

SANTA MONICA BAY NATIONAL ESTUARY PROGRAM Fiscal Year 2023 Work Plan

1 October 2022 – 30 September 2023

January 2022 Draft Work Plan for 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
BEP	Boater Education Program
BRP	Santa Monica Bay Restoration Plan
BWER	Ballona Wetlands Ecological Reserve
CalTrans	California Department of Transportation
CCA	Coastal Conservation Association of California
CCMP	Comprehensive Conservation and Management Plan (formerly BRP)
CCVA	Climate Change Vulnerability Assessment
CDBW	California Department of Boating and Waterways
CDFW	California Department of Fish and Wildlife
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
CVA	Clean Vessel Act
CWMW	California Wetland Monitoring Workgroup
CWQMC	California Water Quality Monitoring Council
DMO	Del Mar Oceanographic
DDT	Dichlorodiphenyltrichloroethane
EWMP	Enhanced Watershed Management Plans
FMP	Fishery Management Plan
FOLD	Friends of the LAX Dunes
GB	Santa Monica Bay Restoration Commission Governing Board
GHG	Greenhouse Gases
GPRA	Government Performance and Results Act
HABs	Harmful Algal Blooms
HHW	Household Hazardous Waste
HSWRI	Hubbs Sea World Research Institute
JWPCP	Joint Water Pollution Control Plant (Carson)
LACDBH	Los Angeles County Department of Beaches and Harbors
LACDPH	Los Angeles County Department of Public Health
LACDPW	Los Angeles County Department of 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
MPA	Marine Protected Area

MRC	Mountains Recreation and Conservation Authority
MWD	Metropolitan Water District of Southern California
NEP	National Estuary Program
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
OPC	Ocean Protection Council
OREHP	Ocean Resource Enhancement Hatchery Program
OWDS	On-site Wastewater Disposal Systems
PCB	Polychlorinated biphenyls
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
SCC	California State Coastal Conservancy
SCCOOS	Southern California Ocean Observing Systems
SCCWRP	Southern California Coastal Water Research Project
SCMI	Southern California Marine Institute
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
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
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: Santa Monica Bay Restoration Commission (SMBRC) and The Bay Foundation (TBF). Each entity is briefly described below. More information on SMBNEP can be found at www.smbnep.org.

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). 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.

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.santamonicabay.org/). Serving as Host Entity for SMBNEP, TBF receives an annual federal grant from USEPA pursuant to section 320 of the Clean Water Act (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.

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.

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

Comprehensive Conservation and Management Plan and FY23 Work Plan

The original CCMP, or Bay Restoration Plan (BRP), of 1995 was updated in 2008 and again in 2013. SMBNEP recently completed a major CCMP revision in 2021, including a revised [Action Plan](#) in October 2018, a [Finance Plan](#) in December 2019, an amended [Memorandum of Understanding \(MOU\)](#) of SMBRC in June 2020, an [Introduction Chapter](#) in February 2021, and a [Comprehensive Monitoring Program](#) 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 \(MOA\)](#) 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 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.

This Fiscal Year 23 (FY23) Work Plan builds off the 2018 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 (FY23): 1 October 2022 – 30 September 2023, specifically to accomplish the goals and actions of the 2018 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 NEP funding guidance (October 2020) that the FY23 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 2018 CCMP Action Plan and the FY23 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), and indirectly, by supporting 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 2018 CCMP Action Plan and Work Plan directly (e.g., Actions #21, #30, and #31). Additional Actions support many other aspects of water availability and water

quality improvement. For example, Action #32 is specifically to reduce marine debris (i.e., special interest area 3). Additional actions further support this effort, 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). Additional actions indirectly support this objective, such as Actions #27 and #31.

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 Vulnerability Report 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 restoration activities that also support resilient systems include many Actions (e.g., Actions # 2, #4, #6-13). These Actions support resilience across 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 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 BRP, which included 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 those three priority areas. These three priority areas should be thought of as 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 goals were identified in the 2018 CCMP Action Plan and are listed below. All seven goals are priority focus areas in this FY23 Work Plan, through the implementation of actions and next steps identified in Section III, below, "[SMBNEP Planned Activities](#)". The goals are achieved through actions by many different entities, including public agencies and non-profit organizations that take the lead on specific projects.

Seven 2018 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 Draft FY 2022-2026 Strategic Plan (October 2021) 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 FY23 Work Plan and the CCMP serve several of USEPA's Goals, but SMBNEP work is focused on two, including Goal 1: Tackle the Climate Crisis (including Objective 1.2) and Goal 5: Ensure Clean and Safe Water for All Communities (including both Objectives 5.1 and 5.2). This Work Plan includes activities that will contribute to the FY18-22 USEPA Strategic Plan goals as well as the [Office of Water National Water Program Guidance \(FY20-21\)](#), and the FY 2021-2024 Clean Water Act §320 National Estuary Program Funding Guidance.

II. WORK PLAN OVERVIEW

Work Plan Structure

Section II of the Work Plan provides a brief discussion of the structure of the Work Plan and a summary of SMBNEP program accomplishments and key projects or programs. Section III provides details on the individual actions, next steps, objectives, deliverables, and environmental outcomes (results) for each next step and contains the bulk of the information contained in this Work Plan. Many of these actions or next steps have detailed implementation, monitoring, or permitting plans associated with them and summarizing them would make this document an unmanageable size. For additional details on individual projects, refer to [TBF's website](#). SMBNEP annual work plans, semi-annual reports, and annual reports are available on [SMBNEP's website](#). Section IV will depict the Work Plan budget, travel documentation, and staffing once finalized.

The Work Plan was developed from the 2018 CCMP Action Plan, workshops with the Governing Board, public input, and partner and staff input. The development of an annual work plan is a core function of a NEP. The annual federal Clean Water Act section §320 NEP grant is administered by USEPA and awarded to a 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 2018 CCMP Action Plan. The structure of the Work Plan is intended to mimic the structure of the 2018 CCMP Action Plan to facilitate ease of translation of progress towards implementing the 44 identified actions in the CCMP Action Plan.

There will also be focus and efforts in FY23 to implement programs that interconnect and integrate issues across traditional boundaries such as 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 in-depth discussion on issues important to the SMBNEP and of interest to stakeholders, such as scheduled information items during the Governing Board meetings and at separate workshops and forums. Although not identified or linked to actions contained in this Work Plan, specific topics for Governing Board meeting information items, workshops, or forums 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 is not tied to specific actions. Consistent with USEPA NEP funding guidance, this 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).

Work Plan Changes from FY22

The structural differences between the FY22 Work Plan and the FY23 Work Plan are relatively minor, as both documents crosswalk to the new structure of the 2018 CCMP Action Plan. Additionally, 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 FY22 Work Plan are identified in the main tables with an asterisk. This structure and format of the Work Plan document (beginning in FY20) reflects the goals of SMBNEP to increase clarity, reporting efficiency, readability, and succinctness of the Work Plan. Furthermore, these efforts are intended to increase consistency between the 2018 CCMP Action Plan and Work Plans, and consistency with USEPA funding guidance. If an action identified in the 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 FY23, 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 as part of the CCMP Action Plan. The FY23 Work Plan is the fourth implementation year of the 2018 CCMP Action Plan.

SMBNEP Program Accomplishments from Previous Fiscal Year (2021)

This section contains a synthesis of programmatic or environmental success stories from the past federal fiscal year (FY21), within the time period 1 October 2020 through 30 September 2021. This includes highlights from significant programs or projects and is categorically subdivided into '[programmatic updates](#)', '[wetlands, rivers, and streams](#)', '[beaches, dunes, and bluffs](#)', '[in the ocean](#)', '[integrated coastal projects](#)', '[climate change](#)', and '[our communities](#)'. For additional detail on project activities conducted by TBF, visit TBF's website: www.santamonicabay.org.

Beginning in December 2019, a novel coronavirus outbreak began in People's Republic of China (SARS-CoV-2), which caused a disease known as COVID-19. Over the subsequent months, the virus and its associated disease spread globally and turned into a worldwide pandemic. 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. 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

[Revised CCMP](#) – In February 2021, the SMBRC Governing Board approved the [Introduction Chapter of the CCMP](#), which connects all the components of the revised CCMP and provides background information on the NEP study area and the purpose, scope, and development of the CCMP. In April 2021, the SMBRC Governing Board also approved the revised [Comprehensive Monitoring Program \(CMP\)](#), a major revision led

by SMBRC’s Technical Advisory Committee and external expert scientists over approximately two years. The revised CMP includes new indicators, including indicators for assessing climate change vulnerability, and correspondingly new monitoring programs, new technologies, a synthesis of new research and monitoring objectives, directions for future studies, and a summary of data gaps. The SMBRC Governing Board’s approval of the Introduction Chapter and the CMP initiated USEPA’s review and consideration of concurrence of the full revised CCMP package. On 20 September 2021, USEPA concurred that the revised CCMP meets USEPA requirements and is considered final.

[Amended MOA](#) – On 19 August 2021, the SMBRC Governing Board unanimously approved an amendment to the Memorandum of Agreement (MOA) between SMBRC and TBF regarding SMBNEP. On 15 September 2021, the TBF Board of Directors approved the amended MOA. The amended MOA sets forth the agreement between SMBRC as the Management Conference and TBF as the Host Entity of the SMBNEP, and describes the roles, responsibilities, and collaborative relationship to further the goals of SMBNEP.

