

SANTA MONICA BAY NATIONAL ESTUARY PROGRAM Fiscal Year 2024 Work Plan

1 October 2023 – 30 September 2024

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Final Work Plan approved by the SMBNEP Management Conference



SANTA MONICA BAY
NATIONAL ESTUARY PROGRAM

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Common Work Plan Acronyms

Army Corps	Army Corps of Engineers
ASBS	Areas of Special Biological Significance
BART	Baby Abalone Recruitment Traps
BEP	Boater Education Program
BIL	Bipartisan Infrastructure Law
CalTrans	California Department of Transportation
CCA	Coastal Conservation Association of California
CCMP	Comprehensive Conservation and Management Plan (formerly Bay Restoration Plan)
CCVA	Climate Change Vulnerability Assessment
CDBW	California Department of Boating and Waterways
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CDPH	California Department of Public Health
CDWR	California Department of Water Resources
CMP	Santa Monica Bay Comprehensive Monitoring Program
CNRA	California Natural Resources Agency
CoSMoS	Coastal Storm Modelling System
CRAM	California Rapid Assessment Method
CRI	Loyola Marymount University's Coastal Research Institute
CSU	California State University
CVA	Clean Vessel Act
CWMW	California Wetland Monitoring Workgroup
CWQMC	California Water Quality Monitoring Council
DMO	Del Mar Oceanographic
DDT	Dichlorodiphenyltrichloroethane
ECS	Environmental Charter Schools
EWMP	Enhanced Watershed Management Plans
FMP	Fishery Management Plan
FOLD	Friends of the LAX Dunes
FY	Fiscal Year
GHG	Greenhouse Gases
GPRA	Government Performance and Results Act
HABs	Harmful Algal Blooms
HHW	Household Hazardous Waste
HSWRI	Hubbs Sea World Research Institute
IRWM	Integrated Regional Water Management
IRWMP	Integrated Regional Water Management Plan
JPA	Joint Powers Authority
JWPCP	Joint Water Pollution Control Plant (Carson)
LA	Los Angeles
LACC	LA Conservation Corps
LACDBH	Los Angeles County Department of Beaches and Harbors
LACDPH	Los Angeles County Department of Public Health
LACPW	Los Angeles County Public Works
LACFCD	Los Angeles County Flood Control District

LACSD	Los Angeles County Sanitation Districts
LADWP	Los Angeles Department of Water and Power
LARC	Los Angeles Regional Collaborative for Climate Action
LARWQCB	Los Angeles Regional Water Quality Control Board
LASAN	City of Los Angeles Sanitation
LCP	Local Coastal Plan
LVMWD	Las Virgenes Municipal Water District
MDRA	Marina Del Rey Anglers
MOU	Santa Monica Bay Restoration Commission’s Memorandum of Understanding
MPA	Marine Protected Area
MRCA	Mountains Recreation and Conservation Authority
MWD	Metropolitan Water District of Southern California
NEP	National Estuary Program
NEPORT	National Estuary Program Online Reporting Tool
NMFS	National Oceanic and Atmospheric Administration’s National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPS	National Parks Service
NRC	Natural Resource Council
NZMS	New Zealand Mudsnails
OA	Ocean acidification
OAH	Ocean acidification and hypoxia
OPC	Ocean Protection Council
OREHP	Ocean Resource Enhancement Hatchery Program
OWDS	On-site Wastewater Disposal Systems
PCB	Polychlorinated biphenyls
PE	Program Evaluation
POTW	Public Owned Treatment Works
PMRG	Paua Marine Research Group
Prop	Proposition Grant
PVPLC	Palos Verdes Peninsula Land Conservancy
QAPP	Quality Assurance Project Plan
RCDSMM	Resource Conservation District of the Santa Monica Mountains
ROE	Right of Entry
SAFE	Short-Term Abalone Fixed Enclosures
SAV	Submerged Aquatic Vegetation
SCC	California State Coastal Conservancy
SCCOOS	Southern California Ocean Observing Systems
SCCWRP	Southern California Coastal Water Research Project
SCMI	Southern California Marine Institute
SCWP	Los Angeles County’s Safe Clean Water Program
SFEP	San Francisco Estuary Partnership
SLC	State Lands Commission
SLR	Sea Level Rise
SMB	Santa Monica Bay
SMBNEP	Santa Monica Bay National Estuary Program

SMBRC	Santa Monica Bay Restoration Commission
SMMC	Santa Monica Mountains Conservancy
State Parks	California Department of Parks and Recreation
SWRCB	State Water Resources Control Board
SWFSC	Southwest Fisheries Science Center
TAC	Santa Monica Bay Restoration Commission Technical Advisory Committee
TBF	The Bay Foundation
TMDL	Total Maximum Daily Load
TWSD	Triunfo Water and Sanitation District
UCD	University of California, Davis
UCLA	University of California, Los Angeles
UCSB	University of California, Santa Barbara
USC	University of Southern California
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WBMWD	West Basin Municipal Water District
WCB	Wildlife Conservation Board
WMP	Watershed Management Plans

I. INTRODUCTION

Santa Monica Bay National Estuary Program Entities

Section 320 of the federal Clean Water Act establishes the National Estuary Program (NEP), which is administered by the United States Environmental Protection Agency (USEPA).¹ The Santa Monica Bay National Estuary Program (SMBNEP) promotes collaborative watershed-based partnerships to develop and implement a Comprehensive Conservation and Management Plan (CCMP) that addresses a range of environmental problems facing Santa Monica Bay, while recognizing and balancing the needs of the local community. The SMBNEP is comprised of two distinct entities: the Santa Monica Bay Restoration Commission (SMBRC) and The Bay Foundation (TBF). Each entity is briefly described below. The [Memorandum of Agreement](#) describes the respective roles and responsibilities and the collaborative relationship between SMBRC and TBF to further the goals of the SMBNEP. More information on SMBNEP can be found at www.smbnep.org.

The SMBRC is a non-regulatory, locally based state entity established by an act of the California Legislature in 2002 to monitor, assess, coordinate, and advise the activities of state programs and oversee funding that affects the beneficial uses, restoration and enhancement of Santa Monica Bay and its watersheds [Pub. Res. Code §30988(d)] (www.smbrc.ca.gov). The SMBRC serves as the Management Conference for SMBNEP and is comprised of the Governing Board, Executive Committee, Technical Advisory Committee (TAC), SMBRC staff, and Santa Monica Bay Stakeholders. SMBRC staff provide administrative services to SMBRC and work to support the development and implementation of the CCMP, which includes activities to protect, enhance, and restore the diverse ecosystems within the Santa Monica Bay watershed that provide habitat for more than five thousand species of plants, fish, birds, mammals, and other wildlife. The SMBRC's [Memorandum of Understanding](#) (MOU) describes the governance structure of the SMBRC.

TBF is an independent, non-profit 501(c)(3) organization founded in 1990. The mission of TBF is to contribute to the restoration and enhancement of the Santa Monica Bay and other coastal waters (www.santamonica.org/). Serving as Host Entity for SMBNEP, TBF receives an annual federal grant from USEPA pursuant to section 320 of the Clean Water Act (CWA; 33 U.S.C. §1330) to implement the CCMP. TBF also receives important grants and donations from other entities to support TBF and its implementation of the CCMP.

¹ Additional information on USEPA's National Estuary Program is available at <https://www.epa.gov/nep>.

In addition, Loyola Marymount University's Coastal Research Institute (CRI) works collaboratively with TBF to support CCMP and Comprehensive Monitoring Program (CMP) efforts. CRI brings together expertise from Loyola Marymount University's Frank R. Seaver College of Science and Engineering and TBF to restore and enhance Santa Monica Bay and local coastal waters. CRI contributes to a better understanding of global urban coastal resource management through the execution of projects that stem from TBF's work as part of SMBNEP and its efforts to implement the CCMP. CRI engages educators, academics, graduate students, undergraduate students, agencies, industry, and more in research related to coastal resource management.

Comprehensive Conservation and Management Plan and FY24 Work Plan

The original CCMP, or Bay Restoration Plan, of 1995 was updated in 2008 and again in 2013. The SMBNEP completed a major CCMP revision in 2021, including a revised [Action Plan](#) in October 2018, a [Finance Plan](#) in December 2019, an amended [MOU](#) of SMBRC in June 2020, an [Introduction Chapter](#) in February 2021, and a [Comprehensive Monitoring Program \(CMP\)](#) in April 2021 (all key components of the CCMP). In September 2021, USEPA reviewed and concurred that the revised CCMP meets USEPA requirements and is officially considered final. Additionally, a [Memorandum of Agreement between SMBRC and TBF](#) was completed in August 2021.

USEPA's funding guidance describes a revision as an alteration of the CCMP that involves significant changes such as new or significantly altered goals, or to incorporate new information and data, such as climate change. Revisions are made to the CCMP through an iterative and public process with active participation from members of the SMBRC Governing Board and many members of the public. The [2018 CCMP Action Plan](#) identified approaches and strategies intended to make substantial progress toward clean waters and healthy habitats over the next five to 20 years. It reflects the consensus of SMBNEP partners regarding the top strategies and priorities to ensure continued progress and achieve improved water quality, protection and restoration of habitats, and benefits to humans in the Bay and its watershed. The revision to the CCMP was approved by USEPA Region 9 and USEPA Headquarters in September 2021. The process to update the CCMP is scheduled to begin in late 2023 (see [SMBNEP Organizational Needs](#)).

This Fiscal Year 2024 (FY24) Work Plan builds off the CCMP Action Plan and is focused on a subset of the identified actions and next steps in the Plan. The purpose of the Work Plan is to identify program objectives, tasks, and timelines of the work to be performed during the federal fiscal year (FY24): 1 October 2023 – 30 September 2024, specifically to accomplish the goals and actions of the CCMP Action Plan, the CMP, and various technical, managerial, and administrative activities necessary to continue to advance the mission of SMBNEP.

In addition, USEPA identified four areas of special interest in [FY21-24 NEP funding guidance](#) (October 2020) that the FY24 Work Plan should focus on: 1) nutrient pollution reduction, 2) water reuse and conservation, 3) marine litter reduction, and 4) green infrastructure and resiliency. The CCMP Action Plan and the FY24 Work Plan incorporate many actions that focus on these special interest areas. For example, nutrient pollution reduction is addressed directly, by supporting elimination of non-point pollution from sources (Actions #18 and #20) and researching and informing best management and pollution reduction practices to address non-point source pollution and facilitate reduction (Action #40). Additional actions support pollution reduction research, projects, and policy (e.g., Actions #16, #17, and #43) and restoring habitats that mitigate pollutant loading (e.g., Action #11).

Water reuse and conservation is another important area of interest for SMBNEP and is included in the CCMP Action Plan and FY24 Work Plan directly (e.g., Actions #21, #30, and #31). Action #32 aims to reduce marine debris and other actions further support litter reduction, such as monitoring microplastics and other marine debris (Action #33), working to meet Total Maximum Daily Loads (TMDLs; Action #16), and informing non-point source pollution (Action #40).

The fourth special interest area is identified as green infrastructure and resiliency and is intended to capture habitat restoration projects and beneficial best management practices that improve resiliency, especially to coastal hazards such as flooding or other disturbances. SMBNEP's [2016 Climate Change Vulnerability Assessment](#) identified vulnerabilities and areas where resilience should be prioritized. The 2018 CCMP Action Plan reflects that climate resiliency focus, both in the goals (see below), and in specific actions. Major habitat preservation and restoration activities that also support resilient systems include Actions #1, #2, #4, and #6-13 and capture a wide range of habitats such as beaches, dunes, wetlands, kelp forests, and eelgrass habitats, while also providing many additional benefits. Additional resiliency strategies are highlighted in the form of improving understanding of endangered or threatened species such as steelhead trout (Action #15), increasing local water supplies (Actions #17 and #21), supporting effective governance and policy (Actions #24 and #25), improving stakeholder engagement and education on impacts and solutions (Action #30), conducting research and monitoring of mitigation strategies (Actions #34-36 and #42), and developing funding and partnerships to further resiliency goals (Action #44).

CCMP Action Plan Goals

The Management Conference and public stakeholders identified the need to retain the top priorities of SMBNEP from the previous Bay Restoration Plan. Those priorities were improving water quality, conserving and rehabilitating natural resources, and protecting the Bay's benefits and values to people. Given the cross-cutting and multi-benefit nature of most of the projects and programs listed in this Action Plan, the Management Conference decided not to arbitrarily separate out projects based on categorizing them into one of the three priority areas. Rather, the three priority areas are integrated and supported throughout the Work Plan, along with a new priority area, understanding and adapting to climate change impacts.

Within these four priority areas (including understanding and adapting to climate change impacts) seven overarching goals were identified in the CCMP Action Plan and are listed below. All seven goals are priority focus areas in this FY24 Work Plan through the implementation of actions and next steps identified in Section III, [SMBNEP Planned Activities](#). The goals are achieved through actions of many entities including public agencies and non-profit organizations that take the lead on specific projects.

Seven CCMP Action Plan Goals:

1. Protect, enhance, and improve ecosystems of Santa Monica Bay and its watersheds
2. Improve water availability
3. Improve water quality
4. Enhance socio-economic benefits to the public
5. Enhance public engagement and education
6. Mitigate impacts and increase resiliency to climate change
7. Improve monitoring and ability to assess effectiveness of management actions

Connection to USEPA Goals

USEPA's [FY22-26 Strategic Plan](#) (March 2022) communicates the Agency's priorities and provides the roadmap for achieving its mission to protect human health and the environment including seven major strategic goals and four cross-agency strategies. The FY24 Work Plan and the CCMP serve several of USEPA's goals, but SMBNEP's work is especially focused on Goal 1: Tackle the Climate Crisis (including Objective 1.2) and Goal 5: Ensure Clean and Safe Water for All Communities (including Objectives 5.1 and 5.2). SMBNEP is also taking steps to better address Goal 2: Take Decisive Action to Advance Environmental Justice and Civil Rights (including Objectives 2.1 and 2.2; see [Advancing Equity](#) discussion below). This Work Plan also includes activities that will contribute to USEPA's [FY23-24 National Water Program Guidance](#) and the FY21-24 CWA §320 National Estuary Program Funding Guidance.

Advancing Equity

While not required by USEPA for annual CWA section 320 funds, SMBNEP strives to align the FY24 Work Plan tasks with the priorities for the Bipartisan Infrastructure Law (BIL) funds identified in the [NEP BIL Funding Implementation Memorandum for FY22-26](#): to ensure that benefits reach underserved communities and to build the adaptive capacity of ecosystems and communities.

For BIL funds, NEPs must develop a BIL Long-Term Plan describing the key activities in all funding years and an Equity Strategy detailing how the NEP will contribute to the goal of at least 40 percent of BIL funding benefits flowing to underserved communities consistent with the Justice40 Initiative.

The BIL Long-Term Plan and Equity Strategy are due to USEPA by June 1, 2023. Per USEPA guidance, the BIL Equity Strategy will include the following:

- A definition of underserved communities;
- The percentage of NEP funds prior to BIL funding flowing to projects that benefit underserved communities (i.e., a baseline);
- Analysis of underserved communities that may benefit from NEP projects to identify where additional investments can be made that benefit such communities while implementing CCMPs;
- Numeric targets for activities supporting underserved communities and key activities to achieve these goals;
- How benefits will be tracked; and
- A stakeholder engagement plan to ensure public participation and that community stakeholders are meaningfully involved in what constitutes the benefits of a program.

Unless otherwise indicated, the FY24 Work Plan uses “disadvantaged community” to be consistent with projects and programs that use the definition provided in Water Code section 79505.5, subdivision (a): A community with an annual median household income that is less than 80 percent of the statewide annual median household income. The FY24 Work Plan uses “underserved communities” to refer to communities that may experience low income, linguistic isolation, less than high school education, unemployment, adverse health outcomes, pollution burdens, limited access to green and open space, are not being reached by SMBNEP’s current engagement strategies such as Black, Indigenous, and People of Color communities, or other inequities. The FY24 Work Plan includes efforts to engage the public (e.g., Actions #6, 7, 13, 27, 30-32) and support disadvantaged communities in achieving healthy habitats, green infrastructure, and pollution reduction (Action #28). The BIL Equity Strategy will serve as a framework for better defining and engaging with disadvantaged communities, underserved communities, and Black, Indigenous, and People of Color communities and identifying partners, barriers, and projects that directly benefit these communities. SMBNEP will have an opportunity to consider integrating equity into all of its work during the process to update the CCMP, which will begin in late 2023.

See Section II ([Programmatic Updates](#)) for discussion of BIL-related work accomplished in FY22 and Section III ([SMBNEP Organizational Needs](#)) for additional BIL work to be conducted in FY24.

II. WORK PLAN OVERVIEW

Work Plan Structure

This section of the Work Plan provides a brief discussion of the Work Plan's structure and a summary of SMBNEP program accomplishments and key projects. [Section III](#) details the individual actions, next steps, objectives, deliverables, and environmental outcomes (results) and SMBNEP organizational needs. Many of these actions or next steps have detailed implementation, monitoring, or permitting plans and summarizing them all would make this document an unmanageable size. For additional details on individual projects, refer to [TBF's website](#) and SMBNEP annual work plans, semi-annual reports, and annual reports on [SMBNEP's website](#). [Appendix A](#) of this Work Plan lists projects that were completed in FY23. [Section IV](#) includes the Work Plan budget and travel documentation. [Appendix B](#) lists the TBF and SMBRC staff supporting the implementation of this Work Plan.

The Work Plan was developed from the CCMP Action Plan and input from the SMBRC Governing Board, the SMBRC Santa Monica Bay Stakeholders workshop, partners and the public during a written comment period, and SMBRC and TBF staff. The development of an annual work plan is a core function of an NEP. The annual federal CWA section 320 NEP grant is administered by USEPA and awarded to an NEP for carrying out annual work plan activities. Non-federal grant matching funds are required at a minimum rate of 1:1. The scope of this Work Plan is broad and multifaceted. Significant efforts will be devoted to carry out water quality improvement and habitat restoration programs and projects this year, in support of many of the actions in the CCMP Action Plan. The structure of the Work Plan is intended to mimic the structure of the CCMP Action Plan to better communicate progress towards implementing the 44 actions in the CCMP Action Plan.

