COASTAL CONSERVANCY

Staff Recommendation
April 27, 2017

Advancing Nature-Based Adaptation Solutions in Marin County

Project No. 16-024-01
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, Marin County

PROGRAM CATEGORY: San Francisco Bay Area Conservancy

EXHIBITS

Exhibit 1: Project Location Maps

Exhibit 2: Project Photos

Exhibit 3: Advancing Nature-Based Adaptation Solutions in Marin County: Grant Announcement & Application

Exhibit 4: Project Letters

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-and-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 described projects that address the impacts of climate change and sea level rise, particularly on underserved communities, in Marin County:

1. **San Francisco State University, Romberg Tiburon Center for Environmental Studies:** ***New Life for Eroding Shorelines: Designing natural shoreline edges with coarse grained beach treatments and plant enhancements for high tide refuge.*** Two hundred thousand dollars ($200,000) to build and test natural shoreline systems and internal marsh features at two sites (Corte Madera Ecological Reserve and Blackie's Pasture in Tiburon), and develop two conceptual designs for shoreline approaches that emulate and reinforce processes that

can sustain high marsh habitats during accelerated sea level rise and tidal marsh retreat, with a focus on engaging and educating community members from underserved communities in Marin County.

2. **Marin Audubon Society: *Tiscornia Marsh Habitat Restoration and Sea Level Rise Adaptation Project***: One hundred ninety five thousand dollars ($195,000) to address potential flooding and habitat degradation along the shoreline of the San Rafael's Canal Area, focusing on a property owned by the Marin Audubon Society. The project will develop a preliminary engineering design to raise and improve a section of degraded levee so that it can provide habitat and reduce the vulnerability of the community to rising tides, and develop a conceptual design to stabilize a significantly eroding outboard tidal marsh as the first line of defense against rising seas. The project will also educate the community about the potential impacts of sea level rise and involve residents in adaptation planning and implementation of solutions.
3. **Point Blue Conservation Science: *A Framework for Prioritizing Adaptation Strategies***. Two-hundred three thousand dollars ($203,000) to work with the San Francisco Estuary Institute and the County of Marin's Community Development Agency to co-develop a framework to identify, evaluate and prioritize climate change adaptation strategies, specifically including nature-based solutions, that can aid decision-makers to maximize benefits to the public and ecosystem using the best available science.
4. **Smithsonian Environmental Research Center: *Community-based Research for Living Shorelines Design***. One hundred fifty two thousand dollars ($152,000) to engage Marin County teachers, students, youth leaders and other community members in science-based approaches to climate adaptation. Through teacher workshops, youth internships and volunteer workdays, community scientists will work with professional researchers on rigorous scientific studies at sites in Richardson Bay aimed at finding solutions to challenges facing oyster restoration and living shoreline projects.

The authorization is subject to the following condition:

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 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. The Marin Audubon Society, Point Blue Conservation Science, and the Smithsonian Environmental Research Center are nonprofit organizations 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 by the Marin Community Foundation (MCF) from its the Buck Family Fund, 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. 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.

This new funding initiative between the Conservancy and MCF, the "Advancing Nature-Based Solutions in Marin County" program, originated 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. MCF's mission is to: "encourage and apply philanthropic contributions to help improve the human condition, embrace diversity, promote a humane and democratic society, and enhance the community's quality of life, now and for future generations."

Conservancy staff then worked with MCF to identify areas of interest where MCF funding could make a significant difference in Marin County. We determined that this objective would be best served by a new grant program that would focus on implementing several regional recommendations developed by the Conservancy and local, state, and federal agencies. These include the *San Francisco Bay Subtidal Habitat Goals Report* recommendations (2010), *Baylands Ecosystem Habitat Goals Science Update* recommendations (2015), and additional state documents including the *Safeguarding California Plan* (2014) which recommends nature-based climate adaptation approaches such as living shorelines and horizontal levees. MCF approved grant funds to the Conservancy to administer an initial grant round that focuses on nature-based adaptation projects in Marin County.