[SMBNEP Logo and Website](#) – In response to [USEPA’s 2019 SMBNEP Program Evaluation](#), the FY21 Work Plan included efforts to create a readily recognizable brand and better promote awareness of SMBNEP. Beginning in February 2021, TBF, SMBRC, and USEPA staff collaborated on the development of SMBNEP’s brand identity and the creation of a new logo and website. SMBNEP’s new 2021 logo captures the purpose and goals of the NEP, while honoring the watershed’s geographical, biological, and cultural diversity. The logo was finalized in May 2021 with the SMBRC Governing Board endorsing its use in June 2021. 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.

[SMBRC Prop. 50 Grant Program](#) – The Request for Proposals, which prioritized projects that fulfill monitoring needs identified in SMBNEP’s Comprehensive Monitoring Program, was released in July 2021. Eight proposals were submitted by the application deadline and determined to be eligible, requesting \$4,046,722 in grant funding. At its 14 December 2021 meeting, the Governing Board adopted Resolution No. 21-06 approving the list of projects recommended for grant funding. Commission staff forwarded the Recommended Project List and Standby Project List to the SWRCB’s Division of Financial Assistance for consideration of approval.

Wetlands, Rivers, and Streams

[Community-Based Restoration at Ballona Wetlands](#) – TBF, in partnership with California Department of Fish and Wildlife (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 for a total project area of 1.71 acres. Community events were halted starting in March 2020 as required by LA County Public Health due to COVID-19; however, events reconvened with COVID safety measures in place starting in August 2021. Ongoing communications occurred with the Coastal Commission and other partners, especially regarding restoration activities to correct the impacts from illegal driving and dumping activities on site. TBF along with partners, FBW, LACC, CDFW, Los Angeles Conservation Corps (LACC), and Edith Read & Associates, conducted non-native vegetation removal, seeding, planting of over 1,400 native plants, and installation of erosion control in November 2020. Ongoing scientific monitoring and maintenance continued in accordance with the Implementation and Monitoring Plan. Lastly, TBF released the [Year 5 Report](#) for the community restoration project in July 2020.

Ballona Wetlands Restoration Project – The California Department of Fish and Wildlife (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. More information, an FAQ, and links to all the project documents can be found on CDFW's project website: <https://wildlife.ca.gov/Regions/5/Ballona-EIR>.

Malibu Creek Ecosystem Restoration Project – In November 2020, the Army Corps signed the report for the Malibu Creek Ecosystem Restoration Project. The report, Final Environmental Impact Statement, and other documents are publicly available on the [Army Corps website](#). In December 2020, the Project was authorized as an ecosystem restoration project in the Federal Water Resources Development Act of 2020. Also, the State Legislature appropriated \$12.5 million for the project, which will be used to develop plans to 90% design. 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 indigenous populations of aquatic species within the next several decades, allowing for migratory opportunities to approximately 15 miles of aquatic habitat that have been unreachable for many decades in this watershed.

Stone Canyon Creek Restoration – TBF, UCLA, and the UCLA Lab School have worked together, alongside thousands of volunteers, to help restore a portion of one of the few remaining unburied creeks in the area. Serving as a 'living classroom' for both UCLA and the Lab School, this project is being scientifically monitored by UCLA and TBF for vegetation and wildlife, as well as periodic community maintenance. In FY21, UCLA's Environmental Sustainability Committee continued developing stewardship planning for this site for the next several years, continued monitoring, and started holding restoration events. Community events were halted in March 2020 as required by LA County Public Health due to COVID-19; they have since resumed.

Beaches, Dunes, and Bluffs

[LAX Dunes Restoration](#) – The LAX Dunes is 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 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 collection, vegetation surveys, seed bulking, and growing; project ornithologist, Cooper Ecological Monitoring performed an avian survey of the site; scientific consulting partner and restoration ecologists, Coastal Restoration Consultants, advised ongoing restoration, planning for future restoration activities, and revisions to the Ecological Landscape Plan; LACC conducted non-native vegetation removal; and IO Environmental and Infrastructure performed non-native vegetation removal herbicide application, and removal of remnant irrigation infrastructure. Public community events were halted starting in March 2020 as required by LA County Public Health due to COVID-19. TBF and LAWA planned and began having events again starting in fall 2021.

LMU's Coastal Research Institute and Dr. Michelle Lum's laboratory also continued work on identifying plant growth promoting bacteria of California native plants that can be used as an inoculum to enhance restoration efforts. Preliminary analysis showed a number of bacteria isolates are plant growth promoting bacteria and appear to enhance the germination and/or growth of native plant species. Dr. Lum and her research student implemented an experimental inoculated seed germination project at the LAX Dunes in December 2020 and monitored through summer 2021. Seeds of both species being evaluated had germinated beginning in March 2021, data analyses are ongoing.

[Santa Monica Beach Restoration Pilot Project](#) – This pilot project is restoring approximately three acres of sandy coastal habitat on the beach in the City of Santa Monica. The project is reestablishing native vegetation on the beach, while aiming to create a sustainable coastal strand and foredune habitat complex resilient to sea level rise and coastal erosion. In FY21, native dune vegetation and sand hummocks continued to establish, in some places over a meter in height. A Year 5 Annual Report summarizing data from all years of scientific monitoring is anticipated to be produced in winter 2021. Those data will also continue to be contributed to outreach informing coastal climate change resiliency planning. Following the expiration of the original Coastal Development Permit for the project in 2021, the City of Santa Monica has opted to pursue a permit amendment to establish the site as a permanent feature of the coastline. TBF is actively working with the City on the permit amendment application and associated adaptive management plan.

[Malibu Living Shoreline Project](#) – This project, in partnership with the City of Malibu, Los Angeles County Department of Beaches and Harbors (LACDBH), and State Coastal Conservancy (SCC) aims to restore over three acres of sandy beach and dune habitats at Zuma Beach and Point Dume Beach to improve coastal resiliency and increase the

health of the beach systems through a living shoreline approach. During FY21, work focused on continued outreach, completing permitting and baseline monitoring tasks, and initiating restoration activities. Specifically, both the final Coastal Development Permit (CDP) and a Right of Entry (ROE) permit were obtained in December 2020, and a supplemental project plan was drafted and included as part of the ROE permit application package. Project documents are publicly available on the [project webpage](#).

Project implementation, in partnership with the Los Angeles Conservation Corps (LACC), was conducted in December 2020 and continued through March 2021. Approximately 25 tons of invasive iceplant and other non-native vegetation were removed from the project area. The site was subsequently seeded and over 500 native plants were planted. In addition, sand fence segments and biomimicry stakes were installed to promote dune growth and symbolic post and rope fencing was established to delineate project boundaries. Project implementation was covered by multiple local news outlets. In addition, multiple virtual outreach events were conducted. TBF also continues to present at conferences and to other groups about this project. Post-restoration monitoring is ongoing. In a special research study by CRI, the biomimicry stakes were found to be effective at accreting sand, with some portions of plots showing over 30 cm of sand accretion across a four-month period. Supplemental planting / seeding and installation of interpretive signage is anticipated for Winter 2021-22.

[Manhattan Beach Dune Restoration](#) – This project aims to restore approximately three acres of foredune habitat along beaches in 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 in Manhattan Beach from approximately 36th Street to 23rd Street, 0.6 miles of coastline and is conducted in partnership with LACDBH and the City of Manhattan Beach. The restoration project will involve the removal of non-native vegetation, seeding/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.

Substantial progress was made during this reporting period including restoration planning; external coordination with partners, experts, and public stakeholders; conducting several planning and design meetings with partners and restoration design consultant (RIOS/CRC); completion of final design deliverables by RIOS, including a site plan, artistic perspective renderings, a bi-lingual primary interpretive sign design, and secondary signage design; completion of an innovative outreach video comprised of public comment on the project that was solicited through an interactive community engagement video forum; meetings and presentations with many local and regional stakeholder groups, including LA County Public Works, LA County Lifeguards, Manhattan Beach Botanic Society, and Manhattan Beach City Council; hosting several virtual public workshops to educate the local community and interested stakeholders on the project and to solicit public feedback; and additional outreach activities. The public stakeholder workshops were attended by interested individuals contributing feedback to restoration design elements. Widespread support for this project has been identified through the many avenues listed above, including the two public virtual stakeholder

meetings. TBF continues to present at conferences and to other groups about this project, and TBF continued consultation with a Native American representative who engages in the project as a cultural advisor. In addition, TBF obtained a ROE permit to conduct scientific monitoring on-site. TBF is coordinating with LACDBH to amend the ROE permit to include implementation and post-restoration activities. The project RMP was finalized in July 2021 and the final CDP application package, including the RMP, was submitted in August 2021. Ongoing coordination and communication with City of Manhattan Beach has occurred. Lastly, TBF began drafting two LA County Flood Control District Permit application packages for submission.

Beach Characterization Studies – In partnership with [Loyola Marymount University's Coastal Research Institute \(CRI\)](#), this research program is conducting a beach characterization study and informing a Site Suitability Model (SSM) to determine potential areas for beach restoration, evaluating factors such as coastal infrastructure, sea level rise vulnerability, and physical and biological characteristics, while contributing information to SMBNEP's Comprehensive Monitoring Program. This project serves to assess the potential threats faced by these beaches as well to determine which sites have the highest probability of being successfully restored with a high adaptive capacity.

