

COASTAL CONSERVANCY

Staff Recommendation  
September 14, 2023

**Santa Cruz Living Shoreline Feasibility Study**

Project No. 23-042-01  
Project Manager: Jessica Madden

**RECOMMENDED ACTION:** Authorization to disburse up to \$500,000 to the City of Santa Cruz to assess the feasibility of using living shorelines, sand management techniques, and other nature-based solutions to address coastal hazards and advance climate adaptation planning along 3.2 miles of the Santa Cruz coastline, and to develop conceptual designs for one to three projects identified in the feasibility study.

**LOCATION:** City of Santa Cruz, Santa Cruz County

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EXHIBITS

Exhibit 1: [Project Location Map](#)

Exhibit 2: [Site Photos](#)

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**RESOLUTION AND FINDINGS**

Staff recommends that the State Coastal Conservancy adopt the following resolution and findings.

Resolution:

The State Coastal Conservancy hereby authorizes a grant of an amount not to exceed five-hundred thousand dollars (\$500,000) to the City of Santa Cruz (“the grantee”) to assess the feasibility of using living shorelines, sand management techniques, and other nature-based solutions to address coastal hazards and advance climate adaptation planning along 3.2 miles of the Santa Cruz coastline, and to develop conceptual designs for one to three projects identified in the feasibility study.

Prior to commencement of the project, the grantee shall submit for the review and written approval of the Executive Officer of the Conservancy (Executive Officer) the following:

1. A detailed work program, schedule, and budget.
2. Names and qualifications of any contractors to be retained in carrying out the project.

Findings:

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

1. The proposed authorization is consistent with Section 31113 of Chapter 3 of Division 21 of the Public Resources Code, regarding addressing impacts and potential impacts of climate change.
2. The proposed project is consistent with the current Conservancy Project Selection Criteria.

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## **STAFF RECOMMENDATION**

### **PROJECT SUMMARY:**

Staff recommends the Conservancy authorize a \$500,000 grant to the City of Santa Cruz to assess the feasibility of using living shorelines, sand management techniques, and other nature-based solutions to address coastal hazards and advance climate adaptation planning along 3.2 miles of the Santa Cruz coastline (Exhibit 1), and to develop conceptual designs for one to three projects identified in the feasibility study.

The shoreline of the City of Santa Cruz (the City) is continuously eroding, and the impacts of future storms and sea level rise pose a significant threat to the bluffs, beaches, and development located behind them. Through the Resilient Coast Santa Cruz initiative (2019-2022), the City projected that more than \$1 billion worth of infrastructure and properties could be vulnerable to coastal climate hazards by the end of the century if a business-as-usual management approach is maintained. This estimate does not consider the added value of tourism, recreation, and ecosystem services.

The proposed project will look specifically at the 3.2 miles of coastline from Natural Bridges State Beach east to Main Beach and the San Lorenzo River. This area includes a popular bike and pedestrian path, Cowell's beach, the Santa Cruz Wharf and Beach Boardwalk, and pocket beaches along West Cliff Drive. Coastal resilience projects along this coastline will also benefit adjacent low-income communities. The need for this project was highlighted by the bomb cyclone event in January 2023 which caused severe damage to West Cliff Drive, an ocean front road and recreational transportation corridor that provides visitor and resident access along a 2.7-mile stretch of the coast from Natural Bridges State Beach to Cowell's Beach (Exhibit 1). During the storm, rip-rap protecting the bluff and portions of the road and bike and pedestrian path and road failed. Cliff erosion occurs frequently and there is a long history of coastal erosion along this corridor. In the past, erosion responses have been to either relocate infrastructure (such as fences, paths, parking lots, and stormwater pipes) or armor the eroded areas. Currently, almost 50% of West Cliff Drive is protected by seawalls and rip-rap, of varying age and in varying condition. Continuously replacing shoreline hardening infrastructure is expensive, interferes with sand supply to the shore, and ultimately exacerbates erosion of the coastline. These recent events and the damage to coastal infrastructure reveal the limitations of hard infrastructure solutions and highlight the urgent need to explore alternative, sustainable solutions for this valuable stretch of coastline. In response to the 2023 storm

damage, the City drafted a Post Storm Recovery Resiliency Roadmap that involves addressing near term damage repair and transitioning to durable, longer-term, “green” solutions, including living shorelines, sand management techniques, and other nature-based solutions (NBS). NBS have the potential to deliver significant human and biodiversity benefits. The proposed project will enable the City to rapidly complete a feasibility study and integrate its findings into the Post Storm Recovery Resiliency Roadmap and coastal adaptation planning.