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 MCF and the Conservancy anticipate that up to two additional rounds of funding may be provided to the Conservancy under this grant program. On September 8, 2016, the Conservancy released the grant announcement for the Advancing Nature-Based Solutions in Marin County grant program (see Exhibit 3). Proposals were due to the Conservancy on November 9, 2016, and the Conservancy received 10 proposals

requesting a total of $2,025,009 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 projects to recommend to the Conservancy for funding.

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). Restoration of identified priority areas to more natural states is an urgent need, given the accelerating pace of change anticipated in the coming years. The Advancing Nature-Based Adaptation Solutions grant program was designed with the understanding that restored baylands ecosystems and subtidal environments can help improve ecological health *and* enhance flood control in populated areas, mitigating the need for more drastic future measures to protect shorelines against sea level rise. Further, if new methods and technologies are tested, monitored, and shared as soon as possible in the short-term, the scientific understanding of the value and need for such approaches will increase among planners, engineers, and the general public, which is necessary to build political will for long-term funding and shoreline management solutions.

Through this grant program, and collectively through the four proposed projects, practitioners and stakeholders in Marin County will advance their knowledge and progress on sea level rise adaptation. This will be accomplished through a variety of activities to be conducted via the four projects, from conceptual and site-based design planning, to community engagement, to on-the-ground pilot habitat restoration treatments. The grant program will improve the long-term design and success of living shorelines projects and other adaptation approaches to protect tidal marshes and additional shoreline habitats. The projects will examine and develop nature-based alternatives to sea level rise protection for the full Marin County shoreline, while creating specific site-based designs and methods for City of San Rafael, the Corte Madera Ecological Reserve, Richardson Bay shorelines, and City of Tiburon. Additionally, the grant program will build on the County of Marin's sea level rise planning process, to develop a framework to help coastal decision makers identify and evaluate nature-based adaptations strategies to reduce Marin County's exposure to sea level rise impacts along its bayshore.

In addition to advancing the science and planning of sea level rise adaptation in Marin County, the proposed projects will promote robust community education and engagement through community meetings and workshops on nature-based adaptation strategies. The projects will directly engage local underserved youth and adults through participation in conceptual design planning and volunteer experiences, career training and resume building experiences, and the development of bilingual outreach materials on sea level rise. These efforts will increase understanding by local teachers, youth leaders, and other community members about climate science, local impacts of climate change (notably sea level rise) and nature-based approaches to protecting shorelines.

Each of the proposed grantees is experienced, knowledgeable and well suited to carry out the proposed project work, as follows:

- ***New Life for Eroding Shorelines Project*. San Francisco State University Romberg Tiburon Center for Environmental Studies** has an extensive history of expertise in restoration ecology in the San Francisco Bay. The Romberg Tiburon Center will work with Audubon California, at the Richardson Bay Audubon Center, to engage teenagers from

disadvantaged and underserved communities in Marin County. Audubon California has extensive community engagement experience, notably through their Audubon Youth Leaders Program. The proposed project will also benefit from an experienced team of scientists and engineers including: an environmental scientist from the San Francisco Estuary Institute (SFEI) with ten years of experience in planning for ecological restoration in the San Francisco Bay; a restoration engineer who has worked in San Francisco Bay tidal marsh restoration for over twenty-five years; and a coastal ecologist and botanist with over twenty-five years of experience in ecological restoration and management of San Francisco estuary wetlands.