There will also be a focus and efforts in FY24 to implement programs that connect and integrate issues (e.g., climate change and comprehensive monitoring), and efforts to improve public outreach and participation. As part of the stakeholder education and engagement category, there will be efforts to provide opportunities for public information exchange and discussion on issues important to SMBNEP and stakeholders. This may include scheduled informational items during SMBRC Governing Board meetings or separate workshops. Although not identified for specific actions in this Work Plan, topics for SMBRC Governing Board meeting informational items and workshops will be planned on an as-needed basis throughout the fiscal year. Additionally, USEPA-required reporting will be conducted as part of this Work Plan, but work to develop the reports is not tied to a specific action. Consistent with USEPA NEP funding guidance, reporting includes a semi-annual and an annual report outlining how funds were spent in the fiscal year and annual reporting on habitat restored and funding leveraged (i.e., NEPORT). SMBNEP also publishes the [Baywire newsletter](#) for updates on SMBNEP activities throughout the year.

Work Plan Changes from FY23

The formatting this Work Plan was updated from previous work plans to improve accessibility and readability. In this Work Plan, each action has its own section with a table of next steps that are consistent with the CCMP Action Plan, project leads, partners, objectives, descriptions, and outputs. Many of the priorities and actions remain similar to previous years. New next steps or projects that are part of this Work Plan that were not part of the previous FY23 Work Plan are identified in the tables with asterisks. If an action identified in the CCMP Action Plan is not contained in this Work Plan, it still remains a priority of SMBNEP. It may be that funding hasn't been identified for FY24, or that action may still be in development or in a planning stage. This does not preclude those next steps from being included in future work plans.

SMBNEP Program Accomplishments from Previous Fiscal Year (2022)

This section highlights programmatic updates and accomplishments by CCMP action number from federal fiscal year, FY22: 1 October 2021 - 30 September 2022.

Beginning in March 2020, the State of California and Los Angeles County Department of Public Health (LACDPH) issued a “stay-at-home” order with specific restrictions on all activities in response to the COVID-19 pandemic. Beginning in summer 2021, LACDPH began allowing volunteer events to resume. Implementation of activities in the time of COVID-19 requires extensive preparation to prioritize human health, reduce safety risks, and follow regulatory restrictions. TBF developed detailed safety guidelines, protocols, and waivers to resume outdoor community events; however, the restrictions impacted several projects for SMBNEP.

Programmatic Updates

[SMBNEP Logo and Website](https://www.smbnep.org/) – The SMBNEP website (<https://www.smbnep.org/>), which launched in late September 2021, serves to inform stakeholders about SMBNEP's purpose and priorities, outlines SMBNEP's organizational structure, provides information on SMBNEP activities, and is a repository for plans, reports, and other guiding documents that detail SMBNEP's tasks and accomplishments. Between 1 November 2021 and 31 October 2022, the site received about 1,400 visitors averaging around 116 per month.

[SMBNEP BIL Work Plan](#) – On 15 September 2022, SMBRC approved the Work Plan for FY22-23 federal Bipartisan Infrastructure Law funds ([BIL Work Plan](#)). The BIL Work Plan includes eight projects of new and ongoing efforts to advance equity and climate resilience in the Santa Monica Bay watersheds and further the CCMP Action Plan. TBF and SMBRC staff continue to develop the draft BIL Long-term Plan and Equity Strategy describing the key activities to be pursued through all funding years (FY22-26) and how SMBNEP will contribute to the goal of at least 40 percent of BIL funding benefits flowing to underserved communities. The draft BIL Long-term Plan will outline activities for the eight projects identified in the FY22-23 BIL Work Plan. The draft BIL Equity Strategy will be submitted to the USEPA prior to the June 1, 2023 deadline.

[SMBRC Prop 50 Grant Program](#) – SMBRC’s Prop 50 grant program prioritizes projects that fulfill monitoring needs identified in the SMBNEP CMP. On 3 February 2022, the SWRCB’s Division of Financial Assistance (DFA) approved seven projects for funding and one project as a standby project consistent with the SMBRC Governing Board’s recommendations. In August 2022, SMBRC staff was notified that one of the projects would not proceed and declined the award. In October 2022, DFA approved a Revised Project List reallocating the remaining funds to two existing projects. SMBRC staff continue to collaborate with DFA staff and awardees to develop grant agreements for the six approved projects with execution anticipated in early 2023. The projects will fill CMP data gaps to better understand climate change impacts in key habitats of Santa Monica Bay and its watersheds including Pelagic, Soft Bottom, Rocky Reefs, Rocky Intertidal, Sandy Shores, Coastal Wetlands, and Freshwater / Riparian.

Action #1 Acquire Open Space

The Triangle Ranch Acquisition was funded by SMMC, Los Angeles County, WCB, LACSD, and the 2021-2022 State budget. Triangle Ranch is a crucial linkage for habitat preservation, watershed protection, and wildlife movement including safe passage for mountain lions via the Wallis Annenberg Wildlife Crossing (see Action #14). The property includes coast live oak woodland, chaparral, purple sage scrub, native and annual grassland, and valley oak savannah.

The Palos Verdes Nature Preserve expansion was funded by the City of Rancho Palos Verdes, USFWS, WCB, and PVPLC. The newly acquired 96 acres consists of grasslands, coastal sage and cactus scrub, and woodland, providing food and habitat for an array of endangered, threatened, and sensitive species including the Palos Verdes blue butterfly, the El Segundo blue butterfly, and coastal California gnatcatcher. In August 2022, PVPLC launched a \$30 million campaign to fund habitat restoration and fire risk mitigation on the property including invasive species removal and establishment of drought-tolerant native plants.

Action #2 Restore Kelp Forests

Teams of restoration divers (via SCUBA) have been clearing the ocean floor of excess purple sea urchins (*Strongylocentrotus purpuratus*), thereby reducing herbivory and allowing for the natural recruitment and development of giant kelp (*Macrocystis pyrifera*). A total of 58.53 acres of reef have been restored along Palos Verdes since the beginning of the project in July 2013. In that time, TBF and partners documented the development of a variety of macroalgae communities occurring on the reefs, higher densities and biomass of kelp bass (*Paralabrax clathratus*) and other fish species within restoration sites, increased density of CA spiny lobster (*Panulirus interruptus*), higher algal and invertebrate diversity at all restoration sites, and increased *Strongylocentrotus* spp. gonadosomatic indices. These increases are comparable to reference site values. Focusing on kelp restoration areas where *S. purpuratus* suppression had occurred, canopy percent cover and kelp acreage increased in the completed restoration sites.

During the reporting period of 1 October 2021 through 31 March 2022, 7.51 acres were pre-monitored, and 3.78 acres of reef were cleared of excess urchins off White Point and Pt. Fermin. Restoration activities at Pt. Fermin occurred in collaboration with Force Blue and NFL Green with the goal of restoring a “football-field” area of kelp. This event used veteran combat divers to reduce urchin density, while local aquariums and TBF staff hosted educational and trash cleanup programs on the beach. The event was far-reaching and televised throughout the country. These sites continue to contain very high urchin densities with little to no macroalgae. Additional efforts will continue to be conducted to further work at White Point and Point Fermin.

At the 15 December 2022 SMBRC Governing Board meeting, TBF presented on the kelp forest restoration project including historical kelp canopy in the Bay, causes of kelp decline, restoration efforts, and post-restoration survey results.

Action #3 Recover Abalone Populations

TBF operates and maintains two mariculture facilities located at SCMI. These spaces serve as a wet lab and hatchery for abalone rearing, experimentation, and long-term housing of broodstock. The facility is a registered aquaculture facility and has been certified as “sabellid free” by CDFW. For the fall 2021, spring 2022, and fall 2022 outplant events, a total of 1,718 white abalone were selected and tagged for outplanting off Palos Verdes into ten SAFEs and four BARTs. A second transplant site was established off Palos Verdes on 9 March 2022. Nine SAFE bases and four BARTs (CDFW) were deployed and were stocked with a total of 1,117 red abalone in during the spring and fall 2022 outplants.

TBF visited the site 20 times during this reporting period. During those visits a total of 49 live white abalone 36 live red abalone were observed. As the outplanted abalone are juvenile, their behavior is to retreat deep into the cracks and hide to avoid predation. A meaningful assessment of the success of these outplants is appropriate following three to five years, based upon work conducted in the Puget Sound, when these individuals are likely to achieve adult size. At that time these adult abalone will be resilient to most predatory actions and position themselves on open faces of the reef.

In addition, 467 white abalone shells and 123 red abalone shells have been collected from individuals that were depredated or died. Many of the shells collected showed growth following outplant; meaning some of the individuals survived for a period of time and the habitat is providing sufficient foraging opportunities for the abalone to grow.

On 13 January 2022, TBF staff transferred over 6,900 juvenile white abalone from the Bodega Marine Lab to The Cultured Abalone Farm, South West Fisheries Science Center, and SCMI. Approximately 1,500 animals from this transfer were selected for outplanting in spring 2022, and the remaining animals are being held and cared for in southern California partner facilities until they grow large enough to be outplanted. On 13 June 2022, 708 juvenile white abalone were transferred from Aquarium of the Pacific to SCMI to bolster numbers for the fall 2022 outplant.

Action #4 Assess and Restore Seagrass Habitats

This innovative project, funded by SCC (LA Living Shoreline Project), Honda Marine Science Foundation, and NEP Coastal Watershed Grants Program, incorporates the experimental establishment of subtidal eelgrass offshore of Dockweiler Beach, Redondo Canyon, and Malaga Cove within Santa Monica Bay. TBF staff participated on a regional SAV Technical Advisory Committee, led by SCCWRP. This group provided external scientific input and recommendations to the subtidal components of the restoration project, while concurrently spreading awareness of the importance of open coast eelgrass transplants. Further, TBF staff convened preeminent SAV researchers in California to establish the “Santa Monica Bay Subtidal Eelgrass Restoration Project Technical Advisory Committee”, comprised of researchers from academic institutions, governmental agencies, and environmental consultants. This group proved invaluable in refining the approach of the project and providing essential recommendations and insights into transplanting and monitoring processes. Members also expressed overwhelming support for the project and highlighted the importance of conducting this work.

The project harvested *Zostera pacifica* material from two donor beds on the backside of Catalina Island, Palisades, and East End, to utilize for three transplants within Santa Monica Bay due to the extant bed stability, size, high turion density, and selected depth range. The overall size of both the Palisades (97 acres) and East End (21 acres) were expansive. Transplant material was harvested on three separate cruises and transplanted the same day into soft bottom substrate 35-40 feet in depth. This occurred on 20, 22, and 27 July 2021 to three distinct transplant sites off Redondo Beach, Malaga Cove, and Dockweiler Beach, respectively.

Each site received roughly 500 turions, shoot-like structures supporting the blades of the eelgrass. Two methods were utilized: one used a single turion placed into holes excavated by divers, and the second bundled 8-10 turions together. Thus far, post-transplant monitoring was conducted at 24 hours, 1-week, 2-weeks, 1 month, and two quarterly surveys after transplant activities to inform survivability; quarterly monitoring continued through 2022.

During this reporting period, TBF and project partners conducted numerous SCUBA-based surveys to monitor seagrass within the Bay, both transplant and donor sites. Quarterly monitoring events occurred on 20 October 2021, 4 February 2022, 18 April 2022, and 28 July 2022. Additional transplant site visits to deploy sensors and collect cores occurred on 7 December 2021 and 17 February 2022, and donor site visits to deploy sensors on 13 December 2021, 14 February 2022, 25 May 2022, 26 July 2022, and 23 September 2022. Additional visits to transplant and donor sites are scheduled for the upcoming reporting period for both biological monitoring surveys and to retrieve and deploy additional sensors.

Additionally, Prop 50 grant funding was approved by SMBRC and DFA to support eelgrass monitoring at sites in Santa Monica Bay and inform future eelgrass restoration efforts.

Action #5 Assess and Implement Offshore Artificial Reefs

The Palos Verdes Reef Restoration Project aims to restore the nearshore ecological rocky-reef community, support an estimated six tons of reef fish and a proportional amount of invertebrates, and increase the abundance of commercial and recreational species, offsetting historical losses to ecosystem services. The project received \$1,409,000 in Prop 12 funds for construction and post-construction monitoring for Year 1. Vantuna Research Group and Southern California Marine Institute completed construction of an artificial reef in September 2020 to restore rocky reef habitat near Bunker Point off the Palos Verdes Peninsula, which involved strategically placing 57,000 tons of quarry rock in a 42-acre area. During this reporting period, the project leads released a [video](#) of project outcomes and completed the Year 2 post-construction monitoring report, indicating a faster-than-expected increase in biomass including fish and giant kelp and no observation of invasive species. Although juveniles were not analyzed in this report, many juvenile fish were observed that are expected to continue to increase fish biomass in the area over the coming years.

Four acoustic receivers were purchased by TBF in 2016 to improve the coverage of the Southern California Acoustic Telemetry Network, led by Dr. Chris Lowe at CSU Long Beach. Three receivers were first deployed in May 2017 to sites in the northern Santa Monica Bay, with the fourth subsequently included within the network. Currently, there are eight receivers deployed throughout the Santa Monica Bay to inform SMBNEP of the movements, positions, and permanence of great white sharks, giant sea bass, and other species of interest.

Data generated by this expansion of the network will improve protection and understanding for these species and contribute to the SMBNEP Comprehensive Monitoring Program. The receivers were downloaded bi-monthly, cleaned, and redeployed to their moorings.

During this reporting period, the receivers detected two Giant Sea Bass (*Stereolepis gigas*) and two shovelnose guitarfish (*Rhinobatos productus*). Additionally, twelve individual white sharks (ten juveniles and two adults) (*Carcharodon carcharias*) were detected throughout the Bay in the last year. Semi-annual species count updates are provided to TBF by Dr. Lowe's lab at CSU Long Beach.

Action #6 Restore Healthy Beaches

[Malibu Living Shoreline Project](#) – This project, in partnership with the City of Malibu, LACDBH, and SCC aims to restore approximately three acres of sandy beach and dune habitats at Zuma Beach and Point Dume Beach to improve coastal resilience and increase the health of the beach systems through a living shoreline approach. All permits, including ROE and CDP, were obtained in winter 2020. Implementation was conducted in winter 2020-21 and resulted in removal of approximately 25 tons of invasive iceplant and other non-native vegetation from the project area. Implementation also included planting of over 500 native plants, seeding, and installation of post and rope fencing to delineate the project boundary and pathways, and sand fence segments and biomimicry stakes to promote dune growth. Project documents are publicly available on the project's webpage.

During this time period, work focused on post-restoration monitoring, adaptive management and site maintenance, and continued outreach and community engagement. The first three rounds of post-restoration scientific monitoring were conducted in June, October-November 2021, and June 2022. TBF also continued site maintenance to remove non-native vegetation, remove trash from the site, and repair post and rope fencing and sand fencing segments. Results from a special research study by CRI found that the biomimicry stakes were effective at accreting sand. The biomimicry stakes were removed in November 2021. In February 2022, TBF performed supplemental seeding of the sites and planted an additional 245 plants at Point Dume Beach and 99 plants at Zuma Beach. Plants and seed were manually watered due to lack of natural rainfall. In addition, interpretive signage was installed in May 2022. The Year 1 Annual Report was finalized in May 2022.

Additionally, TBF had frequent communications with the City of Malibu and LACDBH for outreach and event planning. TBF coordinated with LACDBH to secure special events permits for community and student restoration events. The first community and student restoration event was held in March 2022 and resulted in removal of approximately 360 lbs of non-native vegetation. Community restoration events are ongoing and will primarily occur in the winter/spring when annual weeds are most abundant. TBF also continues to present at conferences and to other groups about this project, including the Beach Ecology Coalition and others.

[Los Angeles Living Shoreline Project](#) – This innovative project, in partnership with LACDBH, State Parks, SCC, and Honda Marine Science Foundation, aims to implement a multi-habitat approach to restore approximately 3.5 acres of beach and coastal bluff habitat. This project at Dockweiler Beach directly supports a community that experiences a high pollution burden as indicated in [CalEnviroScreen 4.0](#) and is identified as a disadvantaged community in the [Senate Bill 535 Disadvantaged Communities map](#) (tract 6037980028). The project also adds to SMBNEP's efforts to improve coastal resilience in Los Angeles County. It also incorporates the experimental establishment of offshore eelgrass within a one-acre footprint (see Action #4 – eelgrass).

Significant progress was made during this reporting period, including permitting, coordinating and finalizing logistics for implementation, continued outreach and monitoring, and project implementation. Significant collaboration occurred through communications with various agencies such as SCC, California Coastal Commission, LACDBH, LACPW, City of Los Angeles, State Parks, LA County Lifeguards, USFWS, CDFW, USEPA, and others. TBF continues to present at conferences and to other groups about this project (e.g., El Segundo Blue Butterfly Coalition, Beach Ecology Coalition).

For the beach and bluff components of the project, TBF coordinated with LACDBH to amend the existing ROE permit to include implementation and post-restoration activities. In addition, a CDP Waiver for the project was issued by the California Coastal Commission in October 2021. A Scientific Collecting Permit through State Parks was also obtained in November 2021. TBF implemented the beach portion of the project in January through March 2022. As part of implementation activities, TBF and LACC removed the old existing plover enclosure fence and replaced with symbolic post and rope fencing. The outer project perimeter was also delineated with post and rope fencing and single sided post and rope was installed to create several pathways to help guide beach visitors through the site. In addition, non-native sea rocket was hand pulled, and the project area was subsequently seeded with native dune species. Approximately 200 native plants were planted in the project area outside of the plover enclosure. Sand fencing segments were also installed in this area to help promote dune growth. In addition, several seeding plots were set up to track the germination of various dune species. The first round of post-restoration monitoring was performed in August 2022.