During this reporting period, data from 16 beaches were compiled and analyzed, and work began on a draft manuscript using the data to broadly characterize the beaches of Santa Monica Bay. New data were acquired from public databases such as wind data from National Weather Service. Summary results from both projects were included at the American Shore and Beach Preservation Association National Summit in March, 2021 and in other virtual venues such as the winter Beach Ecology Coalition meeting in January 2021, the Society for Ecological Restoration conference, and the National Conference on Ecosystem Restoration. Lastly, a Proposition 50 grant application package was submitted in September 2021 to SMBRC to fill data gaps for the sandy shore chapter of the CMP.

In the Ocean

Kelp Forest Restoration – This project was developed to reverse the loss of kelp forests off the Palos Verdes Peninsula. The restoration is achieved by systematically reducing the density of sea urchins on the ocean floor to a target of two per square meter. TBF scientists partner with commercial fisherman to cull urchin densities as they are transformed from urchin barrens to kelp forests. This approach allows for the regrowth of kelp and increases diversity and biomass. From October 2020 through September 2021, 1.2 acres of kelp forest were restored, bringing the total for this project, started in 2013, to approximately 56.5 acres. Kelp forest response is validated through community analysis monitoring before, during, and after restoration activities. Additionally, the Year 8 Annual Report was completed.

Abalone Restoration – This project implements a multifaceted approach to research and method development to restore populations of abalone to Santa Monica Bay and adjacent coastal waters. TBF manages two abalone laboratories located at the Southern California Marine Institute (SCMI) to advance research on captive and wild

abalone care, spawning, and larval cultivation techniques. The primary focus of this work has been to support the recovery of the endangered white abalone. In February 2021, staff transferred 902 juvenile white abalone from the Moss Landing Marine Lab and in March 2021, 573 juvenile white abalone from The Cultured Abalone Farm to SCMI. These animals were outplanted during both the fall and spring 2021 outplants. In March 2021. In February 2021, over 11,000 juvenile white abalone less than 20 mm in length were transferred from the Bodega Marine Lab to southern California facilities, transported by two volunteer pilots coordinated through LightHawk. These abalone will be held and cared for in southern California partner facilities until they grow large enough to be outplanted.

Nearly 3,600 white abalone have been outplanted to the Palos Verdes peninsula since 2019. These were the first animals of their species to ever be outplanted into the wild. TBF staff and partners conducted quarterly surveys, monitoring live abalone and collecting shells to inform the success of outplanting efforts.

[Subtidal Eelgrass Restoration](#) – This innovative project, funded by State Coastal Conservancy (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. Baseline monitoring surveys of extant *Zostera pacifica* donor sites were conducted by project partners in October 2020 at East End and Palisades off Catalina Island, including deploying a physical oceanographic sensor tracking wave characterization. Additionally, to determine the size and extent of these donor beds, side-scan sonar mapping was conducted in April 2021. All necessary permits were acquired in July 2021 and eelgrass harvested from donor beds off Catalina Island was transplanted to three distinct transplant sites off Redondo Beach, Malaga Cove, and Dockweiler Beach. Two methods were utilized: one used a single turion placed into holes excavated by divers, and the second bundled 8-10 turions together. Post-transplant monitoring was conducted 24 hours and one month after transplant to inform survivability. Survivability varied from site to site and by method. Monitoring will continue at all sites on a quarterly schedule to evaluate success of transplant efforts.

Integrated Coastal Projects

[Los Angeles Living Shoreline Project \(LA-LSP\)](#) – This innovative project, including a diversity of partners and supporters, aims to implement a multi-habitat approach to restore approximately 3.5 acres of beach and coastal bluff habitat while increasing coastal resilience in a disadvantaged community. This project also includes an experimental project to establish offshore eelgrass within a one-acre footprint (see Subtidal Eelgrass Restoration above). LA-LSP is being funded by SCC and Honda Marine Science Foundation. In FY21, significant progress was made during this reporting period, including planning, coordination with experts and stakeholders, managing a subconsultant to conduct restoration design services (Integral Consulting, Inc.) and providing design feedback, permitting meetings, and community engagement activities. Final design deliverables were submitted by Integral in November 2020.

Significant collaboration occurred through communications with various agencies such as SCC, California Coastal Commission, LACDBH, LA County Public Works, City of Los Angeles, California Department of Parks and Recreation, LA County Lifeguards, US Fish and Wildlife Service, CDFW, US Environmental Protection Agency, and others. TBF continues to present at conferences and to other groups about this project (e.g., El Segundo Blue Butterfly Coalition, Society for Ecological Restoration conference).

For the beach and bluff components of the project, a ROE permit was obtained from LACDBH to conduct scientific monitoring on-site. The ROE permit is in the process of being amended to include implementation and post-restoration activities. In addition, the Restoration the Monitoring Plan (RMP) for the Beach and Bluff was finalized in June 2021 and the final Coastal Development Permit (CDP) application package, including the RMP, was submitted in July 2021. Ongoing coordination and communication with California Coastal Commission staff is occurring for this project, which is likely to be permitted in fall 2021. A State Parks Scientific Collection Permit application package was also submitted in September 2021. Implementation is anticipated for winter 2021-22.

Microplastics Research – Plastic is the most prevalent type of marine debris found in our oceans, and microplastics are considered an emerging constituent of concern due to their ubiquitous presence in the environment, danger to marine life when ingested, and potential to bioaccumulate chemicals up the food web. In FY21, CRI continued refining a protocol to extract microplastics from sediments, including infrared spectroscopy mapping, and continued a pilot study along Bay beaches. Another protocol was also developed to extract microplastics from nearshore marine invertebrates such as amphipods, sand crabs, and mussels. A partnership with University of California Santa Barbara to inform regional data gaps in the fate and transport conceptual model for microplastics in the nearshore environment was initiated. Sample processing was delayed beginning in March 2020 due to COVID-19 restrictions and LMU campus access restrictions but began again in December 2020.

Monitoring Harmful Algal Blooms – CRI and its Visiting Assistant Professor / Researcher, Dr. Amber Bratcher-Covino, continued Harmful Algal Bloom (HAB) studies to fill data gaps in the Santa Monica Bay region. Dr. Bratcher-Covino conducted three survey field days in October 2020, March 2021, and June 2021, including the collection and processing of ocean surface water samples from 19 stations throughout Santa Monica Bay and Ballona Creek. Her students completed a literature review and a synthesis of existing phytoplankton data for the region and presented at the CalCOFI conference in December 2020. Additional work on modeling OAH and HABs continues by SCCWRP, with efforts to expand the model. Dr. Bratcher-Covino also initiated and coordinated efforts to rent and use equipment to better facilitate algae speciation and quantification. A FlowCam microscope made by Yokogawa Fluid Imaging Technologies was delivered for use with multiple CRI and TBF staff and interns trained in its operation in April 2021. Samples were analyzed using this device by Dr. Bratcher-Covino and student interns through July 2021 and a database of species was produced. Further analyses are ongoing and Dr. Bratcher-Covino aims to submit a manuscript based on her research during the next reporting period.

Climate Change

[Climate Change Action Planning and CCMP Action Plan](#) – Climate change, including climate stressors for the region such as sea level rise and drought, continue to be important drivers for planning and adaptive management actions. In 2018, SMBNEP released the [2018 CCMP Action Plan](#), including actions related to climate change such as filling in important data gaps for our region, or prioritizing projects to increase resilience of our coastal areas, (such as kelp, beach, and dune restorations). The seven goals and 44 actions it contains represent priorities for our region, established through many workshops and consensus building activities. SMBNEP’s [Comprehensive Monitoring Program \(CMP\)](#) was completed in April 2021 and includes new indicators, such as assessing climate change vulnerability, and corresponding new monitoring programs, new technologies, a synthesis of new research and monitoring objectives, directions for future studies, and a summary of data gaps.

[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 the Sanitation District of Los Angeles County. Data collected by this project will improve our understanding of ocean acidification and hypoxia in the Santa Monica Bay. Since 2018, data were collected at a second location at a depth of 60 meters and showed less variability as compared to the first deployment year in 15 meters. These data allowed good characterization of the frequency, magnitude, and duration of OAH events in the nearshore surface and offshore bottom layers. In FY21, repair and testing of the OA sensor / Wirewalker mooring system continued, including the telemetry system and dissolved oxygen and pH sensors. Additionally, a publication, led by USEPA, was drafted, peer reviewed, and released in August 2021 titled [Integrating High-Resolution Coastal Acidification Monitoring Data Across Seven United States Estuaries](#).

Our Communities

[Proposition 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.

Three projects recommended by the Governing Board for Proposition 84 funding continued during this period. In 2020, two of the projects completed construction. 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.

During this reporting period, the project requested a one-year time extension to allow more time for post-construction monitoring.

The Ladera Park Water Quality Enhancement Project by the Los Angeles County Public Works 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 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. During this period, the project completed phase II and III of construction including installation of stormwater storage gallery and infiltration system, electrification, system testing, and landscaping.

Proposition 12 Grant Program – SMBRC staff continued to coordinate with SCC in overseeing implementation of six ongoing projects recommended by the Governing Board for Proposition 12 funding projects. In summary, one project was completed, two projects continued implementation, and three continued planning efforts. The Carbon Canyon Acquisition Project, which received \$350,000 in Prop. 12 funds, completed the acquisition in fee of 91 acres of undeveloped land outside of Malibu, permanently protecting open space and habitat in the Santa Monica Mountains, preserving wildlife corridors and the scenic viewshed, and increasing public access to recreation.