- ***Tiscornia Marsh Habitat Restoration and Sea Level Rise*. Marin Audubon Society** will work on its 20-acre Tiscornia Marsh property, which sits in a highly-vulnerable and visible location in the City of San Rafael. It is part of a bayfront levee which provides the primary flood protection for the City, and it is adjacent to sections of the levee that are owned by the City and that are likely also low and at high risk from sea level rise and increased storminess and erosion. The project will begin planning for on-the-ground protection for the City. The project team includes entities with strong experience in designing and implementing projects on the bay shoreline, including landowner and non-profit the Marin Audubon Society, consulting firms ESA and Siegel Environmental, and Shore Up Marin, a community organization focusing on sea level rise and emergency preparedness in Marin.
- ***A Framework for Prioritizing Adaptation Strategies*. Point Blue Conservation Science** will develop a framework to identify, evaluate and prioritize climate change adaptation strategies for the full Marin County bay shoreline, specifically including nature-based solutions, ensuring decision-makers can maximize benefits to the public and ecosystem using the best available science. The project team will use the adaptation phase of the County's BayWAVE project, which has been partially funded by the Conservancy, as a test case with the intent that the framework developed will also be applicable around the entire bay and beyond. The project team has extensive experience in shoreline analysis and climate adaptation design, and includes Point Blue Conservation Science, SFEI, and the County of Marin's Community Development Agency.
- For ***Community-Based Research for Living Shorelines Design*, the Smithsonian Environmental Research Center** will bring together technical experts on climate change and native Olympia oyster restoration in San Francisco Bay with Marin County teachers, students, youth leaders and other community members to develop science-based approaches to climate adaptation. Through teacher workshops, youth internships and volunteer workdays, community-based scientists will work with professional researchers on rigorous scientific studies aimed at finding solutions to challenges facing oyster restoration and living shoreline projects. Team members from San Francisco State University's Romberg Tiburon Center (RTC), the San Francisco Bay National Estuarine Research Reserve (NERR) and the Richardson Bay Audubon Center and Sanctuary include experts on climate change and on native Olympia oysters and oyster restoration with long-term experience in San Francisco Bay. The team also has experience building successful citizen-science research programs.

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 1 for regional maps depicting the locations of the projects. The following provides a short description of each of the proposed project sites.

- ***New Life for Eroding Shorelines***. This project will be located in Blackie's Pasture and Corte Madera Ecological Reserve. Both sites have significant shoreline retreat and exposure to storm and calm-weather wind-wave energy. Corte Madera Ecological Reserve includes an early salt marsh restoration now undergoing significant wave erosion and retreat, jeopardizing decades of endangered species support. Blackie's Pasture beach in Tiburon is a mixed salt marsh and beach shoreline at the location of an historical natural backbarrier salt marsh/lagoon and barrier beach. Together, these two sites represent most of the spectrum of historical salt marsh shoreline types.
- ***Tiscornia Marsh Habitat Restoration and Sea Level Rise Adaptation Project***. Marin Audubon Society owns the Tiscornia Marsh property. Tiscornia Marsh extends along a third of the 10-mile shoreline that protects all of east and central San Rafael from bay flooding.
- ***A Framework for Prioritizing Adaptation Strategies***. The project location will be the entire bayshore of Marin County.
- ***Community-Based Research for Living Shorelines Design.*** The project site is located within Richardson Bay at an ecologically rich, 911-acre sanctuary that was acquired in the early 1960's by the National Audubon society, where initial components of the project (shoreline surveys and oyster recruitment/survival studies) are already underway.

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 new partnership with MCF to administer grants to advance nature-based adaptation strategies in Marin County 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, Hamilton/Bel Marin Keys Restoration, Corte Madera Marsh Restoration, BayWAVE Marin County climate risk assessment, revegetation and high tide refuge islands work that has been implemented as part of the San Francisco Estuary Invasive Spartina Project, and San Francisco Bay Living Shorelines work on the San Rafael Shoreline. Please see Project Summary section for a description of the development of the grant program with MCF. Conservancy staff are currently in discussions with MCF about continuing this grant program with additional funds to support two additional grant cycles in subsequent years.