For the bluff portion of the project, additional coordination and permitting with the City of Los Angeles Bureau of Engineering was necessary. TBF submitted a Right of Way permit application to the City in December 2021 and a local CDP application in January 2022. Following submission of the CRP application package, the City of Los Angeles waived the need for a local CDP. A Right of Way permit was obtained in July 2022. Implementation of the bluff is expected to begin in October 2022.

[Manhattan Beach Dune Restoration](#) – This project aims to restore approximately three acres of dune habitat along the beach in the City of Manhattan Beach to provide infrastructure protection and increase coastal resilience, while improving habitat quality through invasive plant removal and native plant establishment. The project is located on existing back dunes along the coast of Manhattan Beach, adjacent to Bruce’s Beach, from approximately 36th Street to 23rd Street, within approximately 0.6 miles of coastline. The restoration project involves the removal of non-native vegetation, seeding and planting of native vegetation, strategic installation of sand fencing and other features to help establish vegetation, installation of symbolic fencing, and installation of educational features like interpretive signage.

The project design incorporated input from partners, experts, and public stakeholders through an innovative outreach and community engagement strategy that utilized virtual workshop, stakeholder meetings, and an outreach video submission to solicit feedback. In addition, TBF consulted with a Native American representative who engaged in the project as a cultural advisor. The project garnered widespread support from local stakeholder groups and community members. TBF continues to present at conferences and to other groups about this project.

Substantial progress was made during this reporting period including completing restoration planning, securing final permits, commencing implementation and community restoration events, scientific monitoring and maintenance, and continuing engagement with stakeholders and news outlets. TBF obtained a ROE permit to conduct scientific monitoring on-site in May 2021 and amended the permit in December 2021 to include implementation and post-restoration activities. The final CDP application package, including the Restoration and Monitoring Plan, was submitted in August 2021 and subsequently approved in January 2022. TBF drafted the application for the LACFCD permit in October 2021 and received and secured the Flood Construction Permit in January 2022.

Restoration implementation commenced in January 2022 and is ongoing. With support from LACC, community volunteers, and project partners, TBF removed and disposed of nearly 28 tons of iceplant and planted 1,400 native dune plants. The post and rope pathways and project boundary have also been delineated and sand fencing segments were installed to promote dune growth. TBF coordinated with LACDBH to obtain Special Events Permits for community restoration events to support implementation. Seeding of the site is expected to occur in October 2022 with supplemental planting anticipated for later in fall 2022. The project has been featured by several local news outlets, including a story by Spectrum News, and TBF continues to promote the project and associated community restoration and stewardship events.

Santa Monica Dune Restoration – This project is being planned in partnership with City of Santa Monica, State Parks, Audubon Society, and public stakeholders and will include restoration of approximately 4.5 acres of beach habitat on Santa Monica Beach, including the area with the current snowy plover enclosure. This project was approved to receive funding by the Refugio Beach Oil Spill Trustee Committee in September 2021 through the National Fish and Wildlife Foundation. The grant agreement was executed in August 2022. Project outreach, stakeholder engagement, planning, design, and permitting are expected to begin in fall 2022.

Action #7 Restore LAX Dunes

LAX Dunes – The LAX Dunes are the largest remaining remnant contiguous coastal dune system in southern California. The 302-acre dune site is owned and managed by Los Angeles World Airports (LAWA). The site provides habitat for over 900 species, including the beautiful and delicate federally endangered El Segundo Blue Butterfly. During this period, TBF assisted LAWA in obtaining a CDP amendment for the Coastal Dunes Improvement Project (CDIP) to reflect the inclusion of the Revised Ecological Landscape Plan (2021). TBF also continued coordination and work with LAWA and partners on revegetation efforts, habitat restoration, future restoration planning, and scientific monitoring of the LAX Dunes.

Lead botanist project partner, California Botanic Garden (CalBG), conducted seed bulking and plant propagation; project ornithologist, Cooper Ecological Monitoring performed avian surveys of the site; scientific consulting partner and restoration ecologists, Coastal Restoration Consultants, advised ongoing restoration and planning for future restoration activities; LACC and IO Environmental and Infrastructure (IOEI) conducted non-native vegetation removal and native seeding and planting. In total, TBF, LACC, and IOEI, planted approximately 13,500 native plants in winter-spring 2021-22. Public community events were halted starting March 2020 through September 2021 as required by LA County Public Health due to COVID-19. Events reconvened in October 2021. From October 2021 through September 2022, TBF held 17 community restoration events, where a total of 286 volunteers removed approximately 19,048 lbs (684 bags) of non-native vegetation.

TBF performed compliance monitoring in spring 2022. Data was subsequently entered, analyzed, and compared to success criteria. Furthermore, TBF submitted the 2022 Ecological Monitoring Report for the coastal dune improvement project on November 15, 2022. Non-native vegetation removal and planting of native vegetation is ongoing.

Action #8 Restore Coastal Bluffs

The [Abalone Cove Habitat Restoration Project](#) (funded by Prop 12 and managed by SCC) aims to restore 13-acres at Abalone Cove Reserve in Rancho Palos Verdes including removal of invasive trees, shrubs, and herbaceous plants; propagation of native plant species; irrigation and planting specifications; and monitoring and reporting protocols. During this reporting period, the project released captive-reared Palos Verdes blue butterflies, an endangered species endemic to Palos Verdes Peninsula, into the restoration site; observed endangered El Segundo blue butterflies at the site, further south than usually observed demonstrating the importance of native habitat along coastal bluffs; planted 1,400 plants; removed weeds with volunteer support; collected seeds, seeded open areas, and held a training on seed collection and processing for interns and the community; held monthly trail maintenance events and trainings for City of Rancho Palos Verdes staff for species of concern at the site; repaired irrigation; and initiated restoration monitoring.

Additional coordination between TBF and LACDBH continues regarding potential bluff restoration projects adjacent to County beaches, including several sites at Dockweiler Beach, and one being led by LACDBH. Several bluff restoration projects are being conducted in the SMBNEP study area by partners such as Palos Verdes Peninsula Land Conservancy, Los Angeles Conservation Corps, City of Redondo, and South Bay Parkland Conservancy. Projects are removing invasive species, planting natives, and providing habitat for the federally endangered El Segundo Blue Butterfly. Additional work continues through a stakeholder engagement group known as the El Segundo Blue Butterfly Coalition (ESB Coalition), bringing together partners from many different non-profit groups, agencies, and representatives from municipalities. The ESB Coalition is working on several projects, including updates to their [new website](#), a mapping tool to track restoration efforts, and coordination of project updates and discussions from many partners.

Action #9 Implement the Malibu Creek Ecosystem Restoration Project:

The lead agencies for the Malibu Creek Ecosystem Restoration Project are the Army Corps and State Parks. The primary purpose of the project is to restore aquatic habitat connectivity along Malibu Creek and its tributaries, establish a more natural sediment regime from the watershed to the shoreline, and restore aquatic habitat of sufficient quality along Malibu Creek and tributaries to sustain or enhance populations of aquatic species within the next several decades, allowing for migratory opportunities to about 15 miles of aquatic habitat that have been unreachable for many decades in this watershed. The project report signed by the Army Corps, Final Environmental Impact Statement, and other documents are publicly available on the [Army Corps website](#).

In February 2022, WCB approved \$12.5 million to complete the engineering plans and specifications to a 90 percent level of completion and the Notice of Exemption was filed. In May 2022, State Parks released a Request for Qualifications to select a contractor to lead the planning, engineering, and design phase. Project design will begin in October 2022 to be completed by Spring 2026.

Action #12 Restore Small Coastal Lagoons

SMBRC staff continued to coordinate with SCC in overseeing implementation of the [Topanga Lagoon Restoration Planning project](#) (funded in part by Prop 12). The project aims to advance the planning effort for the restoration of Topanga Lagoon to improve habitat for the endangered steelhead trout and tidewater goby, be resilient to sea level rise and climate change, as well as improve visitor experience and enhance recreational opportunities. During this reporting period, the project was awarded \$540,000 from State Parks to develop visitor services elements and \$1.6 million from the State budget through a CDFW grant to further environmental review; submitted a Notice of Preparation to announce that State Parks is preparing a EIR for the project; held a public scoping meeting in June 2022 to gather input on what impacts the EIR should consider and analyze to assist in identifying the preferred alternative; and released a music video highlighting the importance of the project. Four coastal surveys occurred in August using side scan sonar and underwater video to survey the seafloor and map the habitat and SCUBA to document invertebrate and fish species, verify algal species observed during previous surveys, and identify any sensitive underwater resources. TBF deployed a water quality sensor in the Lagoon in summer-fall 2022 to help inform this project. This information will be used as baseline documentation of nearshore conditions that will be included in the environmental document for the planning process and results will be made available to the public during the environmental review process.

Action #13 Restore Ballona Wetlands Ecological Reserve

[Ballona Wetlands Restoration Project](#) – CDFW completed the final environmental document for a project to restore the Ballona Wetlands Ecological Reserve, the largest coastal wetland complex in Los Angeles County, in December 2019 and certified the final EIR in December 2020. The project will enhance and establish native coastal wetlands and upland habitat on 566 of the reserve’s 577 acres south of Marina del Rey and east of Playa Del Rey, restoring ecological function to currently degraded wetlands and providing a critical buffer against the effects of sea level rise. In April 2022, CDFW released a request for proposals to complete designs and acquire permits for the first two sequences of the project, which involve removing and relocating an existing gas line and restoring and enhancing an approximate 60-acre degraded tidal, brackish, and freshwater wetland area in South and Southeast Area B of the ecological reserve. At the 20 October 2022 SMBRC Governing Board meeting, CDFW staff reported that a contractor was selected and final design is underway. More information on the project, an FAQ, and links to all the project documents can be found on [CDFW’s project website](#).

[Ballona Reserve Community Stewardship Project](#) – TBF, in partnership with CDFW, Friends of Ballona Wetlands (FBW), and community volunteers are conducting a project to remove invasive vegetation while broadening public involvement and stewardship at the Ballona Wetlands Ecological Reserve (Reserve), in Area B south of Culver Boulevard. During this period, TBF continued maintaining and expanding the community restoration site at the Reserve. TBF staff, partners, and interns continued restoration efforts through frequent site maintenance days. Community events were halted starting in March 2020 through July 2021 as required by LA County Public Health due to COVID-19; however, events reconvened in August 2021 with COVID safety measures in place. From August 2021 through September 2022, a total of 166 volunteers removed approximately 37,080 lbs. of non-native vegetation over the duration of 18 events. Ongoing scientific monitoring and maintenance continued in accordance with the Implementation and Monitoring Plan.

Action #15 Enhance Populations of Rare Species

SMBRC staff continued to coordinate with SCC in overseeing implementation of the reestablishment of California red-legged frogs (CRLF) project (funded by Prop 12). The project builds on an earlier effort by National Park Service (NPS) to reintroduce the CRLF to the Santa Monica Mountains and consists of actions to establish self-sustaining populations of CRLF in Santa Monica Mountain streams and to address impacts from the Woolsey fire. During this reporting period, daytime egg mass surveys continued at three of the four reintroduction sites. Adult and larval CRLF were observed at all survey sites and froglets were observed in two survey sites. Night surveys were conducted at the source site and one of the reintroduction sites which involved capturing, tagging, and swabbing adult and juvenile frogs for chytrid fungus. In October 2021, NPS staff were [interviewed](#) about the project.

Action #17 Implement and Study Runoff Capture Projects

[Prop 84 Grant Program](#) – SMBRC was originally allocated \$18 million in state funding for projects including coastal watershed contamination prevention and coastal and marine habitat restoration. In 2020, the Santa Monica Bay Catch Basin Insert Project by the City of Rancho Palos Verdes completed installation of 1,112 Connector Pipe Screen (CPS) units in catch basins suitable for retrofits in an approximately 14 sq. mile area across three cities in the Palos Verdes Peninsula Watershed draining to Santa Monica Bay. SMBRC and City of Rancho Palos Verdes staff conducted a final site visit in September 2022 and continue to coordinate on closing out the project and finalizing remaining deliverables. At the 15 December 2022 SMBRC Governing Board meeting, City of Rancho Palos Verdes presented on the project including the purpose, CPS unit installation, monitoring results and evaluation, and lessons learned.

Three projects recommended by the Governing Board for Prop 84 funding continued during this period. In September 2020, the [Westwood Neighborhood Greenway Project](#) by the City of Los Angeles completed construction of two parallel bioswales to capture and treat dry- and wet-weather flows from a storm drain and a five-acre impervious area to improve water quality in the receiving waters (Sepulveda Channel, Ballona Estuary and Santa Monica Bay) while providing native habitat for wildlife and opportunities for public engagement. In October 2022, SMBRC and City of Los Angeles staff conducted a final site visit. Also, the project requested received a six-month time extension to allow more time for wet-weather monitoring that couldn't be completed due to lack of rain. City of Los Angeles staff are scheduled to present on the project at the 15 June 2023 Governing Board meeting.

In 2021, the [Ladera Park Water Quality Enhancement Project](#) by LACPW completed construction of a LID stormwater management system to treat, store, and infiltrate runoff from a 110-acre tributary area through a combination of pre-treatment, retention, and infiltration. The project completion date was extended to 31 August 2023 to have time to initiate the water harvesting system, complete landscaping, and finish post-construction monitoring. The project received \$3,211,222 in Prop 84 grant funds.

The [Culver Boulevard Stormwater Filtration/Retention Project](#) by the City of Culver City aims to reduce pollutant loading to Ballona Creek by capturing, treating, filtering, or reusing stormwater and dry-weather flows from a 700-acre drainage area. Project construction was completed in May 2022 and the City of Culver City held a celebration on 30 June 2022. The project received \$3,300,000 in Prop 84 grant funds.

[Prop 12 Grant Program](#) – SMBRC staff continued to coordinate with SCC in overseeing implementation of the [Beach Cities Multi-Benefit Green Streets Project](#). During this reporting period, the project conducted public outreach; completed the 65% designs that map existing utilities, identify best management practices locations, and assess conflicts and required modifications to existing infrastructure; and applied for additional funding from the FY23-24 SCW Program. The project completion date was extended from February 2022 to February 2025. The [Monteith Park and View Park Green Alley Stormwater Capture Project](#) continued work to finalize project designs, opened a construction bid in October 2022, and awarded construction in December 2022.

Action #18 Install and Monitor Pumpout Facilities

[TBF's Boater Education Program](#) works to enhance stewardship and reduce ocean pollution generated by recreational boating activities. A key pollutant of focus is boat sewage. Discharging sewage overboard causes severe environmental and human health problems, especially in a state with more than four million recreational boaters. To reduce the negative impacts of discharging sewage overboard, all boaters are encouraged to use sewage management facilities including pumpout stations, mobile pumpout services, marine composting toilets, dump stations and floating restrooms.

To decrease potential sewage discharged into waterways, TBF's Boater Education Program monitors public boat sewage disposal facilities to ensure southern California's pumpout and dump station network is operational, well-maintained, and accessibly to recreational boaters. Monitoring utilizes the Pumpout Nav app for surveying and additionally provides technical assistance to facility managers that supports maintenance and equipment replacements such as nozzles and banjo valves.

This collaborative approach to pumpout and dump station monitoring is conducted in partnership with San Francisco Estuary Partnership and Morro Bay National Estuary Program which yields statewide consistency. It is supported by the federal Clean Vessel Act Education and Outreach grant administered through California State Parks Division of Boating and Waterways. Pumpout Nav's data is maintained by monitoring agencies and app updates are developed and published regularly. During this reporting period, monitoring of pumpout units found an average 73% usability (based on analysis of equipment performance), and 97% of the pumpout units tested with biodegradable dye tablets were leak-free.

Action #21 Support Policies to reduce Reliance on Imported Water

SMBRC staff continued to coordinate with SCC in overseeing implementation of the [Pure Water Project Las Virgenes-Triunfo](#) (Pure Water Project), which received \$925,720 in Prop 12 funds. The project involves constructing a 100 gallon-per-minute, indirect potable water reuse demonstration project for reservoir augmentation that will produce up to six million gallons of local, drought resistant water supply per day, while improving in-stream habitat. The demonstration facility is needed to test the advanced microfiltration, reverse osmosis, ultraviolet light disinfection, and oxidation components of a Pure Water advanced treatment facility prior to implementation of a full-scale project. Construction of the demonstration facility was completed. LVMWD staff provided a presentation and hosted an in-person tour of the demonstration facility accompanying the June 2022 SMBRC Governing Board meeting.

Action #22 Implement Composting and Landfill Diversion Projects

[Table-to-Farm](#) – The Table to Farm program works with Environmental Charter Schools’ (ECS) three campuses, Environmental Charter Middle School Inglewood, Environmental Charter High School Gardena, and Environmental Charter High School-Lawndale, to implement community composting. These three compost facilities serve the school, community, and local restaurants interested in recycling their organic food scraps. In 2020, a community garden was co-established alongside ECS Inglewood’s campus. During the FY22 time period, volunteer events continued on a monthly basis at the ECS Inglewood community garden; over 100 community members were engaged at ECS Inglewood’s November 2021 Harvest Festival; an ECS Inglewood student-led presentation on composting, community gardens, and food access occurred at a 21 October 2021 [Governing Board meeting](#); and a project [case study](#) on the community garden initiative was produced.

Additionally, funding from the USEPA Environmental Justice Small Grants Program 2021 was acquired to revitalize three Table to Farm compost hubs at ECS Gardena, Lawndale, and Inglewood campuses, retrofit ECS Inglewood's greenhouse, and co-develop a new aspect of its Green Ambassador curriculum. In September 2022, this work was initiated by rebuilding ECS Inglewood compost bin.