Specifically, the proposed project will complete a feasibility study, develop conceptual level plans (30% design) and ecological monitoring specifications for one to three projects, and conduct community engagement throughout these efforts. The City will issue a competitive request for proposals for consultant services to complete the project tasks and will hire an ecologist to ensure expertise in local conditions and techniques. The feasibility study will build upon prior Resilient Coast Santa Cruz work, which identified potential sites for different types of NBS along the City’s coastline. The feasibility of potential solutions has been refined by type and location with the University of California Santa Cruz’ Coastal Science and Policy graduate program. Potential NBS to be considered in this stage include (but are not limited to) the restoration of dune habitat, native vegetation, oyster reefs, kelp, and seagrass beds. The feasibility study will build upon this preliminary suite of options by examining the technical, ecological, legal, regulatory, political, and social viability of the various solutions. The study will identify which solutions are the most viable at specific locations and will yield the most benefits, such as coastal storm buffering, wave action attenuation, habitat creation and connectivity, erosion and flooding mitigation, access protection, and beach and surf break sand accretion.

Using the results of the feasibility study, the City will select one to three projects to be designed to 30% with plans, sections, and initial specifications. The design plans will also identify ecological markers to track coastal change, the associated monitoring methods, and triggers and thresholds for adaptive action. Across its contiguous coastline, the City, with a dozen federal, state, and local partners, have designed and partially deployed a smart coastal change monitoring network that can be leveraged to monitor coastal conditions as well as the efficacy of future coastal management strategies like living shorelines, sand management techniques, and other NBS.

Building on ongoing and award-winning equitable outreach, the project will include engagement with the many federal, state, and local agencies interested in or holding jurisdiction over this section of Santa Cruz coastline as well as numerous researchers and academics, community advocacy groups, environmental organizations, and frontline community groups to assess potential adaptations and their implications. The City will incorporate community input from small focus groups and community workshops into the feasibility study and the 30% design plans. Concepts will be modeled into the City’s existing bilingual virtual reality sea level rise application to be used for effective outreach and engagement with this project.

**Site Description:** The City of Santa Cruz owns the 3.2 miles of shoreline considered in this project, from Main Beach at the San Lorenzo River mouth to Swanton Boulevard ending before Natural Bridges State Beach (Exhibit 1). This coastline comprises low lying beaches and clifftops

and is backed by residential and commercial development. Along the shoreline there is beach, rocky intertidal, and cliff roosting habitat for a variety of sensitive bird and intertidal species. Just offshore are kelp beds and offshore rocks, which provide habitat for sea otters and a host of other marine mammals. During fall and spring, it is common to observe migratory whales. This shoreline also features highly used public access amenities. West Cliff Drive provides a popular recreational transportation corridor, with an average of 2,700 bike path users and 3,000 vehicles per day. The City-owned and maintained beaches attract significant recreational use with over 1.25 million visitors per year. This includes the pocket beaches of West Cliff Drive and the primary tourism destinations of Main and Cowell Beaches (Exhibit 2), which are adjacent to the San Lorenzo River mouth and backed by an amusement park and Severely Disadvantaged and Disadvantaged Community neighborhoods.

**Grant Applicant Qualifications:** The City is adept at administering grant funds and has successfully managed multiple coastal resilience and coastal management grants from state agencies concurrently, producing project deliverables on time and on budget. Notably, and as preparation for the proposed project, the City project manager, Dr. Wise-West, managed and co-produced multiple climate adaptation studies with consultant teams and engaged community members with funding from state and federal agencies such as Caltrans (West Cliff Drive Adaptation and Management Plan), the California Coastal Commission (draft Local Coastal Program Amendment to Support Beach and Access Protection), and the National Science Foundation (Coastal Change Monitoring Network Design). To support Dr. Wise-West, the City proposes hiring a grants administrator to assist with fiscal management and reporting. As part of the feasibility study, the City will also hire a local ecologist who installed, maintains, and monitors existing living shorelines and restoration projects in Santa Cruz.

#### **CONSISTENCY WITH CONSERVANCY'S PROJECT SELECTION CRITERIA:**

The proposed project is consistent with the Conservancy's Project Selection Criteria, last updated on September 23, 2021, in the following respects:

##### **Selection Criteria**

##### **1. Extent to which the project helps the Conservancy accomplish the objectives in the Strategic Plan.**

See the "Consistency with Conservancy's Strategic Plan" section below.

##### **2. Project is a good investment of state resources.**

This project is a good investment of state resources because it promotes state and regional planning initiatives with robust support and engagement with the local community. The project aligns with the California Climate Adaptation Strategy's priority to "accelerate nature-based climate solutions and strengthen climate resilience of natural systems." More specifically, it supports Goal C to integrate nature-based climate solutions into relevant infrastructure and investments. The project is also consistent with Governor Newsom's 30x30 Executive Order and the California Natural Resources Agency's April 22, 2022 report titled "Pathways to 30x30: Accelerating Conservation of California's Nature." Specifically, the project addresses the key

objective identified in the 2022 report to “mitigate and build resilience to climate change.” This objective recognizes the need to expand nature-based approaches into climate adaptation efforts throughout the state.