Abalone Cove Habitat Restoration Project continued implementation, including site preparation, removal of 13 acres of invasive plant species, irrigation maintenance, and trail improvement planning. The Community-Based Restoration at Ballona Wetlands Project also continued implementation (see additional details in the [Wetlands, Rivers, and Streams section](#)). The California Red-legged Frog (*Rana draytonii*) Reestablishment Project continued daytime surveys, which detected adult frogs and tadpoles in three of the four re-introduction sites, wild breeding, and minor habitat improvements.

The following three projects continued planning. [Topanga Lagoon Restoration Planning Project](#) continued phase 1 implementation, including holding a public workshop to receive stakeholder input on conceptual design alternatives; received funding for additional data needs, community engagement efforts, and environmental studies required under CEQA; and coordinated with TBF to deploy and manage a water quality sensor in the lagoon. The Beach Cities Multi-Benefit Green Streets Project experienced slight delays in holding public outreach events due to the COVID-19 pandemic. The grantee completed technical assessments, including the geotechnical assessment, topographic survey, preliminary hydrology and best management practices (BMP) sizing, and draft designs for each of the sites. Lastly, the Monteith Park and View Park Green Alley Stormwater Capture Project continued work to finalize project design.

Internship and Research Assistant Program – Through this program, TBF and CRI coordinate volunteers, students, and postgraduates in efforts to support implementation of the Comprehensive Monitoring Program and include research, habitat restoration, and scientific data collection efforts across many projects. While this program was

significantly affected by COVID-19 restrictions in Los Angeles County, including the ban of community volunteer events, TBF and CRI continued to make progress remotely and began in person engagement again in spring 2021. In summer 2021, sixteen students completed research projects under seven different faculty and staff across multiple research programs. Research was focused on beach characterization studies, modeling coastal climate stressors and adaptation strategies, native plant microbe interaction research, intertidal microplastics research, harmful algal bloom studies, marine invertebrate physiology, and habitat restoration and scientific monitoring. Each research direction aims to answer multiple research questions. Students created multiple presentations, posters, reports, and other products as part of the research efforts with an emphasis on beginning to synthesize program results into manuscripts.

[Boater Education Program](#) – This multi-faceted program engages the Southern California boating community to reduce and prevent boat-based ocean pollutants and encourage environmental stewardship. During this time period, the program developed and furthered [“The Changing Tide”](#) statewide newsletters, annual [Southern California Tide Calendars](#), [Pumpout Nav](#) app, the [Southern California Boater’s Guide](#), and a [“Consider a Marine Composting Toilet”](#) video. Over 2,600 California Boater Kits were produced and distributed to Southern California boaters and 90 Dockwalker volunteers were trained. This program also expanded its efforts to engage boaters and anglers on Marine Protected Areas (MPAs) by disseminating information on relevant resources and regulations. With funding from Coastal Quest and OPC, TBF implemented virtual presentations, #MPAMonday social media campaign, [“Fishing in California? Get Clear on MPAs”](#) video, [MPA Knowledge Review](#) quiz, and a [do-it-yourself guide](#) for fishing line recycling.

[Table-to-Farm](#) – The Table to Farm program works with Environmental Charter Schools’ (ECS) three campuses, Environmental Charter Middle School Inglewood, Environmental Charter Middle School Gardena, and Environmental Charter High School, to implement community composting. These three compost facilities serve the school, community, and local restaurants interested in recycling their organic food scraps. As of fall 2020, TBF’s Table to Farm program and ECS established a community garden just outside of Environmental Charter Middle School Inglewood’s campus. This garden utilizes compost to grow nourishing produce for the surrounding community. During this reporting period, garden planting and maintenance continued. Community garden outreach was implemented by installing garden bilingual signs, mass-mailing postcards, establishing monthly volunteer community days, and attending several school and community socially distanced events.

[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 conducted outreach to over 15 Los Angeles County yacht clubs with food service and solicited three as ReThink Disposable participants. ReThink

Disposable technical assistance is in process and results will be finalized in Fiscal Year 2022.

III. SMBNEP PLANNED ACTIVITIES

This section outlines each of the FY23 Work Plan actions and next steps to be undertaken during this fiscal year in a large summary table. It also highlights whether the project is new or ongoing, objectives, a description/milestone summary, partners, outputs/deliverables, long-term environmental results or outcomes, and the connection to the CWA Core Programs. Outputs or deliverables can be thought of as an activity or effort and/or associated work product(s) that are produced or provided over a specific period of time; outcomes can be thought of as long-term environmental changes or benefits resulting from such activities/efforts. Additional information about each action can be found in the 2018 CCMP Action Plan along with an associated narrative.

Many of the FY23 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 2018 CCMP Action Plan but are not currently identified as part of this Work Plan are included in the table with grey cells and with the text “(Not part of FY23 Work Plan)”. 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 FY22 Work Plan are identified in Appendix A.

The following table summarizes the primary work activities planned for FY23. 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 2018 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 FY23 (October 2022). Some actions will have additional deliverables as well (identified in the table). 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 FY23 Work Plan. The list of partners and lead entities is not exhaustive and may evolve over time.

Action #	CCMP Action	CCMP Next Step(s) / Project Activity Name*	Lead Entity(ies)	Partner(s)	Objective(s)	Description / Milestone Summary	Outputs / Deliverables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core**
1	Acquire open space for preservation of habitat and ecological services	Continued participation on resources agency Technical Advisory Committees	SMBRC	CNRA	To acquire and/or protect high priority properties that are at risk of development, or provide high diversity, include wildlife corridors, and/or provide socio-economic benefits	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	Publicly acquire new open space as it becomes available throughout the watershed to promote connectivity, preserve habitat, and sustain ecological services	5, 6, 7
		Bond funded acquisitions	SMMC, SCC, CNRA, Wildlife Conservation Board	SMBRC, MRCA, NPS, State Parks, MRT, Trust for Public Land, CDFW	To acquire and protect 91 acres of undeveloped land in Carbon Canyon to prevent development in a fire-prone area and expand recreational opportunities	Project Completed	(Not part of FY23 Work Plan)		

Action #	CCMP Action	CCMP Next Step(s) / Project Activity Name*	Lead Entity(ies)	Partner(s)	Objective(s)	Description / Milestone Summary	Outputs / Deliverables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core**
		Support partners in identification and prioritization of key acquisition or conservation easement properties	SMBRC	SMMC, MRCA, NPS, State Parks, RCDSMM, MRT, 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 to gather information on efforts to identify high priority parcels for acquisition / protection and assist / support in identifying funding sources	Update in NEPORT		
2	Restore kelp forests in the Bay to improve the extent and condition of the habitat	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	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 coordinate stakeholders	Annual Report (Kelp Project)	Restore 150 acres of kelp forest to improve habitat functions, local fisheries, and coastal resilience	6

Action #	CCMP Action	CCMP Next Step(s) / Project Activity Name*	Lead Entity(ies)	Partner(s)	Objective(s)	Description / Milestone Summary	Outputs / Deliverables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core**
					kelp forest/rocky reefs	through SeaTrees crowdfunding platform to implement kelp restoration; participate in monthly KELPRR calls			
		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	Annual Report (Kelp Project)		

Action #	CCMP Action	CCMP Next Step(s) / Project Activity Name*	Lead Entity(ies)	Partner(s)	Objective(s)	Description / Milestone Summary	Outputs / Deliverables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core**
		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	Update in semi-annual report		
		Conduct carbon sequestration assessment of kelp restoration project	TBF	CRI, other universities, SeaTrees	To assess carbon sequestration potential of kelp forest restoration	Conduct a literature review, develop research priorities, identify potential partners	Update in semi-annual report		
3	Recover abalone populations in the Santa Monica Bay and region to support rare species and	Establish abalone outplanting sites and conduct juvenile and	TBF	NOAA, NMFS, Cal Poly Pomona, SCMI, NFWF Bodega Marine Lab,	To reintroduce abalone, test effectiveness of outplanting methods, and assess habitat site suitability	Conduct habitat suitability surveys for outplant sites; implement one red abalone outplant event and one white	Update in semi-annual report	Establish 2-3 minimally viable green and red abalone populations (i.e., at least 2,000 abalone per hectare) in	6

Action #	CCMP Action	CCMP Next Step(s) / Project Activity Name*	Lead Entity(ies)	Partner(s)	Objective(s)	Description / Milestone Summary	Outputs / Deliverables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core**
	socioeconomic benefits to people	larval outplanting		SWFSC, PMRG, CDFW,		abalone outplant event in established restoration areas		the Bay; establish 1-2 viable white abalone populations (i.e., at 2,000 abalone per hectare) in the Bay	
		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)	Semi-Annual Project Reports (Abalone)		

Action #	CCMP Action	CCMP Next Step(s) / Project Activity Name*	Lead Entity(ies)	Partner(s)	Objective(s)	Description / Milestone Summary	Outputs / Deliverables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core**
		Captive spawn abalone	TBF	SCMI, NOAA, NMFS, Cal Poly Pomona, CDFW, Bodega Marine Lab Aquarium of the Pacific, Cabrillo Marine Aquarium, The Cultured Abalone Farm, MLML, LightHawk	To research captive spawning and larval culturing techniques, and raise abalone in aquaculture facility for outplanting	Condition broodstock abalone and support two captive spawning events	Semi-Annual Project Reports (Abalone)		
		Maintain aquaculture facility for abalone	TBF	SCMI, NOAA, NMFS, Cal Poly Pomona	To facilitate captive spawning and rearing of red and white abalone in support of future restoration activities for	Maintain and operate laboratory to house endangered white abalone and increase program wide capacity for	Update in semi-annual report		