Action #24 Include Coastal Resilience into LCP Updates

TBF continued to work with coastal municipalities such as LACDBH, City of Malibu, City of Santa Monica, City of Manhattan Beach, City of Hermosa Beach, City of Los Angeles (Venice Beach) and others to incorporate coastal resilience planning into Local Coastal Program updates / revisions and other policies and actions. TBF continued to support and inform City of Manhattan Beach’s and other cities’ climate resilience efforts, participate on stakeholder committees, and support inclusion of dune restoration into other multi-benefit projects. TBF continues conversations with California Coastal Commission and other state agencies about their inclusion of coastal resilience into state documents and reports. A TBF staff member was also elected to the American Shore and Beach Preservation Association Board of Directors and participated in several meetings, including a focus on incorporation of nature-based resilience planning at a national level.

Action #27 Conduct Boater Outreach to Improve BMPs

[Boater Education Program](#) – This multi-faceted program engages the Southern California boating community to prevent boat-based ocean pollution and foster environmental stewardship. During the FY22 time period, the program developed and furthered [The Changing Tide](#) statewide newsletters, annual Southern California Tide Calendars, Pumpout Nav app, [Southern California Boater’s Guide](#), and a [2022 Clean Boating Questionnaire](#). The program produced a [2021 California Boater Kit Feedback Survey Report](#), [Boater Sewage Disposal Survey Report](#), [2021 Marine Protected Area Boater Education Project Report](#), and [2021 California Clean Vessel Act Pumpout and Dump Station Performance Report](#).

Over 3,000 California Boater Kits were assembled and distributed to Southern California boaters and 109 Dockwalker volunteers were trained. Outreach to the boating community was conducted via co-hosting several virtual webinar events with State Parks and California Coastal Commission with a combined total of 37 total attendees and with one in-person outreach event in Port of Los Angeles. Additionally, community-based social marketing barrier and benefit research was conducted in summer 2022 in Marina del Rey to gain insights on influencing the behavior of proper sewage disposal through stationary sewage pumpout use.

Action #31 Engage Businesses in Water Quality Improvements

[ReThink Disposable](#) – In 2018, TBF partnered with Clean Water Action to bring ReThink Disposable to Los Angeles, a technical assistance program for food service businesses targeting the reduction of single-use disposable items used on-site. By implementing ReThink Disposable, quantitative results of reduced single use disposables and restaurant cost savings have been measured, documented, and utilized to further support of municipal efforts to adopt single-use disposable reduction ordinances. During this reporting period, TBF worked with California Boating Clean and Green Program and Clean Water Action to implement ReThink Disposable at three LA County yacht clubs, in all, the three clubs’ efforts annually eliminate 58,799 single-use disposable items, 845 lbs of trash from entering landfills, and \$2,726 in total net savings.

Additionally, partners produced [a case study](#) on the project and its results, and applied for and secured funding for 2023-2024 restaurant source reduction implementation work in partnership with Clean Water Action, APTIM, and City of Los Angeles.

Action #36 Monitor Climate Change Impacts and Ocean Acidification

[Kelp Forest Hydrodynamic Study](#) – Research led by Dr. Kristen Elsmore resulted in the publication of a study that advanced the state of the science regarding the reduced velocity of ocean water flowing through giant kelp forests. The study was published in the Marine Ecology Progress Series in August 2022 and is titled *Macrocystis pyrifera* forest development shapes the physical environment through current velocity reduction. The study was coauthored by Kerry Nichols, Tom Ford, Katherine Kavanaugh, Kyle Cavanaugh, and Brian Gaylord from CSU Northridge, CRI, UCLA, and UCD, respectively ([Abstract](#)). The publication of the study completes a Next Step in the CCMP “Implement the Kelp Forest Hydrodynamic Study” as well as an Objective “To assess sediment transport, alteration of advective currents, and wave attenuation within kelp forests”. See [Appendix A](#) (Completed Projects in FY23) for more information.

[SCC Strategic Plan](#) – At the 20 October 2022 SMBRC Governing Board meeting SCC staff presented on the SCC’s draft 2023-2037 Strategic Plan, which outlines the agency’s vision and objectives for the next five years and opportunities to increase climate change resiliency and to promote environmental equity and justice, and SCC funding opportunities to further climate resilience.

Ocean Acidification – An array of instruments that measure pH, dissolved oxygen, and pCO₂ have been deployed off the Palos Verdes Peninsula since the second half of 2016 by Los Angeles County Sanitation Districts. Data collected by this project will improve our understanding of ocean acidification and hypoxia in the Santa Monica Bay. The Palos Verdes Wirewalker Special Study commenced in May 2019 to collect data at a second location at a depth of 60 meters which showed less variability as compared to the first deployment year in 15 meters. These data allowed for characterization of the frequency, magnitude, and duration of OAH events in the nearshore surface and offshore bottom layers.

In March 2022, the Wirewalker mooring system was deployed into the water off of Palos Verdes Peninsula following repairs to the probes and sensors. The Wirewalker was retrieved and data was downloaded in June 2022 after the telemetry system stopped communicating with the logger and the flotation device was severed from the system. The system was not deployed again through the end of the project in November 2022. At the 20 October 2022 SMBRC Governing Board meeting, LACSD staff presented on OAH monitoring efforts including regular compliance monitoring and special studies, programs that provide regional context and validate model outputs to inform management actions, and plans to continue quarterly monitoring and assess technological advancements for future studies. See [Appendix A](#) (Completed Projects in FY23) for more information.

Action #38 Monitor Rocky Intertidal Habitats

Research led by Dr. Christina Vasquez resulted in a publication titled Interactive effects of multiple stressors on the physiological performance of the invasive mussel *Mytilus galloprovincialis*. The study published in Marine Environmental Research in June 2022 ([Abstract](#)). Dr. Vasquez and her students produced this research with support from the SMBNEP via CRI and from Seaver College of Science and Engineering. The study highlights that *Mytilus galloprovincialis* is an invasive and stress tolerant mussel; little is known regarding multiple stressor responses in the species; exposure to hyposalinity followed by heat shock revealed stressor interactions; metabolic rate, clearance rate and antioxidant activity were influenced by multiple stressor response; and synergistic and antagonistic effects influence physiology. These findings help SMBNEP better understand how climate change related stressors may impact this invasive species and the habitat that it occupies. See [Appendix A](#) (Completed Projects in FY23) for more information.

III. SMBNEP PLANNED ACTIVITIES

This section outlines each of the FY24 Work Plan actions and next steps to be undertaken during this fiscal year in summary tables. It also highlights whether the project is new or ongoing, objectives, a description/milestone summary, lead entities, partners, outputs/deliverables, long-term environmental results or outcomes, and the connection to the CWA Core Elements. As required by USEPA, a semi-annual report and annual report will provide updates on implementing each task in the FY24 Work Plan and the online database NEPORT will be used to report on habitat restored and funding leveraged in FY24. Outputs or deliverables in the tables are activities, efforts, and associated work products that are produced or provided in addition to the USEPA-required reporting. Outcomes are long-term environmental changes or benefits resulting from implementing the Work Plan actions and next steps. Additional information about each action can be found in the CCMP Action Plan along with an associated narrative.

Many of the FY24 actions are continued from previous efforts or projects. Next steps which are new for this fiscal year are identified with an asterisk in the table; all other projects or next steps should be assumed to be ongoing. Note that next steps or project activities that are part of the CCMP Action Plan but are not currently identified as part of this Work Plan are not included in the tables. That does not preclude them from being part of partner activities or as part of future work plans. Completed tasks are often closely connected to ongoing, similar projects, and/or are part of a larger project. Completed tasks from the FY23 Work Plan are identified in [Appendix A](#).

Due to the continued COVID-19 emergency, implementation of some activities may be altered or restricted to prioritize human health, reduce safety risks, and follow regulatory restrictions. Additional information can be found on TBF or SMBRC's websites, the CCMP Action Plan, and as part of individual products for each project. There will be updates on each of the CCMP actions included in this Work Plan as part of the April semi-annual report and an annual report for FY24 (October 2023). Some actions will have additional deliverables as well (identified in the tables). In 2019, SMBNEP updated the Finance Plan, a component of the CCMP. As part of that revision, significant partner and stakeholder input was received. The table below reflects the updated partners listed for each of the actions and next steps for the FY24 Work Plan. The list of partners and lead entities is not exhaustive and may evolve over time.

CCMP Action #1

Acquire open space for preservation of habitat and ecological services

Long-term Environmental Results / Outcomes: Publicly acquire new open space as it becomes available throughout the watershed to promote connectivity, preserve habitat, and sustain ecological services

Clean Water Act Core Elements*: 5, 6, 7

Action #1 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Support partners in identification and prioritization of key acquisition or conservation easement properties	SMBRC	SMMC, MRCA, NPS, State Parks, RCDSMM, CDFW	To acquire and/or protect high priority properties that are at risk of development, or provide high diversity, include wildlife corridors, and/or provide local socio-economic benefits	Communicate with partners on efforts to identify high-priority parcels for acquisition and support identification of funding sources

* Per USEPA: (1) establishing water quality standards, (2) identifying polluted waters and developing plans to restore them (total maximum daily loads), (3) permitting discharges of pollutants from point sources (National Pollutant Discharge Elimination System permits), (4) addressing diffuse, nonpoint sources of pollution, (5) protecting wetlands, (6) protecting coastal waters through the National Estuary Program, and (7) protecting Large Aquatic Ecosystems.

CCMP Action #2

Restore kelp forests in the Bay to improve the extent and condition of the habitat

Long-term Environmental Results / Outcomes: Restore 150 acres of kelp forest to improve habitat functions, local fisheries, and coastal resilience

Clean Water Act Core Elements: 6

Action #2 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Implement the rocky reef/kelp forest restoration project	TBF	NOAA, MSRP trustees, NMFS, Vantuna Research Group, Commercial Sea Urchin Harvesters, CDFW, SeaTrees, Marauder Robotics, OPC	To restore three acres of rocky reef kelp forest by reducing urchin density within barrens to the target 2 urchins per square meter to allow the reestablishment of giant kelp; To inform statewide restoration and management of kelp forest/rocky reefs	Partner with fisherman to cull urchin densities within the urchin barrens in targeted locations; utilize robotic / AI technology to assist culling and monitoring efforts; develop partnerships and support for continued kelp restoration attaining 3 to 5 acres in FY24. Output / Deliverable: Annual Report (Kelp Project)
Biological response monitoring of restoration areas	TBF	VRG, CDFW	To track the response of the kelp forest community after restoration activities occur	Conduct pre-restoration monitoring of urchin barrens and post-restoration monitoring of resulting kelp forests; complete annual community structure surveys of reference and restored sites. Output / Deliverable: Annual Report (Kelp Project)

Action #2 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Develop recommendations for the deposition of materials from Rindge Dam or other suitable sources to augment sediment supply	State Parks	TBF, VRG, others, CDFW	To support scientific analyses, inform priorities, and assist with site evaluations and communications for material deposition	Communicate with lead agencies to provide scientific and other support, especially relating to deposition or placement of larger materials relating to reef enhancement
Conduct carbon sequestration assessment of kelp restoration project	TBF	Universities, SeaTrees, Industry,	To assess carbon sequestration potential of kelp forest restoration	Develop research priorities, identify potential partners

CCMP Action #3

Recover abalone populations in the Santa Monica Bay and region to support rare species and socioeconomic benefits to people

Long-term Environmental Results / Outcomes: Establish 2-3 minimally viable green and red abalone populations (i.e., at least 2,000 abalone per hectare) in the Bay; establish 1-2 viable white abalone populations (i.e., at 2,000 abalone per hectare) in the Bay

Clean Water Act Core Elements: 6

Action #3 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Establish abalone outplanting sites and conduct juvenile and larval outplanting	TBF	NOAA, NMFS, Cal Poly Pomona, SCMI, NFWF Bodega Marine Lab, SWFSC, PMRG, CDFW,	To reintroduce abalone, test effectiveness of outplanting methods, and assess habitat site suitability	Conduct habitat suitability surveys for outplant sites; implement two outplant events focused on white and red abalone in established restoration areas
Monitor abalone restoration and reference sites	TBF	NOAA, NMFS, Cal Poly Pomona, SCMI, NFWF Bodega Marine Lab, SWFSC, PMRG, CDFW	To conduct SCUBA-based surveys within outplant sites to assess the survivability of outplanted abalone and suitability of the site for future outplanting efforts	Conduct surveys to collect shells and live abalone re-encounter rates, growth data, and genetic samples of outplanted abalone; conduct wild abalone population and habitat suitability surveys along southern California mainland coast and Channel Islands (i.e., Catalina and San Clemente Islands surveys). Output / Deliverable: Semi-Annual Project Reports (Abalone)

Action #3 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Maintain aquaculture facility for abalone	TBF	SCMI, NOAA, NMFS, CDFW, Bodega Marine Lab Aquarium of the Pacific, Cabrillo Marine Aquarium, The Cultured Abalone Farm, MLML, LightHawk	To facilitate captive spawning and rearing of red and white abalone in support of future restoration activities for outplanting in the wild; to serve as central staging facility for southern California outplant efforts	Maintain and operate laboratory to house endangered white abalone and increase program wide capacity for culturing and rearing white abalone larvae and juveniles; conduct daily water quality testing and husbandry tasks

CCMP Action #4

Assess and restore seagrass habitats in the Santa Monica Bay and nearshore environments to benefit marine ecosystems and improve coastal resilience

Long-term Environmental Results / Outcomes: Restore 2-5 acres of seagrasses to the Bay to improve habitat functions and coastal resilience

Clean Water Act Core Elements: 6

Action #4 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Survey the extent and condition of seagrasses in the Bay using R2Deep2, side-scan sonar, and SCUBA divers to inform the Comprehensive Monitoring Program	TBF	SCC, CRI, VRG, PMRG, others	To survey the extent and condition of seagrasses in the Bay using SCUBA divers and side-scan sonar, to inform the CMP and restoration activities	Complete annual surveys in the Malibu and Catalina Island eelgrass beds to inform the extent (area) and condition of the beds and inform condition using recommended protocols
Develop restoration methods for eelgrass (<i>Zostera pacifica</i>) in the Santa Monica Bay	TBF	SCC, CRI, NOAA, CDFW, PMRG, others	To improve understanding and probability of success for offshore eelgrass restoration using transplant methods	Evaluate success of eelgrass transplant to three sites in SMB
Conduct pilot restoration project(s) of offshore eelgrass in the Bay	TBF	SCC, CRI, NOAA, CDFW, PMRG, others	To conduct a pilot restoration project of offshore eelgrass in the Bay within a one-acre footprint	Monitor eelgrass transplant pilot project established at three sites within SMB; seek funding to replicate methods in additional sites in SMB

Action #4 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Evaluate restoration potential of seagrasses in the Bay, harbor, wetlands, and nearshore environments	TBF	NOAA, CRI, UCLA, Scripps Institution of Oceanography, VRG	To improve understanding and probability of success for seagrass restoration projects	Conduct wave attenuation studies to determine effect of eelgrass restoration; collect physical oceanographic data, sediment cores and eDNA samples in transplant sites and existing eelgrass beds, develop site suitability criteria

CCMP Action #5

Assess and implement offshore artificial reefs to benefit marine ecosystems and provide socioeconomic benefits to people

Long-term Environmental Results / Outcomes: Implement artificial reef projects to achieve 69 new acres of rocky reef habitat of a similar condition as reference reef habitats

Clean Water Act Core Elements: 6

Action #5 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Implement rocky reef restoration project off Palos Verdes	VRG	SCMI, Vantuna Research Group, PV MSRP, NOAA, SCC, TBF, CDFW	To restore 42 acres of rocky reef habitat lost to landslides activity using high relief rocky modules that will resist future burial from sediment deposition	Continue to annually monitor the biological community response of the Palos Verdes Reef Project, the artificial rocky reef restoration project off Bunker Point (previously funded by Prop 12)
Annual monitoring with the use of side scan sonar and SCUBA based surveys	VRG	PV MSRP, NOAA, TBF, CRI, CSULB	To assess nearshore coastal marine habitats using side-scan sonar and SCUBA to inform data gaps in the CMP and future restoration projects; to understand the movements, positions, and permanence of great white sharks, giant sea bass, and other species of interest in SMB	Support VRG in development of baseline monitoring plan to inform restoration activities; bi-monthly data download and maintenance of acoustic telemetry receivers by CSULB
Preliminary work regarding the benefits of dynamic revetments and nearshore reefs	VRG	TBF, CRI, others	To preliminarily advance work towards understanding dynamic revetments and nearshore reefs, including feasibility of using recycled concrete for construction	Assemble related research and initiate assessment of this approach to coastal engineering

CCMP Action #6

Restore coastal strand and foredune habitat to beaches and sandy shores to improve coastal resilience

Long-term Environmental Results / Outcomes: Restore 10 acres of coastal strand and dune habitat along Santa Monica Bay beaches to improve ecological function, increase coastal resilience, and provide habitat for rare species

Clean Water Act Core Elements: 6

Action #6 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Continue long-term monitoring of the Santa Monica Beach Restoration Pilot Project	TBF	City of Santa Monica, State Parks, Audubon	To continue long-term monitoring to inform coastal resilience, ecosystem benefits, and adaptive management of the restoration area	Conduct physical and biological surveys at the frequency described in the CDP amendment’s Adaptive Management Plan; continue coordination with project partners and advance the planning, permitting, outreach, and implementation of an additional dune restoration site.
Conduct Phase 1 (outreach and planning) and Phase 2 (implementation) of the Malibu Living Shoreline Project	TBF	City of Malibu, LACDBH, SCC, CRI	To restore three acres of beach and dune habitat to improve coastal resilience and ecosystem benefits and improve public engagement	Conduct post-restoration monitoring, site maintenance, and outreach; continue coordinating with partners and exploring opportunities for project site expansion. Output / Deliverable: Annual Report (MLSP)