The proposed project aims to study various options for adapting to sea level rise, such as living shorelines and sand management techniques. The project leverages a coastal change monitoring network funded and designed by the City, with a dozen federal, state, and local partners. This monitoring network will provide a mechanism to monitor any future projects that are implemented as a result of the feasibility study. The outcomes of this project will serve as a model for the development of other effective and feasible nature-based climate adaptation projects in both the Santa Cruz region and other parts of the state.

**3. Project includes a serious effort to engage tribes. Examples of tribal engagement include good faith, documented efforts to work with tribes traditionally and culturally affiliated to the project area.**

The City engaged with representatives from the Amah Mutsun Tribal Band (AMTB) during the development of its Climate Adaptation Plan Update (2018) and Resilient Coast Santa Cruz initiative (2019-2022) which yielded the West Cliff Drive Adaptation and Management Plan (2021) and proposed Local Coastal Program Amendment. Subsequently, AMTB representatives participated in a formal consultation and acted as equity advisors during the development of the City’s Climate Action Plan 2030 (2022). In these efforts, AMTB’s representatives indicated areas where access limitations existed and expressed support for improved access, restoration of cultural practices on the coast, nature-based solutions, and interpretative signage on indigenous history. This project will address the priority of nature-based solutions identified by the AMTB.

**4. Project benefits will be sustainable or resilient over the project lifespan.**

The project focuses on resiliency and climate adaptation and will consider the anticipated lifespan of proposed actions in response to sea-level rise and other climate change impacts. The conceptual design plans will identify triggers and thresholds for adaptive action, and the options considered in the feasibility study will not make future climate adaptation more difficult.

**5. Project delivers multiple benefits and significant positive impact.**

The project will advance planning and adaptation efforts that will: a) provide co-benefits (such as protecting recreational amenities, stabilizing shorelines from erosion, enhancing beach and other habitats, and increasing climate resilience) and alleviate multiple stressors within communities; b) increase equity and environmental justice by benefiting economically disadvantaged and systemically excluded communities living near the shoreline on the east end of the project area; and c) increase community-preparedness and resilience to future climate change impacts such as sea-level rise, storm surge high tide events, and flooding. The project will also add to the building body of literature on the feasibility and efficacy of living shorelines, sand management, and other NBS in geographies similar to Santa Cruz. It will serve as a basis for regional collaboration and the outcomes will be disseminated at climate adaptation practitioner conferences and gatherings.

**6. Project planned with meaningful community engagement and broad community support.**

The City’s project team has a good track record of working within communities and incorporating insights gained from community engagement into project planning. In prior planning efforts, the City engaged with the general public, interested community groups and representatives from historically under-served and under-represented groups during the development of its Climate Adaptation Plan Update (2018) and Resilient Coast Santa Cruz initiative (2019-2022), which yielded the West Cliff Drive Adaptation and Management Plan (2021) and proposed Local Coastal Program Amendment. Subsequently, representatives of frontline neighborhoods and groups participated in the identification of social conditions to monitor and an assessment of communications tools for coastal adaptation engagement with grant funding from the California Coastal Commission (2022-2024) and the National Science Foundation (2022-2023).

The City will hire a consultant to continue meaningful community engagement work in order to incorporate community feedback into this feasibility study and the 30% design work. The project will use multiple methods to reach those interested in and impacted by coastal management decisions, including virtual reality applications, small focus groups, and community workshops.

**PROJECT FINANCING**

<b>Coastal Conservancy</b>	<b>\$500,000</b>
<b>Project Total</b>	<b>\$500,000</b>

Conservancy funding for the project is anticipated to come from a Fiscal Year 2022/23 appropriation from the Greenhouse Gas Reduction Fund (GGRF) to the Conservancy for the Climate Ready Program for purposes of funding nature-based projects to address sea level rise. (Budget Act of 2022, SB 154, as amended by AB 178, Chapter 45, Statutes of 2022). The Greenhouse Gas Reduction Fund Investment Plan and Communities Revitalization Act (Health and Safety Code (HSC) Sections 39710 – 39723) requires that GGRF funds be used to (1) facilitate the achievement of reductions of GHG emissions consistent with the Global Warming Solutions Act of 2006 (HSC Sections 38500 *et seq*), and (2) to the extent feasible, achieve other co-benefits, such as maximizing economic, environmental and public health benefits and directing investment to disadvantaged communities (HSC Section 39712(b)). The Global Warming Solutions Act of 2006 sets forth (among other things) certain GGRF funding priorities (HSC Section 38590.1). The California Air Resources Board (CARB) has adopted guidelines that establish program goals that agencies must achieve with their GGRF funds.