Action #	CCMP Action	CCMP Next Step(s) / Project Activity Name*	Lead Entity(ies)	Partner(s)	Objective(s)	Description / Milestone Summary	Outputs / Deliverables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core**
					outplanting in the wild; to serve as central staging facility for southern California outplant efforts	culturing and rearing white abalone larvae and juveniles; conduct daily water quality testing and husbandry tasks			
4	Assess and restore seagrass habitats in the Santa Monica Bay and nearshore environments to benefit marine ecosystems and improve coastal resilience	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	Update in semi-annual report	Restore 2-5 acres of seagrasses to the Bay to improve habitat functions and coastal resilience	6
	TBF	SCC, CRI, NOAA, CDFW, PMRG, others	To improve understanding and probability of success for offshore eelgrass restoration	Evaluate success of eelgrass transplant to three sites in SMB	Update in semi-annual report				

Action #	CCMP Action	CCMP Next Step(s) / Project Activity Name*	Lead Entity(ies)	Partner(s)	Objective(s)	Description / Milestone Summary	Outputs / Deliverables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core**
		Santa Monica Bay			using transplant methods				
		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	Update in semi-annual report		
		Evaluate restoration potential of seagrasses in the Bay, harbor, wetlands, and nearshore environments	TBF	NOAA, CRI, UCLA	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	Update in semi-annual report		

Action #	CCMP Action	CCMP Next Step(s) / Project Activity Name*	Lead Entity(ies)	Partner(s)	Objective(s)	Description / Milestone Summary	Outputs / Deliverables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core**
						transplant sites and existing eelgrass beds, develop site suitability criteria			
		Contribute to better understanding of <i>Ruppia maritima</i> habitat requirements and functions	TBF	CRI, UCLA, NOAA	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)		
5	Assess and implement offshore artificial reefs to benefit marine ecosystems and provide socioeconomic benefits to people	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	Monitor the biological community response of the artificial rocky reef restoration project off Bunker Point (previously funded by Prop. 12)	Update in semi-annual report	Implement artificial reef projects to achieve 42 new acres of rocky reef habitat of a similar condition as reference reef habitats	6
		Annual monitoring with the use of side	VRG	PV MSRP, NOAA,	To assess nearshore coastal marine	Support Vantuna in development of baseline	Update in semi-annual report		

Action #	CCMP Action	CCMP Next Step(s) / Project Activity Name*	Lead Entity(ies)	Partner(s)	Objective(s)	Description / Milestone Summary	Outputs / Deliverables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core**
		scan sonar and SCUBA based surveys		TBF, CRI, CSULB	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	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	Assemble related research and initiate assessment of this approach to coastal engineering	Update in semi-annual report		

Action #	CCMP Action	CCMP Next Step(s) / Project Activity Name*	Lead Entity(ies)	Partner(s)	Objective(s)	Description / Milestone Summary	Outputs / Deliverables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core**
					concrete for construction				
6	Restore coastal strand and foredune habitat to beaches and sandy shores to improve coastal resilience	Continue long-term monitoring of the Santa Monica Beach Restoration Pilot Project	TBF	CRI, 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 explore the potential for a second nearby site; begin drafting a manuscript	Update in semi-annual report	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	6
		Conduct Phase 1 (outreach and planning) and Phase 2 (implementation) of the Malibu Living	TBF	City of Malibu, LACDBH, SCC, CRI	To restore three acres of beach and dune habitat to improve coastal resilience and ecosystem benefits and	Conduct post-restoration monitoring, site maintenance, and outreach; continue coordinating with partners and	Annual Report (MLSP)		

Action #	CCMP Action	CCMP Next Step(s) / Project Activity Name*	Lead Entity(ies)	Partner(s)	Objective(s)	Description / Milestone Summary	Outputs / Deliverables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core**
		Shoreline Project			improve public engagement	exploring opportunities for project site expansion			
		Find funding for and implement another beach and bluff restoration project	TBF	LACDBH, City of LA, SCC, City of Manhattan Beach, CRI, 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;	Update in semi-annual report; completed permits; annual reports		

Action #	CCMP Action	CCMP Next Step(s) / Project Activity Name*	Lead Entity(ies)	Partner(s)	Objective(s)	Description / Milestone Summary	Outputs / Deliverables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core**
						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	Update in semi-annual report		

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7	Restore and maintain the entire LAX Dunes system to support native plants, wildlife, and rare species	Conduct community restoration events in the northern 48-acre dune area	TBF	LAWA, FOLD, SCC, CCC, CRI	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; explore research opportunities	Annual Report (LAX Dunes)	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	N / A
		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	Annual Report (LAX Dunes)		

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		Engage underserved students and volunteers and inland communities	TBF	LAWA, SCC, LACC, CRI	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	Annual Report (LAX Dunes)		
		Initiate planning for areas within the adjacent dunes, including baseline monitoring	TBF	LAWA, LACC, California Botanic Garden, Psomas, CRC, IOEI, CRI, CDFW, USFWS, WCS,	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	Annual Report (LAX Dunes)		

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				Cooper Ecological Monitoring					
8	Restore coastal bluff habitats in the Bay watershed to support ecosystem services	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	Update in semi-annual report	Restore 5 acres of bluff habitats in the SMB watersheds to support ecosystem services	N / A
		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	Update in semi-annual report		

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						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	Update in semi-annual report		
		Initiate Pt. 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	Complete construction of the stair replacement led by State Parks and initiate phase II, including restoration of native plant	Update in semi-annual report		

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						species impacted by the project			
9	Implement Malibu Creek Ecosystem Restoration Project (Rindge Dam and other barrier removals) to support ecosystem restoration	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, 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	Pending Notice of Determination and Record of Decision by Army Corps, develop removal plans to 90% design	Update in semi-annual report	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	5, 6, 7
		Support lead agencies in identifying and obtaining funding for the project	State Parks, Army Corps	TBF, RCDSMM, CDFW, others	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)		
10	Remove additional barriers to support fish	Identify, prioritize, and acquire funding for barrier	RCDSMM, State Parks, NPS	CDFW, many	To engage with partner entities to identify potential	Opportunistically attend meetings and engage in conversations to	Update in semi-annual report	Remove fish barriers to support endangered	2, 5, 6

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	migration and ecosystem services	removal projects			opportunities for fish barrier removal	advance project prioritization and funding		steelhead trout habitat expansion, increase resilience related to climate change, and provide ecosystem services	
		Implement priority barrier removal projects	RCDSMM, State Parks, NPS	CDFW, many	To implement priority barrier removal projects in the Santa Monica Bay watershed	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)		
11	Restore urban streams, including daylighting culverted streams, removing cement channels, and restoring riparian habitats	Identify additional urban streams for restoration and prioritize	State Parks, NPS	Municipalities, USC Sea Grant, others	To engage with partner entities to identify potential opportunities for urban stream restoration	Opportunistically attend meetings and engage in conversations to advance project prioritization and funding	(Not part of FY23 Work Plan)	Restore at least two priority stream areas as defined by guiding documents such as the Ballona Creek Greenway Plan	2, 4, 5, 6
		Implement urban stream restoration projects	Municipalities	many	To implement urban stream restoration projects	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)		
12	Restore smaller coastal lagoons and other wetland types to increase	Finalize restoration planning and permitting for Topanga Lagoon	State Parks	SCC, RCDSMM, CalTrans, LACBH, CDFW	To create a restored habitat that integrates fish passage barrier removal, wetland habitat	Continue working on restoration design alternatives, incorporating	Update in semi-annual report	Restore and increase wetland and transition habitat acreages for	2, 5, 6

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	wetland habitat area and condition throughout the watershed	restoration project and initiate project			restoration, visitor services, and recreational opportunities at Topanga Lagoon, funded by Prop. 12	stakeholder and TAC input, and work towards CEQA permitting and documentation		small lagoons such as Topanga Lagoon and other wetland systems to improve ecological functions	
Complete land acquisition, feasibility analyses, and restoration design in coordination with bridge redevelopment for Trancas Lagoon		RCDSMM	CalTrans, Army Corps, CDFW	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	Update in semi-annual report			
Conduct comprehensive monitoring of small lagoons in northern Bay to inform CMP and seek funding to continue		TBF	Moss Landing Marine Labs, SCCWRP, CRI, State Parks, RCDSMM	To conduct comprehensive monitoring of the northern Bay lagoons, inform the Comprehensive Monitoring Program (wetlands	Implement Prop 50 wetland monitoring program led by SCCWRP (if approved) to fill CMP data gaps for small lagoons; consolidate	Update in semi-annual report			

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		Malibu Lagoon monitoring			chapter), and acquire funding to continue long-term monitoring and data collection at Malibu Lagoon	existing data for northern lagoon systems; collect new data to fill identified gaps			
		Assess restoration options and priorities for other wetland types (e.g., freshwater systems)	City of Redondo Beach, municipalities	SCC, CNRA, CDFW, LA County, others	To complete acquisition and planning to restore wetlands associated with the AES Power Plant redevelopment in Redondo Beach	Support restoration planning of the wetland habitat on former AES property in Redondo Beach by informing the SMBRC Governing Board and membership	(Not part of FY23 Work Plan)		
13	Restore Ballona Wetlands Ecological Reserve to enhance wetland habitats and benefits to	Support the lead agencies by contributing technical information to the Final Environmental Impact Statement and	CDFW	Army Corps, TBF, LACFCD, SCC	To support the lead agencies in completing permitting and a federal environmental review document	Continue to provide technical support and communication with the lead agencies to restore Ballona Wetlands	Update in semi-annual report	Restore 577-acre Ballona Wetlands Ecological Reserve to improve wetland, transition, and upland habitats,	2, 5, 6, 7