Action #6 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Find funding for and implement another beach and bluff restoration project	TBF	LACDBH, City of LA, SCC, City of Manhattan Beach, City of Malibu, CDFW, USFWS, Audubon, USC Sea Grant	To restore 3.5 acres of bluff, beach, and eelgrass habitat as part of a living shoreline pilot project (Los Angeles Living Shoreline Project); restore dune habitats in Manhattan Beach through iceplant removal and revegetation with native plants	Implement the LA Living Shoreline Project and Manhattan Beach Dune Restoration Project in partnership with the Los Angeles Conservation Corps; conduct post-restoration monitoring, site maintenance, and outreach; continue coordinating with partners and exploring opportunities for site expansion; explore other potential sites for dune restoration; continue to explore research questions related to restoration elements
Support efforts to standardize sandy beach monitoring and a regional approach to restoration	TBF	Beach Ecology Coalition, CRI, SCC, Cal Sea Grant, USC Sea Grant, UCSB, others	To continue efforts to standardize sandy beach monitoring and data collection for southern California through stakeholder partnerships and CMP implementation	Participate in the Beach Ecology Coalition group, continue stakeholder and scientific communications, continue Healthy Beaches project in partnership with CRI, continue monitoring and data collection efforts; initiate conversations about rapid standardized beach assessment

CCMP Action #7

Restore and maintain the entire LAX Dunes system to support native plants, wildlife, and rare species

Long-term Environmental Results / Outcomes: Restore 48 acres of LAX Dune system to improve native dune functions and provide habitat for rare species; Maintain larger 300-acre Preserve to benefit rare species and dune plants and wildlife

Clean Water Act Core Elements: N/A

Action #7 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Conduct community restoration events in the northern 48-acre dune area	TBF	LAWA, FOLD, SCC, CCC	To engage community through hands-on stewardship and habitat restoration through events held at the LAX Dunes	Recruit, train, and educate community volunteers to conduct non-native vegetation removal at LAX Dunes events
Support LAWA in long-term maintenance and adaptive management of the 48-acre northern dune area	TBF	LAWA, LACC, California Botanic Garden, Psomas, CRC, IOEI, CDFW, Cooper Ecological Monitoring	To continue and strengthen partnership with LAWA to restore and maintain the LAX Dunes	Conduct restoration through non-native vegetation management, native plant programs, restoration training, and monitoring
Engage underserved students and volunteers and inland communities	TBF	LAWA, SCC, LACC	To recruit underserved students and volunteers, particularly from inland communities, to participate in hand-on stewardship and restoration at the LAX Dunes	Enhance volunteer program to increase recruitment of underserved students and volunteers from inland communities through amplified outreach, capacity building, and partner development

Action #7 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Initiate planning for areas within the adjacent dunes, including baseline monitoring	TBF	LAWA, LACC, California Botanic Garden, Psomas, CRC, IOEI, CDFW, USFWS, WCS, Cooper Ecological Monitoring	To conduct baseline monitoring and develop recommendations for habitat management	Continue monitoring of adjacent 52-acre dune area to develop baseline data and restoration recommendation; explore research opportunities

CCMP Action #8

Restore coastal bluff habitats in the Bay watershed to support ecosystem services

Long-term Environmental Results / Outcomes: Restore 5 acres of bluff habitats in the Santa Monica Bay watersheds to support ecosystem services

Clean Water Act Core Elements: N/A

Action #8 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Use Beach Bluff Restoration Master Plan to explore bluff restoration and continue recovery of El Segundo Blue Butterfly	TBF	USFWS, CDFW, LAWA, City of LA, Friends of Ballona, PVPLC, El Segundo Blue Butterfly Coalition, others	To provide habitat and ecological benefits in support of the recovery and eventual delisting of the endangered El Segundo Blue Butterfly and to restore bluff habitats	Continue partnership and stakeholder coordination, data consolidation, and development of adaptive management recommendations and actions
Identify partners and funding to support bluff restoration projects	TBF	PVPLC, State Parks, CDFW, City of LA, USFWS, LACDBH, many others	To establish project partners, project sites, and identify potential funding sources in support of bluff restoration	Continue to identify and coordinate with project partners, agencies, and stakeholders to prioritize project locations; identify and apply for potential funding sources for bluff restoration (see also Action 6)
Initiate restoration of one bluff restoration project	PVPLC	SCC, TBF, City of LA, LACDBH, USFWS	To restore 13 acres of rare coastal bluff habitat to support threatened and endangered wildlife and plant species, reduce coastal erosion, improve water infiltration, and enhance public access	Continue implementation of the Abalone Cove Habitat Restoration Project funded by Prop 12 and led by PVPLC

Action #8 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Initiate Point Dume stair replacement and bluff restoration project to benefit people and wildlife	State Parks	TBD	To replace a deteriorated beach access staircase and restore bluff habitat at Point Dume State Beach	Continue phase 2 implementation, including restoration of habitat impacted by construction of the new stairs which was completed in October 2022

CCMP Action #9

Implement Malibu Creek Ecosystem Restoration Project (Rindge Dam and other barrier removals) to support ecosystem restoration

Long-term Environmental Results / Outcomes: Complete implementation of the Malibu Creek Ecosystem Restoration Project including the removal of barriers to improve stream and riparian habitats and to benefit the steelhead trout

Clean Water Act Core Elements: 5, 6, 7

Action #9 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Support lead agencies in efforts to complete the design and engineering plans for the Malibu Creek Ecosystem Restoration Project	State Parks, Army Corps	TBF, RCDSMM, CDFW, CalTrout, others	To develop design and engineering plans to remove Rindge Dam and additional barriers, to restore terrestrial and aquatic habitat connectivity and establish natural sediment transport regime	Develop engineering plans and specifications to 90% level of completion

CCMP Action #10

Remove additional barriers to support fish migration and ecosystem services

Long-term Environmental Results / Outcomes: Complete implementation of the Malibu Creek Ecosystem Restoration Project including the removal of barriers to improve stream and riparian habitats and to benefit the steelhead trout

Clean Water Act Core Elements: 2, 5, 6

Action #10 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Identify, prioritize, and acquire funding for barrier removal projects	RCDSMM, State Parks, NPS	CDFW, many	To engage with partner entities to identify potential opportunities for fish barrier removal	RCDSMM to conduct snorkel surveys to assess abundance and distribution of Southern California steelhead trout in Arroyo Sequit, Malibu, and Topanga Creeks and inform restoration opportunities by monitoring before and after removal of natural and human-caused barriers to fish migration; Opportunistically attend meetings and engage in conversations to advance project prioritization and funding

CCMP Action #12

Restore smaller coastal lagoons and other wetland types to increase wetland habitat area and condition throughout the watershed

Long-term Environmental Results / Outcomes: Restore and increase wetland and transition habitat acreages for small lagoons such as Topanga Lagoon and other wetland systems to improve ecological functions

Clean Water Act Core Elements: 2, 5, 6

Action #12 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Finalize restoration planning and permitting for Topanga Lagoon restoration project and initiate project	State Parks	SCC, RCDSMM, CalTrans, LACBH, CDFW	To create a restored habitat that integrates fish passage barrier removal, wetland habitat restoration, visitor services, and recreational opportunities at Topanga Lagoon, funded by Prop 12	Continue the environmental planning process, including releasing the draft EIR
Complete land acquisition, feasibility analyses, and restoration design in coordination with bridge redevelopment for Trancas Lagoon	RCDSMM, LACFCD	CalTrans, Army Corps, CDFW, LACPW	To restore habitats adjacent to Trancas Lagoon after CalTrans bridge expansion is completed	Participate when possible in a scientific advisory capacity on habitat restoration elements of RCDSMM's Trancas Lagoon project; LACPW to continue feasibility analysis for the separate Trancas Canyon Channel Restoration project which aims to improve flood protection and allow for fish passage where feasible in upper reaches of the channel that flows to Trancas Lagoon

Action #12 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Conduct comprehensive monitoring of small lagoons in northern Bay to inform CMP and seek funding to continue Malibu Lagoon monitoring	SCCWRP, SMBRC	Moss Landing Marine Labs, SWRCB, TBF, CRI, State Parks, RCDSMM	To conduct comprehensive monitoring of the northern Bay lagoons, inform the Comprehensive Monitoring Program (wetlands chapter), and acquire funding to continue long-term monitoring and data collection at Malibu Lagoon	Execute grant agreement and implement Prop 50 wetland monitoring program led by SCCWRP (if approved) to fill CMP data gaps for small lagoons

CCMP Action #13

Restore Ballona Wetlands Ecological Reserve to enhance wetland habitats and benefits to people

Long-term Environmental Results / Outcomes: Restore 577-acre Ballona Wetlands Ecological Reserve to improve wetland, transition, and upland habitats, functions, and services; Create public access trails and bike paths and encourage recreation and stewardship at the Ballona Wetlands Ecological Reserve

Clean Water Act Core Elements: 2, 5, 6, 7

Action #13 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Support the lead agencies by contributing technical information to the Final Environmental Impact Statement and Report and permitting	CDFW	Army Corps, TBF, LACFCD, SCC	To support the lead agencies in completing permitting and a federal environmental review document	Continue implementation of sequences 1 and 2 of restoration which involve removing and relocating an existing gas line and improving tidal circulation and freshwater flows as analyzed in the EIR; Continue to provide technical support and communication with the lead agencies to restore Ballona Wetlands
Continue community engagement and hand-restoration within the Reserve with FBW	TBF	CDFW, Friends of Ballona Wetlands, Edith Reed and Associates, SCC	To restore four acres of degraded wetland and transition habitat at the Ballona Wetlands Ecological Reserve through community restoration	Continue to conduct community restoration events and biological monitoring in accordance with permits (TBF and FBW); produce an annual report; continue restoration activities in accordance with stewardship project funded by Prop 12 (includes two acres of wetland and adjacent transitional habitat). Output / Deliverable: Annual Report (Community Restoration Project)

Action #13 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Support lead agencies to identify and obtain restoration funding	CDFW	SCC, TBF, LACFCD	To support lead agencies in finding funding to implement the Ballona Wetlands Restoration Project	Provide support to lead agencies to acquire funding to implement the project

CCMP Action #14

Implement wildlife crossings and other innovative projects for benefits to wildlife and people

Long-term Environmental Results / Outcomes: Complete construction and implementation of two major freeway wildlife crossing projects to benefit wildlife, genetic diversity, and people

Clean Water Act Core Elements: N/A

Action #14 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Support lead agencies to find funding for Phase 2 of the Liberty Canyon Wildlife Crossing project	CalTrans, MRCA	RCDSMM, Assm. Bloom, SCC, SMMC, NWF, CDFW, NPS	To implement phase 2 (Final/100% Design) of the Liberty Canyon Wildlife Crossing Project , also known as the Wallis Annenberg Wildlife Crossing, in support of wildlife movement and safety and enhanced habitats	Attend meetings and conduct other communications and outreach activities to support implementation of phase 2
Support lead agencies in permitting and environmental review of Liberty Canyon Wildlife Crossing project	CalTrans, MRCA	RCDSMM, SCC, SMMC, NWF, CDFW	To complete implementation of the Liberty Canyon Wildlife Crossing Project in support of wildlife movement and safety and enhanced habitats	Continue construction of the crossing section over the 101 freeway and complete final design and engineering plans of the section over Agoura Road

CCMP Action #15

Implement projects that improve understanding and/or enhance endangered and threatened species populations (e.g., habitat improvements for Western Snowy Plover, genetic banking)

Long-term Environmental Results / Outcomes: Improved extent and condition of habitats for rare species throughout the Bay and its watershed

Clean Water Act Core Elements: 2, 5, 6

Action #15 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Support Southern California Steelhead Trout genetic banking study	RCDSMM	NPS, State Parks, USFWS, CDFW, others	To conduct the Southern California Steelhead Trout genetic banking study to inform population recovery	RCDSMM to develop an action plan that identifies priority watersheds and potential tools for recovering fish during acute disturbances and restoring habitat, fish passage, and instream flows
Support restoration and monitoring activities to benefit California red legged frog populations	NPS	SCC, State Parks, RCDSMM, TBF, CDFW, USFWS	To improve riparian and stream habitats to support populations of California red legged frog	Continue working with grantees to implement the California red legged frog (<i>Rana draytonii</i>) reestablishment project funded by Prop 12
Support projects within western snowy plover critical habitat	TBF	LACDBH, City of Santa Monica, City of LA, City of Malibu, USFWS, CDFW, City of Hermosa, Audubon, others	To provide habitat and ecological benefits in support of the threatened Western Snowy Plover and to restore critical habitat	Continue beach and dune restoration projects and continue to inform management actions in support of ecological benefits to the plovers

CCMP Action #16

Support the implementation of activities and projects such as those in Enhanced Watershed Management Plans (EWMPs) and activities identified in the TMDL implementation schedule to help achieve TMDL goals for 303d listed waterbodies in the Bay and its watershed

Long-term Environmental Results / Outcomes: Assist in achieving constituent percentage load reduction targets for waterbodies in the Santa Monica Bay according to TMDL compliance timeline

Clean Water Act Core Elements: 1, 2, 4, 5, 6, 7

Action #16 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Continue to support implementation of projects identified in EWMPs and WMPs	SMBRC	SWRCB, municipalities, LACFCD, CDFW	To allocate and oversee State Bond funding for implementation of projects identified in EWMPs and WMPs; support implementation of projects made available under the SCWP	Continue to oversee implementation of capital projects for storm water pollution reduction through multi-benefit solutions (also see Action 17); support the Stormwater Strategy efforts led by the SWRCB. Output / Deliverable: Final Project Reports
Continue implementation of LA IRWMP	LACFCD	SMBRC, others	To facilitate and support coordination and allocation of IRWMP funding and implementation of projects identified in EWMPs and WMPs in the watershed	Continue to participate in the Greater Los Angeles County Region IRWM Leadership Committee and IRWM Sub-Region South Bay Steering Committee, including proposed project review and selection

Action #16 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Facilitate other sources of State funding	SCC	Municipalities, LACFCD	To facilitate and support allocation of funding from other State bond measures such as Prop 1 and 65 for implementation of projects identified in EWMPs and WMPs in the watershed	Outreach and support project applications by municipalities where appropriate, and keep the SMBRC Governing Board and membership informed of progress

CCMP Action #17

Infiltrate, capture, and reuse stormwater and dry-weather runoff through green infrastructure, LID, and other multi-benefit projects and improve understanding of ecosystem services provided

Long-term Environmental Results / Outcomes: Assist in achieving constituent percentage load reduction targets for waterbodies in the Santa Monica Bay according to TMDL compliance timeline

Clean Water Act Core Elements: 2, 4, 5, 6, 7

Action #17 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Complete additional LID projects throughout the watershed	Municipalities	SMBRC, SWRCB, SCC, City of LA, City of Torrance, LA County, other watershed cities, LA County, NPS	To complete more LID projects throughout the watershed to improve flood protection and water quality, and provide additional benefits	Continue to implement three of the previously funded Prop 84 projects: Culver Boulevard Urban Stormwater Project , Westwood Neighborhood Greenway Project , and Ladera Park Water Quality Enhancement Project ; Continue to implement two Prop 12 projects: Monteith Park and View Park Green Alley Stormwater Capture Project and Beach Cities Multi-Benefit Green Streets Project

CCMP Action #18

Support installation and monitoring of additional sewage and bilge pumpout facilities in Southern California harbors

Long-term Environmental Results / Outcomes: Meet 86-100% annual average usability percentage (based on analysis of equipment performance) for all publicly funded sewage pumpout stations throughout Southern California

Clean Water Act Core Elements: 4

Action #18 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Continue quarterly monitoring of public sewage pumpout stations	TBF	CDBW, marina operators	To assess the condition of public sewage pumpout and dump stations	Conduct triannual monitoring (per CVA grant directive) of public sewage pumpout and dump stations in Southern California harbors; deliver on phase two and initiate phase three of statewide sewage volume study with SFEP. Output / Deliverable: Annual California CVA Pumpout and Dump Station Performance Report
Support installation of sewage pumpouts in Marina del Rey or King Harbor	TBF	CDBW, marina operators	To provide the boating community with additional pollution prevention resources	Conduct outreach regarding the need for additional sewage pumpouts and dump stations and advocate for California CVA pumpout and dump station Installation and Operations and Maintenance grants
Support installation of bilge pumpouts in Marina del Rey or King Harbor	TBF	marina operators	To support installation of bilge pumpouts	Conduct outreach and distribute information regarding the need for additional pollution prevention resources

Action #18 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Support efforts of neighboring harbors in installation of bilge and sewage pumpouts in southern California	TBF	CDBW, marina operators	To provide the boating community with additional pollution prevention resources	Conduct outreach regarding the need for additional pollution prevention resources and advocate for California CVA pumpout and dump station Installation and Operations and Maintenance grants

CCMP Action #20

Support elimination of non-point pollution from onsite wastewater treatment systems

Long-term Environmental Results / Outcomes: Achieve level of performance and water quality protection set by state policy for all OWDS in the Santa Monica Bay watershed

Clean Water Act Core Elements: 4, 5, 6, 7

Action #20 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Complete sewer connections of residential properties to the centralized wastewater treatment facility in the Malibu Civic Center area	City of Malibu	LARWQCB	To improve water quality and reduce nutrient pollution through connecting residential properties to the centralized wastewater treatment facility	Monitor and inform SMBRC Governing Board, other stakeholders, and the general public on the progress made by the City and LARWQCB's efforts in completing the sewer connection
Continue the coordinated OWTS identification, permitting, and inspection system between the LARWQCB and the cities and counties in the watershed	LARWQCB	Municipalities	To continue to support efforts by the LARWQCB and cities and counties to achieve full implementation of the statewide policy for siting design, operation, and maintenance of OWTSs	Monitor and inform the SMBRC Governing Board membership, other stakeholders, and the general public on the progress made by the LARWQCB and cities and counties in implementation of the state-wide policy for siting design, operation, and maintenance of OWTSs

