5: San Francisco Bay Area Conservancy Program

Under Section 31162(b), the Conservancy may undertake projects and award grants in the nine-county San Francisco Bay Area to achieve the goal of protecting, restoring and enhancing natural habitats of regional importance. Consistent with this section, the recommended projects consist of work that will result in sound scientific restoration planning and implementation to help protect, restore and enhance shoreline habitats of regional importance within the Bay Area.

Under Section 31163(a), the Conservancy is required to cooperate with the Bay Conservation and Development Commission (BCDC), other regional government bodies, and other interested parties in identifying and adopting long-term resource goals for San Francisco Bay area. The recommended projects include design goals that came about from the collaborative planning of four primary agencies that developed the San Francisco Bay Subtidal Habitat Goals (Conservancy, BCDC, National Oceanic and Atmospheric Association (NOAA), and the San Francisco Estuary Partnership), and is further consistent with the collaborative planning effort behind the Baylands Ecosystem Habitat Goals Science Update.

The recommended projects are appropriate for prioritization under the selection criteria set forth in Section 31163(c) in that: (1) they are consistent with San Francisco Bay Subtidal Habitat Goals report, the Baylands Ecosystem Habitat Goals Science Update, and the San Francisco Bay Plan ("Bay Plan"), as described below; (2) they involve the coordination of environmental solutions across several different agencies and many different jurisdictions within the San Francisco Bay Area, as mentioned above; (3) they will be implemented in a timely manner, with partners prepared to proceed; (4) they provide opportunities for habitat improvement, flood and sea level rise mitigation benefits that could be lost if the projects are not implemented quickly; and (5) include outside grant funds from other sources of funding or assistance.

In addition, under Section 31165, the Conservancy may undertake projects and award grants for activities that are compatible with the preservation, restoration, or enhancement of ocean, coastal

and bay resources. The proposed authorization will provide for design and pilot projects that will serve as critical background data for future, large scale nature-based adaptation projects for additional shoreline sections in the Bay.

**CONSISTENCY WITH CONSERVANCY'S 2018 STRATEGIC PLAN
GOAL(S) & OBJECTIVE(S):**

The four projects described in the “Project Summary” section assist the Conservancy with meeting a number of its 2018-2022 Strategic Plan Goals and Objectives. Relevant Strategic Plan goals are listed below.

Consistent with Goal 8, Objective B, all four projects will plan and design adaptation projects to increase resilience to sea level rise and other climate change impacts.

Consistent with Goal 12, Objective C, all four projects will develop plans for enhancement of shorelines and subtidal habitat.

Consistent with Goal 15, Objective B, the Conservancy will spearhead a regional collaborative that furthers Conservancy goals and objectives and supports the work of partner organizations.

**CONSISTENCY WITH CONSERVANCY'S
PROJECT SELECTION CRITERIA & GUIDELINES:**

The proposed projects are consistent with the Conservancy's Project Selection Criteria and Guidelines, last updated on October 2, 2014, in the following respects:

Required Criteria

1. **Promotion of the Conservancy's statutory programs and purposes:** See the “Consistency with Conservancy's Enabling Legislation” section above.
2. **Consistency with purposes of the funding source:** See the “Project Financing” section above.
3. **Promotion and implementation of state plans and policies:**
 - a. The four proposed projects are consistent with the state plans and policies listed below, since each of the four proposed projects seeks to enhance resilience to climate change:
 - i. *San Francisco Bay Subtidal Habitat Goals Report* (2010, jointly authored by the State Coastal Conservancy, California Ocean Protection Council, National Oceanic and Atmospheric Administration, National Marine Fisheries Service and Restoration Center, San Francisco Bay Conservation and Development Commission, and San Francisco Estuary Partnership), which is a 50-year Conservation Plan for submerged habitats in San Francisco Bay, and includes recommendations for climate adaptation such as testing living shorelines approaches.

- ii. *Baylands Ecosystem Habitat Goals Science Update* (2015, led by the Conservancy with more than 100 contributing entities), which provides a summary of projected climate changes to the San Francisco Estuary and specific recommendations for regional actions to adapt to sea level rise.
 - iii. *Executive Order B-30-15* (2015, Edmund G. Brown, Governor of the State of California), which instructs all state agencies to implement flexible and adaptive approaches to prepare for uncertain climate impacts and to prioritize natural infrastructure solutions.
 - iv. *Safeguarding California: Reducing Climate Risk* (2014 update to the 2009 *California Climate Adaptation Strategy*), which seeks to “support hazard mitigation by investing in green infrastructure and other protective structures to address sea level rise, managed shoreline retreat, stabilize river banks and restore and create wetlands...” (p.70), and also seeks to improve management practices for coastal and ocean ecosystems and resources by including climate adaptation strategies.
4. **Support of the public:** The four proposed projects enjoy broad support throughout Marin County, including support from the County of Marin, City of Sausalito, City of Tiburon, the Marin Conservation League, Save San Francisco Bay Association, and other community groups.
 5. **Location:** All of the four proposed projects are located within the San Francisco Bay shoreline of Marin County, within the nine-county San Francisco Bay region; or within the Pacific Coast shoreline of Marin County.
 6. **Need:** Without this grant program and funding provided by MCF through the Conservancy, the proposed projects would either not proceed or would have to be greatly scaled back.
 7. **Greater-than-local interest:** Though all four proposed projects are located in Marin County, lessons learned and best practices can be leveraged and translated throughout the nine county San Francisco Bay Area and along the coast of California.
 8. **Sea level rise vulnerability:** All four of the proposed projects address the impacts of sea-level rise directly as a project goal. Funding the proposed projects takes a proactive step to protect Marin County’s bayshore communities and economy, as well as their natural resources, public health, and recreational amenities from the impacts of sea level rise.