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	people	Report and permitting						functions, and services; Create public access trails and bike paths and encourage recreation and stewardship at the Ballona Wetlands Ecological Reserve	
		Continue community engagement and hand-restoration within the Reserve with FBW	TBF	CDFW, Friends of Ballona Wetlands, Edith Reed and Associate, CRI, 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)	Annual Report (Community Restoration Project)		

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		Support lead agencies to identify and obtain restoration funding	CDFW	SCC, Army Corps, 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	Update in semi-annual report		
14	Implement wildlife crossings and other innovative projects for benefits to wildlife and people	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	To implement Phase 2 of the Liberty Canyon Wildlife Crossing Project (Final/ 100% Design) 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	Update in semi-annual report	Complete construction and implementation of two major freeway wildlife crossing projects to benefit wildlife, genetic diversity, and people	N / A
Support lead agencies in permitting and environmental review of Liberty Canyon Wildlife		CalTrans, MRCA	RCDSMM, Assm. Bloom, SCC, SMMC,	To complete implementation of the Liberty Canyon Wildlife Crossing Project in support of wildlife	Continue final design and engineering plans and initiate construction	Update in semi-annual report			

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		Crossing project		NWF, CDFW	movement and safety and enhanced habitats				
		Identify additional locations for wildlife crossings	CalTrans, NPS	CDFW, many	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)		
15	Implement projects that improve understanding and/or enhance endangered and threatened species populations (e.g., habitat improvements for Western Snowy Plover, genetic banking)	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	Support efforts by the lead entity to find funding and implement this study	Update in semi-annual report	Improved extent and condition of habitats for rare species throughout the Bay and its watershed	2, 5, 6
		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	Update in semi-annual report		

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		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	Update in semi-annual report		
16	Support the implementation of activities and projects such as those in Enhanced Watershed Management Plans (EWMPs) and activities identified in the TMDL	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 Safe	Continue to oversee implementation of capital projects for storm water pollution reduction through multi-benefit solutions (also see Action 17); inform and support the	Update in semi-annual report; project final reports	Assist in achieving constituent percentage load reduction targets for waterbodies in the Santa Monica Bay according to TMDL compliance	1, 2, 4, 5, 6, 7

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	implementation schedule to help achieve TMDL goals for 303d listed waterbodies in the Bay and its watershed				Clean Water Program	Stormwater Strategy efforts led by the SWRCB		timeline	
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 activities of the Greater Los Angeles County IRWRP Leadership Committee	Update in semi-annual report			
Facilitate other sources of State funding		SCC, SWRCB	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	Outreach and support project applications by municipalities where appropriate, and keep the SMBRC Governing Board and membership	Update in semi-annual report			

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					WMPs in the watershed	informed of progress			
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	Complete rain garden metal fate study with CRI	TBF	CRI	To assess the fate of sequestered or retained heavy metals in the Culver City Rain Garden	Complete the Master’s thesis and a publication for the rain garden metal fate study in partnership with CRI	Completed Thesis; completed manuscript	Assist in achieving constituent percentage load reduction targets for waterbodies in the Santa Monica Bay according to TMDL compliance timeline	2, 4, 5, 6, 7
		Complete additional LID projects throughout the watershed	Municipalities	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 work with grantees to implement three of the previously funded Prop. 84 projects: Culver Boulevard Urban Stormwater Project and Westwood Neighborhood Greenway Project; work with grantees to continue to implement two Prop. 12	Update in semi-annual report		

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						projects: Monteith Park and View Park Green Alley Stormwater Capture Project and Beach Cities Multi-Benefit Green Streets Project			
		Promote adoption of local ordinances to require projects in public right-of-way to mitigate stormwater	Municipalities	LACDPW, Tree-People, many	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)		
		Seek funding and partnerships to conduct a cost-benefit analysis of LID projects	TBF	CRI, other universities	To continue to inform regional assessments of LID projects and water quality benefits	Seek funding and/or partnerships to conduct the analysis	Update in semi-annual report		

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18	Support installation and monitoring of additional sewage and bilge pumpout facilities in Southern California harbors	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 phase one of statewide sewage volume study with SFEP	Annual Report	Meet 86-100% annual average usability percentage (based on analysis of equipment performance) for all publicly funded sewage pumpout stations throughout Southern California	4
		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 need for additional sewage pumpouts and dump stations	Update in semi-annual report		
		Support installation of bilge pumpouts in Marina del	TBF	marina operators	To support installation of bilge pumpouts	Conduct outreach and distribute information regarding need for additional	Update in semi-annual report		

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		Rey or King Harbor				pollution prevention resources			
		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 need for additional pollution prevention resources	Update in semi-annual report		
19	Support minimization of biological impacts of water intake and discharge from coastal power generation and desalination facilities, including public engagement and education	Educate and increase public support of the state-wide desalination requirements	SWRCB	LARWQCB	To support efforts by state regulatory agencies to achieve full implementation of the state-wide desalination requirements in the California Ocean Plan and Once-Through Cooling Policy including education on the benefit of	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	Achieve no impacts from seawater intake of desalination facilities, including brine disposal, and ultimately no seawater intake	6, 7

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					increasing sources of local water supplies				
		Support development of alternative and advanced mitigation measures to minimize seawater intake by desalination	SWRCB	LARWQCB	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)		
20	Support elimination of non-point pollution from onsite wastewater treatment systems	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	Update in semi-annual report	Achieve level of performance and water quality protection set by state policy for all OWDS in the Santa Monica Bay watershed	4, 5, 6, 7

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		Continue the coordinated OWTS identification, permitting, and inspection system between the LARWQCB and the cities and counties in the watershed	LARWQCB	Watershed 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	Update in semi-annual report		
21	Support policies that promote reuse, recycling, and advanced wastewater treatment to	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,	Update in semi-annual report	Help reduce dependence of the Los Angeles region on imported water and lower the percentage of	4, 6, 7

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	reduce reliance on imported water sources					and the general public on the progress made by JWPCP of LACSD in expansion of wastewater recycling; Continue testing at the Advanced Purification Center demonstration facility and continue environmental studies required under CEQA		imported water use by water agencies; work towards meeting the State’s goals for recycled water in the Recycled Water Policy	
		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	Update in semi-annual report		

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		Support recycled wastewater efforts by Tapia Water Reclamation Facility and others through expansion of distribution system and regional partnerships	LVMWD, SCCWRP, UCLA, City of Santa Monica	LACFCD, US Bureau of Reclamation, LV-Triunfo JPA, SMBRC, many	To support expansion of recycled wastewater distribution and reuse	progress of Hyperion's Recycled Water Program Continue construction of the Santa Monica Advanced Water Treatment Facility	Update in semi-annual report		
22	Support policies and implement projects that divert landfill waste and encourage composting to improve water quality and lower	Support continuation of Table to Farm compost hubs	Schools	TBF, Environmental Charter Schools, Social Justice Learning Institute, Restaurants, LA Compost,	To reduce food waste being sent to landfills, compost food waste, and apply compost to urban gardens to grow food	Support existing Table to Farm compost hubs and Environmental Charter Middle School Inglewood community garden; continue Environmental	Update in semi-annual report	Establish 10 local community-based compost hubs and divert food waste from 20 food service establishments; distribute compost among community	4, 6

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	greenhouse gas emissions			LA Food Waste Prevention & Rescue Working Group		Charter Schools community engagement on compost and food equity; support partners in strengthening and developing Los Angeles' community compost projects		support agriculture, gardens, and restoration projects	
		Support expansion, outreach and implementation for residential and commercial organics collection and recycling	Municipalities	TBF, CalRecycle, LA Food Waste Prevention & Rescue Working Group, LACDPW	To support greenhouse gas reduction by way of residential and commercial organics recycling implementation by city and state regulatory agencies	Continue to participate in LA Food Policy Council Food Waste Prevention Working Group; Support efforts of partners and municipalities on the implementation of organics recycling to meet California's Short-Lived Climate	Update in semi-annual report		

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						Pollutants Law targets			
23	Facilitate development and adoption of natural stream and riparian protection policies, including restoration	Complete and adopt LA City stream protection policy	City of LA	Heal the Bay, Surfrider, TBF	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	Assist a minimum of one municipality in the watershed in the adoption of a stream protection policy	1, 2, 5
		Inform other regional ordinances	Municipalities	CDFW, many	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)		
24	Support the inclusion of coastal resilience through natural means and softscape measures into local coastal plan updates	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	Update in semi-annual report	Inclusion of climate change adaptation measures in at least half of the 12 local coastal jurisdictions general plans (or equivalent) amendments	7

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		Opportunisticaly 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	Update in semi-annual report		
		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; implement the CRI and UCSB beach research studies	Update in semi-annual report		

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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	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	Update in semi-annual report	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	N / A
		Support creation of increased public transit to and from beaches to enable access	City of Santa Monica, Municipalities	CCC, SCC, CDFW, others	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)		
		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,	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,	Update in semi-annual report		

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				CDFW, USC Sea Grant, Cal Sea Grant, Heal the Bay		Beach Ecology Coalition, State Parks, and USFWS to implement and provide recommendations for best management practices along beaches			
26	Participate in research, education, outreach, and policy on invasive species removal and control	Conduct New Zealand Mudsnail surveys	SMBRC	TBF	To track the spread of NZMS in the Santa Monica Mountains and develop management recommendations for control	Conduct NZMS survey in Santa Monica Mountains and submit report	(Not part of FY23 Work Plan)	Reduce impact of invasive species in critical habitats throughout the Bay and its watershed as measured by the Comprehensive Monitoring Program	5, 6, 7
Attend and participate in Invasive Species Council of California (ISCC) and regional		SMBRC	CDFW	Increase public and agency awareness of invasive species issues	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)			