CCMP Action #21

Support policies that promote reuse, recycling, and advanced wastewater treatment to reduce reliance on imported water sources

Long-term Environmental Results / Outcomes: Help reduce dependence of the Los Angeles region on imported water and lower the percentage of imported water use by water agencies; work towards meeting the State’s goals for recycled water in the Recycled Water Policy

Clean Water Act Core Elements: 4, 6, 7

Action #21 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Support recycled wastewater efforts by JWPCP of LACSD	LACSD, MWD	LACFCD, SMBRC	To support expansion of wastewater effluent recycling by JWPCP of LACSD	Monitor and inform the SMBRC Governing Board membership, other stakeholders, and the general public on the progress made by JWPCP of LACSD in expansion of wastewater recycling through the Pure Water Southern California project; Continue testing at the Advanced Purification Center demonstration facility and release draft EIR
Hyperion Treatment Plant to implement pilot project for recycled water	LASAN	LACFCD, SMBRC	To support timely completion of Hyperion's Recycled Water Program	Monitor and inform the SMBRC Governing Board membership, other stakeholders, and the public on the implementation progress of Hyperion's Recycled Water Program

Action #21 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Support recycled wastewater efforts by Tapia Water Reclamation Facility and others through expansion of distribution system and regional partnerships	Las Virgenes-Triunfo JPA, SCCWRP, UCLA, City of Santa Monica	LACFCD, US Bureau of Reclamation, LVMWD, TWSD, SMBRC, many	To support expansion of recycled wastewater distribution and reuse	Release Requests for Qualifications and Proposals, select consultants, and begin design for the advanced water purification facility and conveyance elements of the Las Virgenes-Triunfo JPA's Pure Water Project

CCMP Action #22

Support policies and implement projects that divert landfill waste and encourage composting to improve water quality and lower greenhouse gas emissions

Long-term Environmental Results / Outcomes: Establish 10 local community-based compost hubs and divert food waste from 20 food service establishments; distribute compost among community support agriculture, gardens, and restoration projects

Clean Water Act Core Elements: 4, 6

Action #22 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Support continuation of Table to Farm compost hubs	Schools	TBF, Environmental Charter Schools, Social Justice Learning Institute, Restaurants, LA Compost, LA Food Waste Prevention & Rescue Working Group	To reduce food waste being sent to landfills, compost food waste, and apply compost to urban gardens to grow food	Support Table to Farm compost hubs at Environmental Charter Schools (ECS) in Gardena, Inglewood, and Lawndale and ECS Inglewood’s community garden; enrich ECS Inglewood parkway community garden with fruit trees; support partners in strengthening and generating additional Los Angeles’ community compost projects

Action #22 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Support expansion, outreach and implementation for residential and commercial organics collection and recycling	Municipalities	TBF, CalRecycle, LA Food Waste Prevention & Rescue Working Group, LACPW	To support greenhouse gas reduction by way of residential and commercial organics recycling implementation by city and state regulatory agencies	Participate in LA Food Policy Council Food Waste Prevention Working Group; support efforts of partners and municipalities on the implementation and outreach of organics recycling to meet California’s Short-Lived Climate Pollutants Law implementation targets

CCMP Action #23

Facilitate development and adoption of natural stream and riparian protection policies, including restoration

Long-term Environmental Results / Outcomes: Assist a minimum of one municipality in the watershed in the adoption of a stream protection policy

Clean Water Act Core Elements: 1, 2, 5

Action #23 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
* Complete and adopt LA City stream protection policy	City of LA, LA County	Heal the Bay	To prevent further stream hardening and protect, preserve, and restore riparian habitats, stream biodiversity, and wildlife corridors associated with streams and further implementation of the LA Countywide Sustainability Plan	Identify a lead agency and assemble a technical advisory committee to make recommendations for components of a stream protection ordinance and priority sites; Identify sites with feedback from stakeholders

CCMP Action #24

Support the inclusion of coastal resilience through natural means and softscape measures into local coastal plan updates

Long-term Environmental Results / Outcomes: Inclusion of climate change adaptation measures in at least half of the 12 local coastal jurisdictions general plans (or equivalent) amendments

Clean Water Act Core Elements: 7

Action #24 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Attend stakeholder meetings for local cities LCP development / updates / implementation	Municipalities	LACDBH, TBF, CRI, Heal the Bay, RWQCB, Army Corps	To continue involvement in stakeholder meetings for local cities LCP development and implementation	Attend and participate in stakeholder meetings, workshops, and conversations related to LCPs and promote the inclusion of natural living shoreline measures as a coastal resilience strategy
Opportunistically assist cities in the development of sea level rise vulnerability studies	Municipalities	USGS, TBF, CDFW, others	To identify and partner with cities to develop sea level rise vulnerability studies to strategically recommend coastal resilience strategies	Partner with cities in the development of sea level rise vulnerability studies and recommend natural living shoreline measures be included as adaptation strategies
Use data collected from beach restoration “soft-scape” projects to inform and assist LCP development	TBF	LACDBH, CRI, municipalities	To provide science-based data to inform LCP development and support beach restoration	Use data from regional beach restoration projects as case studies to inform adaptation solutions and future natural living shoreline projects

CCMP Action #25

Support best management practices, increased public access, and improved public facilities for beaches and other public trail systems to support both enhanced natural resources values and benefits to people

Long-term Environmental Results / Outcomes: Improve access to the coast and enhance coastal experiences through linking and expanding the California Coastal Trail; develop and build partnerships that support the implementation of natural infrastructure throughout the Bay watersheds

Clean Water Act Core Elements: N/A

Action #25 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Support implementation of identified actions within plans such as the LACDBH Sea Level Rise Vulnerability Assessment	LACDBH, Municipalities	SCC, City of Los Angeles, City of Manhattan Beach, State Parks, TBF, others	To implement adaptation projects that will improve coastal resilience	Develop and begin implementation of coastal adaptation projects that address sea level rise and planning efforts within climate action plans

Action #25 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Continue to advise BMPs for beaches that promote habitat condition improvements and support for unique species	LACDBH	LACDBH, Pepperdine, Beach Ecology Coalition, beach managers, Audubon, TBF, CRI, USFWS, CDFW, USC Sea Grant, Cal Sea Grant, Heal the Bay	To build upon and continue partnerships with groups and agencies to benefit beach habitat conditions	Continue partnerships and active participation with groups and agencies such as LACDBH, Audubon Society, Pepperdine, Beach Ecology Coalition, State Parks, and USFWS to implement and provide recommendations for best management practices along beaches

CCMP Action #27

Produce educational resources and materials and conduct outreach to improve best management practices for Southern California boaters (e.g., fuel, sewage, and hazardous waste management)

Long-term Environmental Results / Outcomes: Increase understanding and adoption of sustainable boating habits to reduce boating related pollutants entering waterways (e.g., boat sewage, used oil, antifreeze, bilge water, batteries, copper, trash, and aquatic invasive species)

Clean Water Act Core Elements: 4

Action #27 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Produce educational materials	TBF	CCC, CDBW, SFEP	To produce educational materials to increase awareness of boating best management practices to boaters	Produce and distribute <i>The Changing Tide</i> newsletters, Southern California Tide Calendar, California Boater Kits, and an interactive Clean Boater Questionnaire; continue to promote <i>Southern California Boater’s Guide</i> , Pumpout Nav app, and informational videos (on y-valves, marine sanitation devices, marine composting toilets, and Marine Protected Areas); secure additional funding to continue to promote awareness of MPAs amongst boaters and foster a norm of compliance with corresponding laws (relates to Action 39). Output / Deliverable: Newsletters; Tide calendars

Action #27 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Conduct outreach	TBF	CCC, CDBW	To conduct outreach to increase awareness of boating best management practices to boaters	Conduct direct outreach to boating community via virtual and in-person events, presentations, and trainings; evaluate Community-Based Social Marketing (CBSM) work that informs proper boat sewage disposal behavior change outreach strategies
Manage Pumpout Nav app	SFEP	CDBW, TBF	Increase proper disposal of boater sewage	Support coordination of statewide focus groups on the app’s use, aim to implement key insights gained into future app development; continue to contribute to supporting the app’s maintenance and development
Research public engagement metrics and specific engagement tools on reduction of pollutants to waterways	TBF	CCC, CDBW, CRI	To optimize public engagement resources to increase impact of pollutant reduction strategies to waterways	Continue data collection, analysis, assessment, and adaptive management of project(s) to optimize effectiveness
Find funding and implement fuel spill prevention tools and outreach	TBF	Fuel docks, marina operators , CCC, CDBW	To reduce fuel and oil pollution from the boating community	Distribute 2,000 of each respective oil spill prevention tool to boaters: fuel bibs, oil absorbent pillows, and oil absorbent sheets in partnership with the California Boating Clean and Green Dockwalker program; distribute oil absorbent pillows to marina and harbor facility contacts as needed

Action #27 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Support and develop marine debris reduction and cleanup efforts	TBF	CCC, CDFW, marina operators	To reduce fishing line marine debris from the angling community	Promote fishing line recycling facilities via the distribution of annual Southern California Tide Calendar booklets and amplifying digital do-it-yourself monofilament recycling instructions

CCMP Action #28

Support efforts of disadvantaged communities to achieve healthy habitats, implement green infrastructure, and reduce pollution

Long-term Environmental Results / Outcomes: Help disadvantaged communities to achieve healthy habitats through restoration and pollution reduction projects

Clean Water Act Core Elements: 4, 6, 7

Action #28 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Support IRWMP and similar programs to preferentially invest in disadvantaged communities	SMBRC, LACPW	LA County, other watershed cities	Support green infrastructure projects for IRWMP and SCWP funding in disadvantaged communities	Support and facilitate efforts to identify and develop green infrastructure projects for IRWMP and SCWP funding in disadvantaged communities through participation and communications; and participate in IRWM and SCWP committees, including proposed review and selection of projects that benefit disadvantaged communities

CCMP Action #29

Reduce health risks of swimming in contaminated waters and consuming contaminated seafoods through more comprehensive source control and, advanced monitoring and public notification

Long-term Environmental Results / Outcomes: Achieve no elevated health risks associated with swimming and seafood consumption through source control, monitoring, and public notification

Clean Water Act Core Elements: 4, 6

Action #29 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Continue implementation and improvement of beach water quality monitoring and reporting system	SWRCB	LARWQCB, LAC-DPH, CRI, Heal the Bay	To support SWRCB’s collection and coordination of bacterial sampling results for beach water quality monitoring required under AB 411; To support Heal the Bay's efforts to standardize beach water quality monitoring and effectively disseminate the information to the public	Continue SWRCB’s participation in the California Water Quality Monitoring Council (CWQMC), assistance in updating and maintaining the CWQMC's Safe to Swim map and other interactive maps, and opportunistically explore ways to coordinate with other beach water quality reporting systems; Heal the Bay to continue to update the grading methodology for the River Report Card, and maintain the NowCast system, and publish the Beach and River Report Cards for the public

Action #29 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
<p>Maintain and enhance the existing seafood contamination education and enforcement program</p>	<p>EPA Superfund</p>	<p>FCEC partners, Heal the Bay, USEPA, SWRCB, USC Sea Grant, California Sea Grant</p>	<p>Support and facilitate the continuation and enhancement of the existing seafood contamination education and enforcement program</p>	<p>Continue to participate in the Fish Contamination Education Collaborative and Palos Verdes Shelf Technical Information Exchange Group and to develop the Feasibility Study and the Second Monitored Natural Recovery Study for the Palos Verdes Shelf Superfund Site; Provide updates to the SMBRC Governing Board regarding the deep ocean DDT contamination in the Southern California Bight including research to address management needs and the findings of the Deep Ocean DDT+ Research Needs Assessment for the Southern California Bight Report</p>

CCMP Action #30

Conduct community engagement, education, and inform policies related to water conservation and reuse to reduce water demand and reliance on imported sources

Long-term Environmental Results / Outcomes: Help reduce dependence of the Los Angeles region on imported water and lower the percentage of imported water use by water agencies

Clean Water Act Core Elements: 6

Action #30 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Link water conservation with outreach events and social media	TBF, others	LADWP, MWD, municipalities, TreePeople, LAUSD, Heal the Bay, others	Opportunistically incorporate water conservation topics during outreach events and on social media	Engage and educate the community and volunteers about local water conservation issues and solutions during restoration events, targeted outreach, and TBF social media postings
Educate, engage communities, and provide resources that promote the importance of native plants	TBF, others	LADWP, MWD, municipalities, TreePeople, LAUSD, CRI, many	Promote the use of drought tolerant native plants	Educate community and volunteers on the importance of using drought tolerant native plants in habitat restoration and residential landscaping
Support efforts by water agencies to promote water conservation and reuse including dissemination of materials	LADWP, City of Santa Monica	LADWP, MWD, municipalities, TreePeople, LAUSD, many	Promote current information on water conservation and reuse efforts developed by water agencies	Share current water conservation and reuse incentives and goals developed by water agencies to promote the use of these programs and to educate the public

CCMP Action #31

Achieve water quality benefits by businesses through community engagement and implementation of best management practices

Long-term Environmental Results / Outcomes: Achieve Clean Bay Certified adoption by 100% of Bay watershed cities; develop and distribute BMP materials to food service establishments and marine fuel docks

Clean Water Act Core Elements: 4, 6

Action #31 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Distribute restaurant engagement tools	TBF	Municipalities	To reduce pollution from restaurants	Support Clean Bay Certified restaurant program partners; advance pollution prevention best management practices such as ReThink Disposable and source reduction projects (see Action 32)

CCMP Action #32

Reduce marine debris by supporting bans on single-use items, conducting outreach, and participating in trash reduction programs

Long-term Environmental Results / Outcomes: Implement ban on single use disposable plastics in Los Angeles County and 100% of cities throughout watershed; engage 30 food service establishments as ReThink Disposable participants

Clean Water Act Core Elements: 4

Action #32 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Find funding for and continue ReThink Disposable LA	TBF	Clean Water Action/ Clean Water Fund, food service establishments, APTIM, City of LA	To contribute to source reduction of single-use disposable items from food service establishments	Engage and convert at least 80 food service providers on source reduction; acquire additional funding to continue source reduction and ReThink Disposable work in the LA vicinity. Output / Deliverable: Case studies
Support municipality bans of polystyrene, non-recyclable plastics, and single use items	Reusable LA, City of Santa Monica, LA County Chief Sustainability Office, LACPW, other municipalities	TBF, Surfrider Foundation, Heal the Bay, 5 Gyres, Algalita, OPC, NOAA, USEPA, The Ocean Cleanup, other stakeholders	To contribute to source reduction of polystyrene, non-recyclable plastics, and single use items	Participate in Reusable LA coalition and support mobilization of local and state legislation targeting single-use disposable food and beverage ware source reduction and reuse implementation; Continue to operate LACPW’s Ballona Creek Trash Interceptor , the pilot project to test a solar-powered trash collection device designed to capture floating plastic, trash and litter before they reach the ocean

CCMP Action #33

Monitor microplastics (including microfibers) and other marine debris in the Bay and coastal environments to inform management actions

Long-term Environmental Results / Outcomes: Use microplastics data analyses and identified trends to inform source reduction management strategies in the Bay

Clean Water Act Core Elements: 4

Action #33 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Complete the development of a microplastics in sediment extraction and analysis method	CRI, SCCWRP	TBF, OPC	To complete the development of a microplastics in sediment extraction and analysis method	Complete and publicly release the protocol. Output / Deliverable: Final Microplastics Method Report or manuscript
Publish a manuscript on the results of the Bay studies	CRI	TBF	To assist in characterizing microplastics in the Bay and nearshore environment and disseminate results	Complete a final report or manuscript on the microplastics research program. Output / Deliverable: Final Microplastics Method Report or manuscript
Conduct additional studies to inform the transport, accumulation, and fate of microplastics in our marine and nearshore environments	CRI, SCCWRP	TBF	To continue to collect data to inform the regional fate and transport model of microplastics in the nearshore marine environment	Complete a final report or manuscript on the microplastics research program. Output / Deliverable: Final Microplastics Method Report or manuscript

CCMP Action #34

Improve understanding of emerging contaminants through monitoring and research to inform source control and reduce loading (e.g., fire retardants), especially in the context of climate change

Long-term Environmental Results / Outcomes: Reduce impacts of emerging contaminants on key habitats in the Bay and its watersheds

Clean Water Act Core Elements: 4

Action #34 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Improve analytical methodology and standardize monitoring of more emerging contaminants	SCCWRP	Physicians for Social Responsibility, Water Foundation	To improve availability, sensitivity, and repeatability of analytical methods for emerging contaminants to improve data quality for monitoring emerging contaminants in aquatic ecosystems	Support expanding list of contaminants monitored and monitoring reports and description of lab methods to analyze emerging contaminants

CCMP Action #35

Monitor and inform management actions for Harmful Algal Blooms (HABs)

Long-term Environmental Results / Outcomes: Reduce prevalence of HABs in the Bay and its waterbodies as measured by the Comprehensive Monitoring Program

Clean Water Act Core Elements: 4, 5, 6, 7

Action #35 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Continue to support research and monitoring efforts for HABs, especially in context of climate change and CMP implementation	SCCWRP, UCLA, UCSC, SCCOOS	CRI, JPL/NASA	To support research and monitoring efforts that fill data gaps in our region for HAB occurrences, frequencies, causes, and impacts, especially in the context of climate change	Explore emerging technologies like remote sensing and DNA technology to better understand and fill data gaps related to HABs, complete plankton HAB sampling study led by CRI. Output / Deliverable: Completed CRI HAB Report or Manuscript
Conduct monthly maintenance of SCCOOS shore station at Santa Monica Pier and seek support for additional sensors	SCCOOS	TBD	To collect data on oceanographic conditions in the nearshore environment and potentially inform long-term changes related to environmental factors, including climate change	Monthly maintenance of the Santa Monica Pier Shore Station. Output/Deliverable: Real time data available on SCCOOS website