Consistent with the CARB 2018 Funding Guidelines, the proposed project will help the Conservancy meet its GGRF program goals because the project will:

- Facilitate GHG emission reductions (which includes increases in carbon sequestration) and further the purposes of AB 32 and related statutes.
- Benefit Priority Populations (disadvantaged communities, low-income communities, or low-income households).

- Maximize economic, environmental, and public health co-benefits to the State.
- Avoid substantial burdens to disadvantaged communities and low-income communities.

The proposed project will meet these objectives by contributing to future coastal adaptation implementation projects that will support resilience to sea-level rise and storm surge, thereby increasing carbon sequestration and reducing flooding and infrastructure damage resulting in reduced GHG emissions from remediation and rebuilding. In addition, the project will assess the feasibility and initiate the planning of nature-based adaptation measures, thereby supporting the research, development, and deployment of innovative measures and practices. The project will provide economic benefits to the State by facilitating the resilience of a recreational waterfront, thereby protecting jobs in the tourism industry. The project will contribute to future coastal adaptation implementation projects that will reduce the impacts of sea level rise on communities and natural resources, benefitting priority populations and avoiding burdens to disadvantaged communities in the project area.

The City will provide approximately \$50,000 of in-kind support to these planning efforts. This includes administrative overhead, and staff time from various City departments.

Unless specifically identified as “Required Match,” the other sources of funding and in-kind contributions described above are estimates. The Conservancy does not typically require matching funds or in-kind services, nor does it require documentation of expenditures from other funders or of in-kind services. Typical grant conditions require grantees to provide any funds needed to complete a project.

#### **CONSISTENCY WITH CONSERVANCY’S ENABLING LEGISLATION:**

The project is consistent with Section 31113 of Chapter 3 of Division 21 of the Public Resources Code, which establishes the Climate Ready Program and authorizes the Conservancy to address the impacts and potential impacts of climate change on resources within the Conservancy’s jurisdiction.

Pursuant to Section 31113(b), the Conservancy is authorized to award grants to public agencies to undertake projects within the Conservancy’s jurisdiction, “including, but not limited to, those that reduce greenhouse gas emissions, address 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.” Pursuant to Section 31113(c), the Conservancy must, to the extent allowed, prioritize projects that maximize public benefits and accomplish certain purposes, including reducing emissions of greenhouse gases, preserving and enhancing coastal wetlands and natural lands, and providing recreational opportunities.

Section 31113(d)(1) requires the Conservancy to prioritize projects that use natural infrastructure to help coastal communities adapt to climate change and projects that provide multiple public benefits, including, but not limited to, protection of communities, natural resources, and recreational opportunities. As discussed above, the proposed project will help

develop future adaptation measures to protect critical shoreline infrastructure using nature-based adaptation measures.

Consistent with these sections, the proposed project will facilitate the development of nature-based shoreline infrastructure along the Santa Cruz coastline, which is located within the coastal zone and therefore within the Conservancy's jurisdiction, to reduce the threat of sea level rise and enhance coastal dune and other habitats, where feasible.

**CONSISTENCY WITH CONSERVANCY'S [2023-2027 STRATEGIC PLAN](#):**

Consistent with **Goal 1.1 Commit Funding to Benefit Systemically Excluded Communities**, the proposed project will improve planning for increased climate resilience, which will benefit economically disadvantaged and systemically excluded communities living near the shoreline on the east end of the project area.

Consistent with **Goal 4.1 Sea Level Rise Adaptation Projects**, the proposed project will complete a feasibility study for adapting public infrastructure along the coast including urban waterfronts, public access infrastructure, ports, and ecosystems to protect communities and natural resources from sea level rise.

Consistent with **Goal 4.3 Multi-Benefit Nature-Based Climate Adaptation**, the proposed project will include preparation of one to three design plans for feasible, multi-benefit, nature-based climate adaptation projects to mitigate the impacts of climate change to the coast.

**CEQA COMPLIANCE:**

The proposed planning project consists of preparing a feasibility study and preliminary designs. Thus, the proposed project involves only data gathering, resource evaluation, planning, and feasibility analyses for possible future actions that have not yet been approved or funded. These activities are statutorily exempt from review under CEQA pursuant to Title 14 of the California Code of Regulations Section 15262, which exempts planning and feasibility studies for possible future actions that have not yet been approved, adopted, or funded; and categorically exempt under Section 15306, which exempts data collection and resource evaluation activities that do not result in a serious or major disturbance to an environmental resource. Consistent with Section 15262, the project will consider environmental factors. Consistent with Section 15306, the data collection and resource evaluation components of the project will not cause major or serious disturbance to the environment.

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