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		meetings focused on management of invasive species							
		Conduct additional studies and outreach efforts to control impacts of, manage, or reduce the sale of invasive species	SMBRC	TBF, CRI, CDFW, CalIPC, USFWS, Heal the Bay, others	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)		
27	Produce educational resources and materials and conduct outreach to improve best management practices for Southern California boaters (e.g., fuel, sewage,	Produce educational materials	TBF	CCC, CDBW, SFEP	To produce educational materials to increase awareness of boating best management practices to boaters	Produce and distribute Changing Tide newsletters, Southern California Tide Calendar, Boater Kits, and interactive Clean Boater Questionnaire; continue to promote and	Newsletters; tide calendar booklets	Increase understanding and adoption of sustainable boating habits to reduce boating related pollutants entering waterways (e.g., boat sewage, used oil, antifreeze, bilge	4

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	and hazardous waste management)					distribute informational videos (Y-Valves, Marine Composting Toilets, and Marine Protected Areas), and Southern California Boater’s Guide; promote awareness of MPAs amongst boaters and foster a norm of compliance with corresponding laws (relates to Action 39)		water, batteries, copper, trash, and aquatic invasive species)	
		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;	CBSM pilot report		

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						report on Community Based Social Marketing (CBSM) pilot that informs proper boat sewage disposal behavior change outreach strategies			
		Manage Pumpout Nav app	SFEP	CDBW, TBF	Increase proper disposal of boater sewage	Contribute to and support app development and maintenance	Update in semi-annual report		
		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	Conduct a literature review	Update in semi-annual report		

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		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 1,000 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	Update in semi-annual report		
		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 and do-it-yourself monofilament recycling instructions	Update in semi-annual report		
28	Support efforts of disadvantaged communities to achieve	Support WMPs and EWMPs to prioritize projects that	SMBRC, LACDPW	Municipalities, agencies, Our Water LA	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	Help disadvantaged communities to achieve healthy habitats through	4, 6, 7

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	healthy habitats, implement green infrastructure, and reduce pollution	produce multi-benefits		Coalition, Heal the Bay, others				restoration and pollution reduction projects	
Utilize the Ballona Creek Greenway Plan to identify parcels in disadvantaged communities for implementation		Baldwin Hills Conserv.	City of Culver City, City of LA	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)			
Support IRWMP and similar programs to preferentially invest in disadvantaged communities		SMBRC, LACDPW	LA County, other watershed cities	Support green infrastructure projects for IRWMP and Safe Clean Water Program funding in disadvantaged communities	Support and facilitate efforts to identify and develop green infrastructure projects for IRWMP and Safe Clean Water Program funding in disadvantaged communities through participation and communications	Update in semi-annual report			

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		Support research efforts to quantify multi-benefits of green spaces to communities	SMBRC, LACDPW	LA County, other watershed cities, CRI	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)		
29	Reduce health risks of swimming in contaminated waters and consuming contaminated seafoods through more comprehensive source control and, advanced monitoring and public notification	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	Update in semi-annual report	Achieve no elevated health risks associated with swimming and seafood consumption through source control, monitoring, and public notification	4, 6

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						reporting systems; Continue to update and maintain Heal the Bay's NowCast system and publish the Beach and River Report Cards for the public			
		Update fish contamination advisory and associated public education materials based on new data	OEHHA	State DPH, LAC-DPH	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)		
		Maintain and enhance the existing seafood contamination education and	EPA Superfund	FCEC partners, Heal the Bay, US EPA	Support and facilitate the continuation and enhancement of the existing seafood contamination education and	Continue to participate in the Fish Contamination Education Collaborative	Update in semi-annual report		

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		enforcement program			enforcement program				
		Develop NowCast for freshwater systems to inform recreation (e.g., swimming holes)	Heal the Bay	LACDPH	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)		
30	Conduct community engagement, education, and inform policies related to water conservation and reuse to reduce water demand and reliance on imported sources	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	Update in semi-annual report	Help reduce dependence of the Los Angeles region on imported water and lower the percentage of imported water use by water agencies	6

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		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	Update in semi-annual report		
		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	Update in semi-annual report		
		Develop funding to support the expansion of best management	TBF, municipalities	businesses, TreePeople, LAUSD	To reduce pollution from businesses through implementation of best	Apply for funding to support the expansion of best management practices to	Update in semi-annual report		

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		practices to incorporate other business sectors			management practices	incorporate other business sectors			
31	Achieve water quality benefits by businesses through community engagement and implementation of best management practices	Research contaminants, environmental laws, sustainability, pollution prevention standards, and BMPs for commercial businesses such as nurseries, landscapers, restaurants, and horse stables	TBF	CRI, universities, SCCWRP, others	To assess contaminants and pollution prevention impact from commercial businesses	Conduct a literature review to develop research priorities and identify potential partners	Update in semi-annual report	Achieve Clean Bay Certified adoption by 100% of Bay watershed cities; develop and distribute BMP materials to food service establishments and marine fuel docks	4, 6
		Distribute restaurant engagement tools	TBF	Municipalities	To reduce pollution from restaurants	Support Clean Bay Certified restaurant program; advance pollution prevention best	Update in semi-annual report		

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						management practices such as ReThink Disposable project (see Action 32)			
		Develop funding to support the expansion of best management practices to incorporate other business sectors	TBF	Municipalities, businesses	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)		
32	Reduce marine debris by supporting bans on single-use items, conducting outreach, and participating in trash reduction	Find funding for and continue ReThink Disposable LA	TBF	Clean Water Action/ Clean Water Fund, food service establishments	To contribute to source reduction of single-use disposable items from food service establishments	Acquire funding to continue ReThink Disposable work in LA	Update in semi-annual report	Implement ban on single use disposable plastics in Los Angeles County and 100% of cities throughout watershed;	4

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	programs	Support municipality bans of polystyrene, non-recyclable plastics, and single use items	Reusable LA, City of Santa Monica, LA County Chief Sustainability Office, LACDPW, other municipalities	TBF, Surfrider Foundation, Heal the Bay, 5 Gyres, Algalita, OPC, NOAA, USEPA, 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 waste source reduction	Update in semi-annual report	engage 30 food service establishments as ReThink Disposable participants	
33	Monitor microplastics (including microfibers) and other marine debris in the Bay and coastal environments to inform management actions	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	Final Microplastics Method Report or manuscript	Use microplastics data analyses and identified trends to inform source reduction management strategies in the Bay	4
Publish a manuscript on the results of the Bay studies		CRI	TBF	To assist in characterizing microplastics in the Bay and nearshore environment	Complete a final report or manuscript on the microplastics research program	Final Microplastics Method Report or manuscript			

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					and disseminate results				
		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	Final Microplastics Method Report or manuscript		
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	Conduct more studies to assess the effects of emerging contaminants on riparian and marine ecosystems and human health	SCCWRP	TBF, CRI, universities, LARWQCB, Physicians for Social Responsibility, Water Foundation, RCDSMM, State Parks	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	Reduce impacts of emerging contaminants on key habitats in the Bay and its watersheds	4
		Improve analytical methodology	SCCWRP	Physicians for Social Responsibility	To improve availability, sensitivity, and	Support expanding list of contaminants	Update in semi-annual report		

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		and standardize monitoring of more emerging contaminants		ty, Water Foundation	repeatability of analytical methods for emerging contaminants to improve data quality for monitoring emerging contaminants in aquatic ecosystems	monitored and monitoring reports and description of lab methods to analyze emerging contaminants			
		Enhance and expand existing educational programs and enforcement efforts to reduce the use and dispersal of emerging contaminants	Municipalities, many	SCCWRP, LARWQCB, Physicians for Social Responsibility, Water Foundation	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)		
35	Monitor and inform management actions for Harmful Algal	Continue to support research and monitoring efforts for	SCCWRP, UCLA, UCSC, SCCOOS	CRI, JPL/NASA	To support research and monitoring efforts that fill data gaps in our	Explore emerging technologies like remote sensing and DNA	Completed CRI HAB Report or Manuscript	Reduce prevalence of HABs in the Bay and its waterbodies as	4, 5, 6, 7

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	Blooms (HABs)	HABs, especially in context of climate change and CMP implementation			region for HAB occurrences, frequencies, causes, and impacts, especially in the context of climate change	technology to better understand and fill data gaps related to HABs, complete plankton HAB sampling study led by CRI		measured by the Comprehensive Monitoring Program	
		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	Real time data available on SCCOOS website		
		Improve public outreach and education on HABs	NGOs, coastal municipalities, others	CDFW, many	To improve public understanding of harmful algal	Present results of fire / HAB study and CRI study to	Update in semi-annual report		

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					blooms, causes, and impacts	interested groups			
36	Monitor chemical, physical, and biological characteristics in the Bay to inform climate change impacts such as ocean acidification	Implement the Kelp Forest Hydrodynamic Study	UC Davis	TBF, CSU Northridge, UCLA IoES	To assess sediment transport, alteration of advective currents, and wave attenuation within kelp forests	Manage manuscript submittal and review	Completed manuscript	Development and implementation of adaptation strategy addressing impacts of ocean acidification in the Bay	6, 7
		Support OA sensor array maintenance, calibration, and data downloads in accordance with SOP	LACSD	SMBRC, LARWQCB, SCCWRP, TBF, DMO	To continue using high-frequency, high-resolution OA sensors to characterize OAH conditions in Santa Monica Bay	Continue deployment of the OA sensors in collaboration with LACSD wire-walker mooring special study to accurately collect real-time data at high-resolution, both temporally and vertically through the water column, and	Update in semi-annual report		