CCMP Action #36

Monitor chemical, physical, and biological characteristics in the Bay to inform climate change impacts such as ocean acidification

Long-term Environmental Results / Outcomes: Development and implementation of adaptation strategy addressing impacts of ocean acidification in the Bay

Clean Water Act Core Elements: 6, 7

Action #36 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Support inclusion of climate change impacts into CMP, especially through new models and data	TBF	TAC, CRI, CDFW, many others	To implement monitoring associated with new climate change indicators in the CMP; to seek funding and implement the CMP; to complete and release the State of the Bay Report	Complete State of the Bay Report with TAC and consultant; Complete QAPP revisions. Output / Deliverable: Completed State of the Bay Report; revised QAPPs
Convene technical advisors to prioritize actions based on information from CMP	SMBRC, SWRCB	TBF, SCCWRP, CSU Fullerton, Occidental College, Pepperdine University, Culver City	Implement projects approved for Prop 50 grant funding that prioritize monitoring and data collection needs based on the revised CMP for major habitats in the Bay and other monitoring needs identified in the CCMP	Execute grant agreements for the six projects approved for Prop 50 funding and work with grantees to oversee project implementation (also see Action 40)

CCMP Action #37

Increase understanding of deep-water habitats such as submarine canyons, deep reefs, and outfall pipe

Long-term Environmental Results / Outcomes: Enhance functions and conditions of deep marine environments (e.g., deep reefs) in the Bay

Clean Water Act Core Elements: 6

Action #37 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Conduct ROV surveys to collect physical, chemical, and visual data	TBF	TAC, VRG	To use the ROV to conduct underwater surveys to supplement monitoring	Develop ROV use protocols, explore sensor integration, and deploy the ROV to collect physical, chemical, and visual data
Identify and apply emerging technology and techniques to better characterize Bay habitats, including recommendations	TBF, many	TAC, USC Sea Grant, SCMI, CRI, Blue Robotics, City of LA EMD, LACSD, CRI, SCCWRP, Marauder Robotics, CDFW, UCLA, others	To utilize cutting edge advancements in remote sensing, and remote platforms to better characterize the condition of the Bay’s habitats	Contribute to the development and deployment of next gen data collection platforms to assess health of the Bay’s habitats; track monitoring reports and video from LASAN outfall pipe surveys; explore nearshore bathymetry survey opportunities with ROV

CCMP Action #39

Monitor and inform effective management of Marine Protected Areas, Fishery Management Plans, and local fisheries for recreational and commercially important species

Long-term Environmental Results / Outcomes: Inform agency enforcement plans and long-term adaptive management of MPAs, assist with fishery related public health advisories

Clean Water Act Core Elements: 6

Action #39 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Conduct MPA Watch to monitor and inform use of MPAs in the Bay	LA Water-keeper, Heal the Bay	LA MPA Collaborative	To implement a community-science based program to monitor activities in MPAs and encourage appropriate enforcement and regulation activities	Present the MPA Decadal Management Review to the Fish and Game Commission, continue participation in LA MPA Collaborative meetings and efforts to broaden awareness and increase equity and inclusion in access to MPAs; Train MPA Watch volunteers, conduct shore-based surveys, share data with local enforcement agencies, and conduct outreach to the public and interested stakeholders; See Action 27 for additional MPA outreach efforts related to the boating/angling community

CCMP Action #40

Research and inform best management and pollution reduction practices to address non-point source pollution and facilitate reduction

Long-term Environmental Results / Outcomes: Assist in achieving constituent percentage load reduction targets for waterbodies in the Santa Monica Bay according to TMDL compliance timeline

Clean Water Act Core Elements: 4

Action #40 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Identify partners and identify funding sources for long-term monitoring efforts for LID and water conservation efforts	City of Santa Monica, many	LA County, municipalities, LACPW, Our Water LA Coalition	To establish project partners and identify potential funding sources in support of long-term monitoring for LID and water conservation efforts	Continue to work with project partners, agencies, and stakeholders to develop MOUs or other agreements with partners
Implement monitoring programs for long-term monitoring and to inform effectiveness of LID/BMP implementation projects	Many	TAC, CRI, municipalities, LACPW, Our Water LA Coalition	To fill data gaps and inform LID/BMP effectiveness in reducing non-point source pollution, especially nutrient pollution	Continue to encourage the implementation of enhanced and standardized monitoring programs developed by the TAC for all infrastructure projects funded under the SCWP; explore research opportunities or supplemental monitoring

CCMP Action #41

Facilitate research, monitoring, and assessments that inform more accurate waste load allocations and development of new water, sediment, and biological objectives

Long-term Environmental Results / Outcomes: Assist in achieving constituent percentage load reduction targets for waterbodies in the Bay according to TMDL compliance timeline

Clean Water Act Core Elements: 4

Action #41 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
* Conduct or support data collection for water quality objective development	SWRCB, LARWQCB	Many	To review and, as appropriate, modify and adopt water quality standards as new data and information become available or as specific needs arise; To achieve the goals of the Governor’s August 2022 Water Supply Strategy and the mandate of Water Code section 113561.2	LARWQCB to continue the 2023-2025 Triennial Review of water quality standards in the Basin Plan, including holding a public hearing to identify and prioritize possible additions and revisions to water quality standards that will be further researched and potentially addressed through subsequent Basin Plan amendments; By 31 December 2023, SWRCB to consider adoption of proposed uniform water recycling criteria for direct potable reuse through raw water augmentation

CCMP Action #42

Inform strategies to reduce greenhouse gas emissions and increase carbon sequestration in support of existing state actions and policies

Long-term Environmental Results / Outcomes: Implement and support carbon sequestration/cycle monitoring, research, and quantification as part of projects to inform or prioritize efforts

Clean Water Act Core Elements: N/A

Action #42 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Conduct research to establish rate of carbon sequestration associated with key habitats in the Santa Monica Bay and its watershed	SCCWRP, UCI, UCLA, TBF	SCC, local cities, CRI, others	To conduct research to identify processes and metrics to further understand rates of carbon sequestration within key habitats in Santa Monica Bay and its watershed	Collaborate with partners and leverage beach and eelgrass restoration projects to conduct research that contributes towards understanding carbon flux, sequestration processes, and rates

CCMP Action #43

Implement the County-wide SCWP to support stormwater pollution control projects

Long-term Environmental Results / Outcomes: Assist in achieving constituent percentage load reduction targets for waterbodies in the Santa Monica Bay according to TMDL compliance timeline

Clean Water Act Core Elements: 4, 6, 7

Action #43 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Participate in advisory board and support implementation of projects from the new funding mechanism	SMBRC	LA County, municipalities	To improve stormwater management in urban areas, protect water quality within our communities, provide new sources of water for current and future generations, and reduce stormwater pollution through attainment of water quality objectives, increased stormwater retention, increased service to disadvantaged communities, and coordination of efforts across the County	Support SCWP’s infrastructure programs, technical resources programs, and scientific studies that improve water supply, water quality, and public health and provide nature-based and multi-benefit solutions throughout the watershed; Continue to participate on the SCWP South Santa Monica Bay Watershed Area Steering Committee including project review and selection; and Convey the SMBRC Governing Board’s recommendations to the LA County Board of Supervisors regarding SCWP funding for projects that further the CCMP Action Plan

CCMP Action #44

Support the development and implementation of a comprehensive regional sediment management plan for restoring natural hydrological functions of river systems and mitigating impacts from climate change

Long-term Environmental Results / Outcomes: Complete and implement a comprehensive regional sediment management plan to restore natural functions where possible and mitigate impacts of climate change

Clean Water Act Core Elements: 6, 7

Action #44 Next Steps / Project Name	Lead Entities	Partners	Objectives	Description / Milestone Summary
Build capacity and conduct pilot projects to inform future actions and advance program development/design	TBF, others	USGS, CRI, USC Sea Grant, State Parks, CCC, SCC, CDFW	To utilize pilot level projects to test assumptions and develop preferred methods for sediment transport and/or placement	Initiate planning for pilot projects

SMBNEP Organizational Needs

The following SMBNEP tasks are activities to be performed in FY24 per USEPA requirements:

REPORTING TO USEPA

Consistent with USEPA NEP funding guidance, Commission staff and The Bay Foundation staff will develop reports on implementing the FY24 Work Plan and outlining how funds were spent in the fiscal year including a semi-annual report due in spring 2024 and an annual report due in fall 2024. Commission staff and The Bay Foundation staff will also complete annual reporting on habitat restored and funding leveraged (i.e., NEPORT) in fall 2024.

BIL LONG-TERM PLAN AND EQUITY STRATEGY

In November 2021, Congress passed the BIL to invest in the nation's infrastructure and resilience. The BIL allocates \$132 million to USEPA to be distributed evenly among the 28 NEPs for activities that further implementation of the CCMPs. For SMBNEP, this amounts to \$909,800 annually over five years to implement the eight projects included in the [FY22-23 BIL Work Plan](#). Each NEP must also develop a BIL Long-Term Plan describing the key activities to be pursued through all funding years (FY22-26), including an Equity Strategy detailing how the NEP will contribute to the goal of at least 40 percent of BIL funding benefits flowing to underserved communities. The BIL Long-Term Plan and Equity Strategy are due to USEPA by June 1, 2023, before FY24 begins in October 2024. In FY24, TBF staff in collaboration with SMBRC staff will work to implement the BIL Equity Strategy; use the BIL Equity Strategy as a framework for non-BIL funded projects to update communication and outreach strategies, better define and engage with underserved communities, disadvantaged communities, and Black, Indigenous, and People of Color communities and identify partners, barriers, and projects that directly benefit these communities; build and maintain partnerships; and identify opportunities for future updates to the BIL Equity Strategy.

UPDATE SMBNEP CCMP

The SMBNEP CCMP was revised in 2017 and 2018 and was formally adopted in October 2018. NEP programs are expected to undertake periodic revision and updates of their respective CCMPs to ensure that they are contemporary and relevant while supporting the identified priorities of the Management Conference. This could include integrating equity into all of the SMBNEP's work. In addition, the CCMP must be consistent with USEPA guidance. The USEPA published the [NEP CCMP Revision and Update Guidelines](#) (May 3, 2016) providing the criteria for an update of the CCMP. Based upon the guidelines the SMBNEP CCMP should be updated in FY24.

SMBNEP PERFORMANCE EVALUATION

The primary purpose of the Program Evaluation (PE) process is to help the USEPA assess how NEPs are making progress in achieving programmatic and environmental results through implementation of their CCMPs. The PE process ensures national program accountability and transparency while incorporating local priorities considerations and demonstrates the value of federal investment in local estuarine and coastal watershed restoration and protection.

The PE consists of the following elements per [USEPA's NEP PE Guidance](#) (30 September 2021):

1. Development and submission of a package covering the NEP's five-year evaluation period with self-reflections on environmental and programmatic work plan accomplishments, program implementation, and ecosystem and community status;
2. Site visit with PE team; and
3. Documentation of PE findings via a formal letter from USEPA.

SMBNEP is scheduled to start the PE process in FY24 and submit the PE package by 1 April 2024.

QUALITY ASSURANCE PROJECT PLANNING

Quality Assurance Project Planning and the specific Quality Assurance Project Plans (QAPPs) are produced to create successful environmental programs or projects. Within USEPA's Pacific Southwest Region 9 there are numerous online resources including Guidance, Templates, and Management Planning to support the development of [QAPPs](#). Ongoing ecological restoration, coastal resilience, and environmental monitoring efforts of the SMBNEP may require QAPPs if they produce data that will be used to define the success of a given program or project. In addition, data are often generated to comply with permit requirements, assess the success of a given project, and inform adaptive management. Several QAPPs need to be developed during FY24. In FY21, a QAPP was approved for a subtidal eelgrass research and restoration project, subsequently amended in FY22. Additional QAPPs are in development during FY22-FY23 targeting Harmful Algal Blooms (HABs), additional eelgrass methods, Sandy Shores, Rocky Intertidal, Kelp Forests, and Abalone.

Prioritization for these efforts will be based upon readiness and the priorities identified in the FY24 SMBNEP Work Plan. Input is being gathered in the first two quarters of 2023 to develop the final FY24 Work Plan. This period of plan development will influence the direction of the SMBNEP's efforts for FY24 including QAPP development.

IV. ESTIMATED FY24 BUDGET AND TRAVEL

This section contains the estimated and projected budget for FY24. SMBNEP’s budget and Work Plan are fluid as only the USEPA annual allocation is a consistent income source. SMBNEP works with numerous partners and collaborators to develop projects and find funds and staff that support the SMBNEP and supplement the USEPA annual allocation. As a result, new projects are always in development and staffing allocations of time and budget shift frequently to meet new obligations as additional funds are secured.

The Work Plan was brought before the Policy Committee of the SMBNEP in April 2023 and may be adjusted when full funding is determined. Any adjustment will reflect the SMBNEP’s and Host Entity’s “The Bay Foundation’s” work during October 2023 to September 2024. Any such adjustments to USEPA NEP funding will be documented in an amendment to the budget and Work Plan, approved by USEPA.

Estimated Funding Authorization Summary Table, 320 plus Match:

FY24 Funding Authorization (October 1, 2023 – September 30, 2024)	Estimated Funds
USEPA 320 FY24 Base Funding Plus Estimated Supplemental *	850,000
SMBRC – Match	285,000
The Bay Foundation – Match	495,000
Loyola Marymount University – Match	70,000
Estimated Funding Total	1,700,000

Descriptions of Action Categories in estimated operating budget:

- **Direct Management Actions:** to support implementation of CCMP Actions #1-18, including, but not limited to restoration of kelp forests, dunes, wetlands, and other habitats. These actions also provide support for native species such as abalone, rare species, and others.
- **Governance and Policy:** to support implementation of CCMP Actions #19-25, including, but not limited to efforts to improve water treatment facilities, adopt policies, inform management actions, and support best management practices.
- **Stakeholder Education and Engagement:** to support implementation of CCMP Actions #26-32, including, but not limited to reducing marine debris, conducting community engagement and education priorities, informing and reducing health risks to people, and implementing programs such as the Boater Education Program.
- **Research and Monitoring:** to support implementation of CCMP Actions #33-42,

including, but not limited to researching and informing management actions, emerging contaminants, climate change impacts, and implementing the Comprehensive Monitoring Program.

- **SMBNEP Support / CCMP Tracking:** to support the development and implementation of CCMP, through CCMP progress tracking, SMBNEP reporting, and development of SMBNEP products.

Summary Table of Estimated 320 Funds by Action Categories:

Work Plan Action Categories	Estimated Funds *
Direct Management Actions	186,606
Governance and Policy	20,914
Stakeholder Education and Engagement	100,769
Research and Monitoring	163,510
SMBNEP Support / CCMP Tracking	378,201
TOTAL *	850,000

* Note that the FY24 320 budget funds are estimated by action category.

Estimated Operating Budget for FY24 and Estimated Matching Funds:

Estimated Operating Budget		
Salaries (Staff time allocations):	USEPA 320	Match
Direct Management Actions	55,429	270,000
Governance and Policy	12,081	0
Stakeholder Education and Engagement	48,911	0
Research and Monitoring	58,389	0
SMBNEP Support / CCMP Tracking	218,492	235,000
Fringe Benefits and Taxes @ 30% (estimate)	117,990	0
Total Salaries and Benefits:	511,292	505,000

SMBNEP FY24 Work Plan – Final Approved

Travel:	USEPA 320	Match
Annual NEP Tech Transfer Conference (location TBD)	2,500	0
Annual ANEP/USEPA Meeting in Washington DC	2,500	0
Staff & Stakeholder Travel Expenses: year-round State and Local Travel (includes airfares, mileage, ridesharing, parking, etc.)	3,000	0
Total Travel:	8,000	0

Equipment:	USEPA 320	Match
N/A	0	0
Total Equipment:	0	0

Supplies:	USEPA 320	Match
Marine Supplies (SCUBA gear replacements)	800	0
Stakeholder and Engagement Supplies (outreach materials, tripod, microphone)	800	0
CCMP Action #22 (compost bin and community garden maintenance supplies)	500	0
Small Equipment (replacement of laptops, desktops, cameras, printers, and other small equipment under \$5,000 each)	6,000	0
Program Materials (field and lab materials, gloves, shovels, etc.)	3,000	0
Office Supplies (printer ink, paper, flash drives, pens, etc.)	3,000	0
Total Supplies:	14,100	0

Other:	USEPA 320	Match
Marine Facilities & Maintenance (SoCal Marine institute space, berth, storage, dive locker, boat maintenance, tank fills, others)	12,420	0
Marine Safety (annual gear service, tank tumbles and inspections, dive insurance service, AAUS membership, and dive safety officer services, others)	9,600	0
Sensors/Sondes Maintenance & Upgrades (including recalibration, cleaning, repairs, and maintenance of ocean acidification sensors and watershed sondes)	8,000	0
Conferences & Meetings Expenses (includes conference fees, Management Conference meetings (refreshments, meals, etc., for Stakeholder, TAC, EC, GB, and other meetings), and other year-round conferences and meetings.	9,499	0
IT Services, Web Service & Maintenance, and Software (includes office software like Microsoft software, Google software, electronic signature, email distribution, cloud storage, collaboration and planning software, and others), and program software (ArcGIS, ADA compliant Adobe, Airtable, Smartwaiver, Trello, and others)	24,000	0
Printing & Design (printing and design for reporting, etc.)	2,000	0
Communications (Video conference software, Audio visual services)	9,000	0
Loyola Marymount University (office space, laboratory space, meeting rooms, faculty and staff support)	0	60,000
Loyola Marymount University (CRI research support)	0	10,000
Waterboards Administrative Services (space, admin services, facilitators, and other support)	0	50,000
Volunteer Labor (Match)	0	25,000
Total Other:	74,599	145,000