PROJECT FINANCING

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

Project Breakdown:

New Life For Eroding Shorelines *Romberg Tiberon Center for Environmental Studies*	**$200,000**
Tiscornia Marsh Habitat Restoration And Sea Level Rise *Marin Audubon Society*	**$195,000**
A Framework For Prioritizing Adaptation Strategies *Point Blue Conservation Science*	**$203,000**
Community-Based Research For Living Shorelines Design *Smithsonian Environmental Research Center*	**$152,000**

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 time 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, 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 (bayshore) wetlands and shorelines, reducing coastal (bayshore) hazards due to sea level rise and storm surge, and reducing beach and bluff erosion, in

an effort to protect coastal communities, infrastructure, and natural resources from the impacts of sea level rise impacts.

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 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 2013 STRATEGIC PLAN GOAL(S) & OBJECTIVE(S), AS REVISED JUNE 25, 2015:

The four projects described in the "Project Summary" section assist the Conservancy with meeting a number of its 2013-2018 Strategic Plan Goals and Objectives. Relevant Strategic Plan goals are listed below, along with the names of the projects that meet each goal.

Consistent with **Goal 7, Objective 7B,** the following project will undertake site-specific, regional and landscape-level vulnerability assessments from sea level rise and extreme storm events, and develop adaptation plans and strategies to address threats to coastal communities and public infrastructure in ways that protect natural resources and provide maximum public benefits:

- Point Blue Conservation Science

Consistent with **Goal 7, Objective 7D**, the following projects will serve to implement adaptation pilot projects that reduce hazards from sea level rise and extreme storm events, and that protect natural resources and maximize public benefits:

- San Francisco State University Romberg Tiburon Center
- Marin Audubon Society
- Smithsonian Environmental Research Center

Consistent with **Goal 9, Objective 9A**, the following projects will support programs and events that improve public understanding of coastal resources:

- San Francisco State University Romberg Tiburon Center
- Marin Audubon Society
- Point Blue Conservation Science
- Smithsonian Environmental Research Center

Consistent with **Goal 11, Objective 11A**, the following projects will assist in protecting wetlands, managed wetlands, seasonal wetlands, riparian habitat, and subtidal habitat:

- San Francisco State University Romberg Tiburon Center
- Marin Audubon Society
- Point Blue Conservation Science
- Smithsonian Environmental Research Center

Consistent with **Goal 11, Objective 11H**, the following project will assist in eradicating non-native invasive species that threaten important habitats in the San Francisco Bay Area:

- Smithsonian Environmental Research Center

CONSISTENCY WITH CONSERVANCY'S PROJECT SELECTION CRITERIA & GUIDELINES:

The proposed project is 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, NOAA

NMFS 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, which 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 S-13-08* (2008, Arnold Schwarzenegger**,** Governor of the State of California), which instructs all state agencies to plan and consider a range of sea level rise scenarios to assess project vulnerability and to, where feasible, reduce expected risks and increase resiliency to sea level rise for all projects in area of sea level rise risk.

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 Dominican University of California, the County of San Mateo's Office of Sustainability, the Bay Area Regional Collaborative, the County of Marin's Community Development Agency's Planning Division, San Francisco Estuary Institute, the Community Marin Action Committee, Shore Up Marin, Peter Baye (Coastal Ecologist, Botanist), Roger Leventhal, P.E. (Coastal Engineer), and Audubon California. See Exhibit 4, Project Letters.

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.

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 location in Marin County, whether the project involves testing an adaptation or eradication strategy, or utilizes a new type of planning process, 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 plants and pilot projects that focus on design of living shorelines; arboring native tidal marsh plants to provide high tide refugia; placement of course sediment to protect adjacent marshes; horizontal levee approaches to achieve multiple objectives of flood control, trail use, and habitat; 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 CEQA.

In particular, to the extent that all of the projects involve only 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.

Two projects (*New Life For Eroding Shorelines* and *Community-Based Research For Living Shorelines Design*), as part of the data collection and research involved with the project, also include implementation of on-the-ground pilot projects, as well as planning and research. These aspects of the two projects 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 projects 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 .01acres) and the methodology (timing and protection measures), there is no potential for cumulatively significant effects.

Conservancy staff will file a Notice of Exemption upon approval of the project.