Additional Criteria

9. **Urgency:** Due to the threat of rapidly-accelerating sea level rise, and the consequent need to protect Marin County’s assets from future impacts, it is urgent that we act now to implement these projects that seek to test new strategies and complete planning processes to adapt to sea level rise.
10. **Resolution of more than one issue:** Each of the four proposed projects benefit both restoration and natural resource protection goals, as well as sea level rise adaptation goals, that protect the natural, built, and human communities of Marin County.
11. **Leverage:** See the “Project Financing” section above.

12. **Innovation:** Each of the four proposed projects develop, employ, and test innovative new strategies for sea level rise adaptation planning and adaptation. These include development of conceptual plans and pilot projects that focus on design of living shorelines, living breakwaters, living seawalls, coastal dunes, bay beaches, bay bluffs, rocky shorelines, and other adaptation measures to be developed.
13. **Readiness:** Each of the four proposed projects are ready to begin work, if and when funding is authorized, and can complete their respective projects in a timely manner.
14. **Realization of prior Conservancy goals:** “See “Project History” above.”
15. **Return to Conservancy:** See the “Project Financing” section above.
16. **Cooperation:** Each of the four proposed project leads are collaborating with another entity to assist with community outreach and engagement, and are intended to foster cooperation across multiple institutional and natural boundaries to address the impacts of climate change.
17. **Vulnerability from climate change impacts other than sea level rise:** Each of the four proposed projects is focused on climate change adaptation and their goal is to increase the resilience of the project area to projected climate change impacts, including sea level rise, increased storm surge and shoreline erosion, and shifting temperature and salinity regimes.

CONSISTENCY WITH SAN FRANCISCO BAY PLAN:

The four proposed projects are within the jurisdiction of the San Francisco Bay Conservation and Development Commission (BCDC), and are consistent with the policies of BCDC’s San Francisco Bay Plan (Bay Plan) as discussed below.

The proposed projects are consistent with Part IV, Climate Change policies, because they will address the resilience of the project areas to climate change, and the capacity of the project areas to adapt to climate change impacts such as sea level rise. Specifically, a subset of these projects will plan for and test projects to enhance or create wetland transition zones to increase the resilience of wetlands along Marin County’s Bayshore, and protect adjacent communities from flooding due to current flooding issues and projected sea level rise. A subset of the proposed projects are also consistent with Part IV, Shoreline Protection, since they involve either planning for or testing methods of wetland restoration that will serve to protect adjacent communities from both current and future flooding issues associated with sea level rise.

COMPLIANCE WITH CEQA:

Conservancy staff has determined that the proposed projects are categorically exempt from the California Environmental Quality Act (CEQA).

In particular, to the extent that all of the projects involve planning and data gathering efforts, the projects are categorically exempt from review under CEQA pursuant to CEQA Guidelines, 14 California Code of Regulations, section 15306. Section 15306 exempts projects that involve basic data collection, research, experimental management, and resource evaluation activities, which do not result in a serious or major disturbance to an environmental resource. These projects are also statutorily exempt from review pursuant to CEQA Guidelines section 15262, which exempts projects involving only feasibility or planning studies for possible future actions,

which have not yet been approved, adopted, or funded. As also required by section 15262, these planning projects will consider environmental factors.

The *Constructed Bay Beaches as Soft Shoreline Alternatives to Hard Engineering Project* also includes implementation of on-the-ground pilot projects at three sites, as well as planning and research. These aspects of the project are also categorically exempt from review under the CEQA Guidelines, pursuant to section 15333, as small habitat restoration projects, not exceeding five acres, to assure the restoration and enhancement of habitat for fish, plants, or wildlife. As also required by section 15333, the project will be implemented at locations and under circumstances which ensure that there will be no significant adverse impact on endangered, rare or threatened species or their habitat. In particular, the conservation measures and seasonal timing of the treatments and monitoring incorporate endangered species protections. In addition, there are no known hazardous materials at or around the project site and, given the very small scale of each of these pilot projects (each less than .01 acres) and the methodology (timing and protection measures), there is no potential for cumulatively significant effects.

Conservancy staff will file Notices of Exemption upon approval of the projects.