SMBNEP FY24 Work Plan – Final Approved

Contracts / Studies:	USEPA 320	Match
CRI Research (Beach Characterization Studies, Seagrass Ecology Research and Conservation, Harmful Algal Bloom Dynamics, Marine Invertebrate Physiology Research, Tree Swallow Nesting Research,)	70,000	0
Communications Consulting (media relations and video production services)	12,500	0
State of the Bay Consulting	5,000	0
3Lane -website maintenance	2,640	0
Native plant propagation (seeds and plants)	32,500	0
TAC (member honoraria and State of the Bay chapters)	8,500	0
Other Contracts (Match only)	0	200,000
Total Contracts / Studies:	131,140	200,000

Indirect @ 15%:	USEPA 320	Match
Total Indirect @ 15%:	110,870	0

TOTAL BUDGET	850,000	850,000
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**USEPA 320 FY24 BUDGET ESTIMATE
BUDGET SUMMARY ESTIMATE BY ACTIONS**

Budget Summary	CCMP Actions Budget Summary	Subtotal	Overhead (15%)	Total
1	CCMP Action #2 Restore Kelp Forests	\$28,686	\$4,303	\$32,989
2	CCMP Action #3 Recover Abalone Populations	\$14,685	\$2,203	\$16,887
3	CCMP Action #4 Assess and Restore Seagrass Habitats	\$29,382	\$4,407	\$33,789
4	CCMP Action #6 Restore Healthy Beaches	\$63,444	\$9,517	\$72,960
5	CCMP Action #8 Restore Coastal Bluffs	\$8,405	\$1,261	\$9,665
6	CCMP Action #12 Restore Small Coastal Lagoons	\$6,715	\$1,007	\$7,722
7	CCMP Action #13 Restore Ballona Wetlands Ecological Reserve	\$9,260	\$1,389	\$10,649
8	CCMP Action #15 Enhance Populations of Rare Species	\$1,690	\$254	\$1,944
9	CCMP Action #22 Implement Composting and Landfill Diversion Projects	\$5,665	\$850	\$6,515
10	CCMP Action #24 Include Coastal Resilience into LCP Updates	\$1,565	\$235	\$1,800
11	CCMP Action #27 Conduct Boater Outreach to Improve BMPs	\$2,273	\$341	\$2,614
12	CCMP Action #30 Community Engagement water conservation	\$1,220	\$183	\$1,403
13	CCMP Action #31 Engage Businesses in Water Quality Improvements	\$2,511	\$377	\$2,888
14	CCMP Action #32 Reduce Marine Debris	\$13,634	\$2,045	\$15,679
15	CCMP Action #35 Monitor Harmful Algal Blooms	\$19,913	\$2,987	\$22,900

SMBNEP FY24 Work Plan – Final Approved

Budget Summary	CCMP Actions Budget Summary	Subtotal	Overhead (15%)	Total
16	CCMP Action #36 Monitor Climate Change Impacts and Ocean Acidification	\$8,000	\$1,200	\$9,200
17	CCMP Action #38 Monitor Rocky Intertidal Habitats	\$16,001	\$2,400	\$18,401
18	CCMP Action #39 Monitor and Inform MPAs, FMPs, and Local Fisheries	\$6,474	\$971	\$7,446
19	CCMP Action #44 sediment transfer	\$1,252	\$188	\$1,440
20	CMP- CRI Research Management	\$68,130	\$10,220	\$78,350
21	CMP - Rocky Intertidal	\$3,913	\$587	\$4,500
22	CMP - Wetlands	\$14,000	\$2,100	\$16,100
23	CMP - TAC State of The Bay	\$4,500	\$675	\$5,175
24	Communications & Engagement	\$67,988	\$10,198	\$78,186
25	Governance & Policy	\$10,955	\$1,643	\$12,599
26	Program Development and Outreach	\$85,096	\$12,764	\$97,860
27	Planning, Support, and Products	\$228,615	\$34,292	\$262,907
28	2024 Performance Evaluation Support	\$15,161	\$2,274	\$17,435
TOTAL		\$739,131	\$110,870	\$850,000

Travel Documentation

With respect to participation in federal NEP activities, staff supporting the SMBNEP will continue to attend two annual meetings each year, either traveling in person or via video conferencing, and may also be involved in planning the meeting activities and/or lead technical workshops during the meetings. In addition, staff will attend regional NEP meetings, workshops and special NEP-related conferences and training and workshops when feasible. Staff may identify opportunities to make presentations at conferences and workshops to provide educational and technical assistance and share “lessons learned” with other NEPs and watershed-based organizations throughout the nation.

The FY23 travel summary table provides a summary of events and travel from the last fiscal year through March 2023. The FY24 table provides an estimate of travel for the next fiscal year.

FY23 Travel Summary Table through March 2023:

Date	Event/Trip Purpose	Location	Staff	Cost
Oct/Nov 2022	Annual NEP Tech Transfer Conference / Information sharing and technology transfer among NEPs and partners	In person meeting, RAE Estuary Summit, New Orleans, Louisiana	Tom Ford,	2,277
Mar 2023	ANEP / USEPA National Conference. Conference for NEPs, USEPA, and partners	In person meetings held at USEPA offices, Washington, DC	Tom Ford	2,850
TOTAL	N/A	N/A	N/A	5,127

FY24 Estimated Travel Summary Table:

Date	Event/Trip Purpose	Location	Staff	Estimated Cost
Oct – Dec 2023	NEP Tech Transfer Conference / Information sharing and technology transfer among NEPs and partners.	TBD	Tom Ford, TBD	2,000
Feb - Mar 2024	ANEP / USEPA National Conference / Conference for NEPs, USEPA, and partners.	Washington, D.C.	Tom Ford, TBD	3,000
All Year, multiple dates	Staff & Stakeholder Meetings and conferences travel / Information sharing and technology transfer among NEPs, partners, and stakeholders.	Various CA Locations	All staff	3,000
TOTAL	N/A	N/A	N/A	8,000

Appendix A. Completed Projects in FY23

KELP FOREST HYDRODYNAMIC STUDY

CCMP Action: #36

Long-Term Environmental Results / Outcomes: Development and implementation of adaptation strategy addressing impacts of ocean acidification in the Bay

CWA Core: 6, 7

Lead: UC Davis

Partners: TBF, CSU Northridge, UCLA IoES

Objective: To assess sediment transport, alteration of advective currents, and wave attenuation within kelp forests.

Brief Project Description: This study assessed alongshore current velocities of ocean water flowing through giant kelp (*Macrocystis pyrifera*) forests to understand how the attenuation of such currents evolves as new kelp forests emerge and mature. The study quantified alongshore current velocities outside and within a temperate rocky reef environment that twice underwent a transition from a barren state to one in which a thick surface canopy was present.

Major Accomplishments: The study found that relatively young, thin forests can induce substantially reduced flows and that the presence of a young forest's subsurface canopy and increase in height create a seasonally changing profile of varying velocities through the water column. These results indicate greater complexity in how canopy-forming kelp influence nearshore flow properties than has often been recognized. Also, emerging forests can alter the nearshore environment through modulation of current speeds shortly following initial recruitment, with consequences for the transport of larvae, nutrients, and sediment throughout the forest and adjacent habitats.

Key Deliverables: Completed manuscript in August 2022 in Marine Ecology Progress Series titled *Macrocystis pyrifera forest development shapes the physical environment through current velocity reduction*.

MARINE INVERTEBRATE CLIMATE RESPONSE STUDY

CCMP Action: #38

Long-Term Environmental Results / Outcomes: Implementation of the Comprehensive Monitoring Program to achieve a better understanding of the extent and condition of habitats in the Santa Monica Bay and its watershed.

CWA Core: 6

Lead: UCLA

Partners: CRI, MARINe

Objective: To improve understanding of rocky intertidal habitats to fill CMP data gaps and inform restoration activities.

Brief Project Description: This study explored the physiological response of the invasive mussel *Mytilus galloprovincialis* to multiple climate stressors by examining the metabolic rate, superoxide dismutase antioxidant enzyme activity, and clearance rate of mussels after exposure to hyposalinity and heat shock.

Major Accomplishments: The study found that exposure to hyposalinity followed by heat shock revealed a significant influence on the mussels' physiology and identified synergistic effects on metabolic rate under the most extreme treatment. Superoxide dismutase antioxidant enzyme activity was the greatest under 20°C exposure while clearance rate declined under heat shock, suggesting that mussels experiencing multiple stressors may become energy limited as metabolic rate increases and feeding rates decrease.

Key Deliverables: Completed manuscript in June 2022 in Marine Environmental Research, titled *Interactive effects of multiple stressors on the physiological performance of the invasive mussel Mytilus galloprovincialis*.

2019 PALOS VERDES WIREWALKER SPECIAL STUDY

CCMP Action: #39

Long-Term Environmental Results / Outcomes: Development and implementation of adaptation strategy addressing impacts of OA in the Bay.

CWA Core: 6, 7

Lead: LACSD

Partners: SMBRC

Objective: To continue using high-frequency, high-resolution OA sensors to characterize OAH conditions in Santa Monica Bay.

Brief Project Description: Deployment of OA sensors to accurately collect real-time data at high-resolution, both temporally and vertically through the water column, and characterize OAH levels and variability in the upper 100m of the water column.

Major Accomplishments: The project commenced in May 2019 and concluded in November 2022. When functional, the system provided unparalleled visualization of oceanographic conditions on the Palos Verdes shelf. These data showed spatial-temporal variability unable to be captured by traditional mooring systems, which could allow for events such as algal blooms or plume movement to be contextualized through the water column. This was also an opportunity for LACSD staff to learn more about this cutting-edge technology through deployment and troubleshooting of system elements.

Key Deliverables: Updates in semi-annual and annual reports. [Presentation](#) at the SMBRC October 20, 2022 Governing Board meeting.

Appendix B. SMBNEP Entities Staffing

SMBNEP works as a collaborative partnership staffed by The Bay Foundation (TBF) and Santa Monica Bay Restoration Commission (SMBRC) to implement the 2018 CCMP Action Plan via Annual Work Plan implementation. Both TBF staff and SMBRC staff contribute to the implementation of the Annual Work Plan and CCMP by carrying out their respective tasks and actions. The following section describes the entity affiliation(s) and key responsibilities of each staff member. Staff responsibilities subject to change based on periodic evaluations, organizational needs, professional development, and other considerations.

The Bay Foundation projected staffing as of 1 April 2023:

Title	Key Responsibilities
Chief Executive Officer	Facilitates the implementation of the CCMP and is responsible for the production of workplans and other documents to implement the CCMP. Oversees NEP budget and staffing supporting and implementing NEP activities. Serves as the director of SMBNEP and as the liaison to the USEPA for the SMBNEP. Leads and contributes to the design and implementation of projects, programs, partnerships, research, and communications to implement the actions and goals of the SMBNEP CCMP / CMP. Informs and develops strategies, policies, and priorities to support SMBNEP and the furtherance of SMBNEP's CCMP, the National NEP program, US EPA Region 9, and EPA Headquarters. Leads the diversification and enhancement of funding streams. Leads the strategic development of programs, partnerships, and projects; oversees and directs staffing with the Director of Programs; executes contracts, policies, and management practices; oversees audits; and develops, informs, and implements programs of CRI.
Director of Programs	Supports the implementation of the SMBNEP through collaborations and resource allocations. Oversees program development and financial sustainability supporting TBF's mission and SMBNEP. Oversees compliance of awards and contracts. Ensures and oversees effective operations and processes; manages resources effectively, including financial and human resources; evaluates and develops human resources and oversees and directs staffing with the CEO; oversees performance, compliance, and policies and procedures; evaluates and oversees impact and sustainability; and supports the strategic direction and implementation of programs supporting the CCMP.

Title	Key Responsibilities
BIL Project - Manager	Manages planning and implementation of Bipartisan Infrastructure Law projects. Oversees and supports production of engagement materials. Manages partners, reporting and outreach related to BIL projects. Manages BIL Equity Strategy. Contributes to EPA and SMBNEP reporting.
CMP Project - Manager	Manages projects that advance research and monitoring in support of CCMP / CMP. Authors technical and scientific documents. Supports the TAC, State of the Bay, Quality Assurance Project Plans (QAPPs); and other SMBNEP reporting needs. Manages the planning and implementation of CRI research. Develops new funding opportunities.
Environmental Engagement Program - Director	Develops mid and long-term planning of the Environmental Education Program. Develops and directs operations including communications and outreach of the organization and program activities. Directs and supports the authorship of technical documents, grant applications, and publications. Facilitates stakeholder meetings, training, and workshops. Oversees organization’s social media strategy and stakeholder engagement and communications. Supports research / CRI. Develops and coordinates partnerships. Contributes to EPA reporting. Develops new funding opportunities.
Environmental Engagement Program - Project Manager	Develops mid and long-term planning of the Environmental Engagement Program. Supports communications, outreach, research, and monitoring. Manages grants. Supports the authorship of technical documents, grant applications, and publications. Facilitates stakeholder meetings, training, and workshops. Supports operations, communications, and outreach of the organization. Supports research / CRI. Develops and coordinates partnerships. Contributes to EPA reporting. Develops new funding opportunities.
Environmental Engagement Program – Coordinator	Coordinates Environmental Engagement Program including communications, outreach, research, and monitoring activities. Supports data collection, quality control/assurance, and data analyses. Recruits and coordinates interns, students and/or volunteers. Supports authorship of technical documents, grant applications, community engagement, and publications. Supports research / CRI. Contributes to partnership development. Contributes to EPA reporting.

Title	Key Responsibilities
Coastal Adaptation Program - Director	Develops mid and long-term planning of the Coastal Adaptation Program. Develops and directs operations including restoration, monitoring, and research for program activities. Directs and supports the authorship of technical documents, grant applications, and publications. Supports operations, communications, and outreach of the organization. Supports research / CRI. Develops and coordinates partnerships. Contributes to EPA reporting. Develops new funding opportunities.
Coastal Adaptation Program – Coordinator	Coordinates Coastal Adaptation Program restoration, monitoring, and research activities. Supports Program Director with data collection, quality control/assurance, and data analyses. Recruits and coordinates interns, students and/or volunteers. Supports authorship of technical documents, grant applications, community engagement, and publications. Supports research / CRI. Contributes to partnership development. Contributes to EPA reporting.
Coastal Adaptation Program – Coordinator	Coordinates Coastal Adaptation Program restoration, monitoring, and research activities. Supports Program Director with data collection, quality control/assurance, and data analyses. Recruits and coordinates interns, students and/or volunteers. Supports authorship of technical documents, grant applications, community engagement, and publications. Supports research / CRI. Contributes to partnership development. Contributes to EPA reporting.
Coastal Adaptation Program – Technician	Conducts Coastal Adaptation Program restoration, monitoring and research activities. Supports Program Director with data collection, quality control/assurance, and data analyses. Supports research / CRI. Contributes to partnership development. Contributes to EPA reporting.
Coastal Adaptation Program – Technician	Conducts Coastal Adaptation Program restoration, monitoring and research activities. Supports Program Director with data collection, quality control/assurance, and data analyses. Supports research / CRI. Contributes to partnership development. Contributes to EPA reporting.

Title	Key Responsibilities
Ocean Resilience Program – Coordinator	Coordinates Ocean Resilience Program restoration, monitoring, and research activities. Supports Program Director with data collection, quality control/assurance, and data analyses. Recruits and coordinates interns, students and/or volunteers. Supports authorship of technical documents, grant applications, community engagement, and publications. Supports research / CRI. Contributes to partnership development. Contributes to EPA reporting.
Ocean Resilience Program – Coordinator	Coordinates Ocean Resilience Program restoration, monitoring and research activities. Supports Program Director with data collection, quality control/assurance, and data analyses. Recruits and coordinates interns, students and/or volunteers. Supports authorship of technical documents, grant applications, community engagement, and publications. Supports research / CRI. Contributes to partnership development. Contributes to EPA reporting.
Ocean Resilience Program – Technician	Conducts SCUBA based subtidal field work. Supports data entry, quality control/assurance, permit notifications, and reporting. Recruits and coordinates scientific diver volunteers. Maintains and enhances aquatic life support systems and performs daily husbandry tasks. Supports research / CRI. Contributes to partnership development. Contributes to EPA reporting.
Ocean Resilience Program – Technician	Conducts SCUBA based subtidal field work. Supports data entry, quality control/assurance, permit notifications, and reporting. Recruits and coordinates scientific diver volunteers. Maintains and enhances aquatic life support systems and performs daily husbandry tasks. Supports research / CRI. Contributes to partnership development. Contributes to EPA reporting.
Program and Administrative Assistant	Assists TBF and SMBNEP programmatically and administratively. Informs contracting and compliance. Maintains files and databases. Plans and coordinates administrative processes. Supports financial, program, and project tracking. Supports meetings and communications. Recruits and coordinates interns, students and/or volunteers to support program activities. Conducts field work and outreach.

Santa Monica Bay Restoration Commission staff as of 1 April 2023:

Title	Key Responsibilities
Administrative Director	Coordinate and execute meetings of the Governing Board, Executive Committee, Technical Advisory Committee, and Santa Monica Bay Stakeholders; perform administrative functions associated with SMBRC; oversee grant management of state bond-funded projects; support and collaborate on SMBNEP efforts; coordinate with TBF and SMBNEP partners on reporting, monitoring, and implementation of the CCMP; and coordinate with TBF on SMBNEP work plan development, implementation, and progress reporting.
Environmental Scientist	Support the Chief Administrative Director in preparing and executing SMBRC meetings and workshops; track and assist in scheduling presentations related to issues in Santa Monica Bay and its watersheds; conduct grant oversight and management for state bond-funded projects; coordinate with TBF on SMBNEP work plan development, implementation, and progress reporting; and update the SMBRC website with meeting materials and SMBNEP work plans and reports.