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						characterize OAH levels and variability in the upper 100m of the water column			
		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	Completed State of the Bay Report; revised QAPP(s)		
		* Convene technical advisors to prioritize actions based on information from CMP	SMBRC, TAC, universities, others	TAC, TBF, SCCWRP, others	Implement projects approved for Prop. 50 grant funding that prioritize monitoring and data collection needs based on	Execute grant agreements for projects approved for Prop. 50 funding and work with grantees to oversee project implementation	Update in semi-annual report		

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					the revised CMP for major habitats in the Bay	(also see Action 40)			
37	Increase understanding of deep water habitats such as submarine canyons, deep reefs, and outfall pipes	Conduct ROV surveys to collect physical, chemical, and visual data	TBF, CRI	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	Update in semi-annual report	Enhance functions and conditions of deep marine environments (e.g., deep reefs) in the Bay	6
		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,	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;	Update in semi-annual report		

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				UCLA, others		explore nearshore bathymetry survey opportunities with UAV			
38	Monitor and improve understanding of rocky intertidal habitats to inform restoration actions	Support study recommendations and outreach efforts for improved protection	UCLA	CRI, MARINE	To improve understanding of rocky intertidal habitats to fill CMP data gaps and inform restoration activities	Continue to support Point Fermin rocky intertidal study; explore marine invertebrate physiological response to climate stressors	Update in semi-annual report	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	6
		Develop mitigation measures for rocky intertidal habitats, including restoration and enhancement of physical structure	UCLA	CRI, MARINE, CDFW, USFWS	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)		

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39	Monitor and inform effective management of Marine Protected Areas, Fishery Management Plans, and local fisheries for recreational and commercially important species	Support MDRA in their implementation of the youth and veteran fishing program	MDRA	TBF, LACDBH	To provide disadvantaged youth and veterans the opportunity to experience nature, boating, fishing, and healthy lifestyles	Support MDRA by soliciting volunteers for boat trips as needed in support of their plan for 25 trips next year	Update in semi-annual report	Inform agency enforcement plans and long-term adaptive management of MPAs, assist with fishery related public health advisories	6
		Support MDRA in the completion of a halibut FMP	CDFW	OREHP, HSWRI, MDRA, CCA	To provide technical and outreach support to MDRA in participating and tracking the development of a halibut FMP by CDFW and promotion of sustainable fisheries	Support MDRA in their efforts by reviewing project documents, providing technical support, attending meetings, and tracking progress; MDRA to release halibut into SM Bay	Update in semi-annual report		
		Continue opportunistic aerial surveys to track boating	LightHawk	TBF	To continue to track ocean vessels and fishing trends within the South	Initiating communications and planning to restart survey flights	Update in semi-annual report		

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		and vessel activity			Coast MPA Network				
		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	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	Update in semi-annual report		
40	Research and inform best management and pollution reduction practices to	Identify partners and identify funding sources for long-term monitoring	City of Santa Monica, many	LA County, municipalities, LACDPW, Our Water LA Coalition	To establish project partners and identify potential funding sources in support of long-	Continue to work with project partners, agencies, and stakeholders to develop MOUs	Update in semi-annual report	Assist in achieving constituent percentage load reduction targets for	4

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	address non-point source pollution and facilitate reduction	efforts for LID and water conservation efforts			term monitoring for LID and water conservation efforts	or other agreements with partners		waterbodies in the Santa Monica Bay according to TMDL compliance timeline	
		Implement monitoring programs for long-term monitoring and to inform effectiveness of LID/BMP implementation projects	many	TAC, CRI, municipalities, LACDPW, 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 Safe Clean Water Program; explore research opportunities or supplemental monitoring	Update in semi-annual report		
41	Facilitate research, monitoring, and assessments	Conduct or support monitoring and technical	SWRCB, LARWQB,	Watershed cities, others	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	Assist in achieving constituent percentage load	4

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	that inform more accurate waste load allocations and development of new water, sediment, and biological objectives	studies to characterize pollutant loading, impacts and effectiveness of pollutant control measures	SCCWRP, UCLA					reduction targets for waterbodies in the Bay according to TMDL compliance timeline	
		Conduct or support data collection for water quality objective development	SWRCB, LARWQC B	SCCWRP	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)		
42	Inform strategies to reduce greenhouse gas emissions and increase carbon sequestration in support of existing state	Research landfill diversion's reduction on greenhouse gas emissions and carbon sequestration due to compost application	TBF, many	CRI, many	To conduct research on landfill diversion to obtain quantifiable GHG reduction metrics	Collaborate with partners and CRI to conduct research and produce a literature review	Update in semi-annual reports	Implement and support carbon sequestration/cycle monitoring, research, and quantification as part of projects to inform or prioritize efforts	N / A

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	actions and policies	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	Update in semi-annual reports		
		Identify projects or programs that will prioritize carbon sequestration and resilience	many	Municipalities, CDFW, many	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)		
		Explore innovative concepts like sinking whale carcasses as potential	LAC Lifeguards	many	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)	(Not part of FY23 Work Plan)		

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		opportunities for carbon sinks							
43	Implement the County-wide Safe Clean Water Program to support stormwater pollution control projects (if approved by voters in 2018)	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	Support the efforts of municipalities and organizations to utilize funds made available under the Safe Clean Water Program for stormwater improvement and LID projects that provide nature-based and multi-benefit solutions throughout the watershed	Update in semi-annual report	Assist in achieving constituent percentage load reduction targets for waterbodies in the Santa Monica Bay according to TMDL compliance timeline	4, 6, 7

Action #	CCMP Action	CCMP Next Step(s) / Project Activity Name*	Lead Entity(ies)	Partner(s)	Objective(s)	Description / Milestone Summary	Outputs / Deliverables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core**
					disadvantaged communities, and coordination of efforts across the County				
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	Convene meetings to initiate program development and identify opportunities	TBF, others	LACDPW, Army Corps, CCC, municipalities	To facilitate communications and inform opportunities to advance sediment management in Los Angeles County	Develop meeting schedule(s) and agenda(s) to further constructive communications	(Not part of FY23 Work Plan)	Complete and implement a comprehensive regional sediment management plan to restore natural functions where possible and mitigate impacts of climate change	6, 7
		Develop plans and/or update existing plans to promote sediment transport and deposition along the coast based on hydro-dynamic modeling and analyses	TBF, others	USGS, CRI, USC Sea Grant, State Parks, CCC, SCC, CDFW	To protect public and private infrastructure and ecosystem services by increasing the Los Angeles County coastline's resilience to sea	Gather and conduct a review of applicable studies and plans to identify opportunities and strategies to actuate regional sediment management	(Not part of FY23 Work Plan)		

Action #	CCMP Action	CCMP Next Step(s) / Project Activity Name*	Lead Entity(ies)	Partner(s)	Objective(s)	Description / Milestone Summary	Outputs / Deliverables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core**
					level rise and coastal flooding				
		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	Update in semi-annual report		

BUDGET, TRAVEL, STAFF

These sections will be included in a future draft of the Work Plan.

Appendix A. Table of Completed Projects in FY22

Project Name	Objective	Brief Project Description	Lead	Partners	Major Accomplishments	Key Deliverables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core
Ladera Park Water Quality Enhancement Project (funded by Prop. 84)	To complete more LID projects throughout the watershed to improve flood protection and water quality, and provide additional benefits	The project received \$3,211,222 in Prop. 84 grant funds and aimed to treat, store, and infiltrate runoff from a 110-acre tributary area through a combination of pre-treatment, retention, and infiltration facilities.	LACDPW, SWRCB	SMBRC, LACFCD	Constructed LID stormwater management system to capture, treat, store, and infiltrate or use dry- and wet-weather flows from existing storm drain and gutter to reduce pollutant loads in Centinela Creek and Ballona Creek, reduce potable water use, and increase groundwater recharge; and installed demonstration garden with native and drought tolerant plants and educational signage to inform the community on project benefits.	Update in semi-annual report	Assist in achieving constituent percentage load reduction targets for waterbodies in the Santa Monica Bay according to TMDL compliance timeline	2, 4, 5, 6, 7

Project Name	Objective	Brief Project Description	Lead	Partners	Major Accomplishments	Key Deliverables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core
Culver Boulevard Urban Stormwater Project (funded by Prop. 84)	To complete more LID projects throughout the watershed to improve flood protection and water quality, and provide additional benefits	The project received \$3,300,000 in Prop. 84 grant funds and consists of capturing and treating dry-weather runoff and storm runoff from a drainage area of 800 acres for local irrigation and using a belowground infiltration basin to recharge groundwater.	City of Culver City, SWRCB	SMBRC	Constructed stormwater management system and bioswales, including infiltration galleries for groundwater recharge and retention basins to treat and reuse captured urban run-off to irrigate the local landscaping along the raised median. The project also included drywells to address surface run-off from Culver Blvd.	Update in semi-annual report	Assist in achieving constituent percentage load reduction targets for waterbodies in the Santa Monica Bay according to TMDL compliance timeline	2, 4, 5, 6, 7