

**SANTA MONICA BAY
NATIONAL ESTUARY PROGRAM
Fiscal Year 2022 Work Plan**

1 October 2021 – 30 September 2022

15 April 2021

Final Work Plan Approved by SMBNEP Management Conference

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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

MRCA	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, and more information on the roles and relationship between the entities can be found at the following webpage: http://www.smbrc.ca.gov/about_us/orientation/.

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.santamonibay.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.

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

CRI engages educators, academics, graduate students, undergraduate students, agencies, industry, and more in research related to coastal resource management.

Comprehensive Conservation and Management Plan and FY22 Work Plan

The original CCMP, or Bay Restoration Plan (BRP), of 1995 was updated in 2008 and again in 2013. SMBNEP is currently undergoing a major CCMP revision, completing a revised [Action Plan](#) in October 2018, a [Finance Plan](#) in December 2019, an [amended Memorandum of Understanding \(MOU\) of SMBRC](#) in June 2020, and the [Introduction Chapter](#) in February 2021 (all key components of the CCMP). 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 current revision to the CCMP still requires the completion of the revised CMP.

This Fiscal Year 22 (FY22) 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 (FY22): 1 October 2021 – 30 September 2022, 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 that the FY22 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 FY22 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 disasters. 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 FY22 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

The FY22 Work Plan and the CCMP serve USEPA's Goal 1: Core Mission – deliver real results to provide Americans with clean air, land, and water. [USEPA's FY 2018-2022 Strategic Plan](#) defines a course for the agency and is organized around three key goals, including: refocusing the USEPA back to its core mission, cooperative federalism, and adhering to process and rule of law. 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-FY 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 also available on [SMBRC's website](#).

Section IV depicts the Work Plan budget and travel documentation. 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 FY22 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 FY21

The structural differences between the FY21 Work Plan and the FY22 Work Plan are relatively minor, as both documents cross-walk 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 FY21 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, and 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 FY22, 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 FY22 Work Plan is the third implementation year of the 2018 CCMP Action Plan.

SMBNEP Program Accomplishments from Previous Fiscal Year (2020)

This section contains a synthesis of programmatic or environmental success stories from the past federal fiscal year (FY20), within the time period 1 October 2019 through 30 September 2020. This includes highlights from significant programs or projects and is categorically subdivided into '[wetlands, rivers, and streams](#)', '[beaches, dunes, and bluffs](#)', '[in the ocean](#)', '[integrated coastal projects](#)', '[climate change](#)', '[our communities](#)', and '[governance](#)'. 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 Wuhan, 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 issued a "stay-at-home" order with specific restrictions on all activities. 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 for when local public health officials deem it safe to resume outdoor community events; however, the restrictions impacted several projects for SMBNEP.

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 1.55 acres. Community events were halted in March 2020 as required by LA County Public Health due to COVID-19, although TBF staff and their partners continued restoration efforts through frequent site maintenance days. TBF also continued revegetation planning and coordination for Year 5, (which began implementation in fall 2020 by planting over 1,200 native container stock plants and distributing native plant seeds). Lastly, TBF released the [Year 4 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. 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 – On 19 August 2020, the Corps released the proposed Report of the Chief of Engineers, the report of the District Commander, and a Final Environmental Impact Statement (FEIS), regarding ecosystem restoration for Malibu Creek, in Los Angeles and Ventura Counties. The FEIS was prepared in accordance with Section 102(2)(C) of the National Environmental Policy Act of 1969 (Public Law 91-190). The documents are publicly available on the [Army Corps website](#). The lead agencies for the Malibu Creek Ecosystem Restoration Project are the US Army Corps of Engineers (federal) and the California Department of Parks and Recreation (state). 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 about 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 FY20, 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.

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, restoration planning, and scientific monitoring of the LAX Dunes. Lead botanist project partner, California Botanic Garden, conducted seed collection and vegetation surveys; project ornithologist, Cooper Ecological Monitoring performed several avian surveys, including a targeted burrowing owl survey; and

scientific consulting partner and restoration ecologists, Coastal Restoration Consultants, advised on planning for future restoration activities and drafting the Ecological Landscape Plan. In March 2020, TBF halted public community events as required by LA County Public Health due to COVID-19.

[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 FY20, native dune vegetation and sand hummocks continued to establish, in some places up to a meter in height. A [Year 4 Annual Report](#) was produced in September incorporating data from ongoing monitoring. Those data also contributed to outreach informing coastal climate change resiliency planning. TBF and partners had several earned media for this project during FY20, and completed a scientific publication highlighting the project in the national *Shore and Beach* journal: “Planning to adaptation: Informing regional nature-based adaptation to improve coastal resiliency in Santa Monica Bay.” Additionally, TBF supported City of Santa Monica in their efforts to include nature-based adaptation in their climate planning.

[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 FY20, final permit applications and supporting documents were submitted to City of Malibu, baseline monitoring and project outreach were conducted, and planning for implementation was ongoing and will be conducted in winter 2020/21. Permitting documents were submitted to the City of Malibu on 10 June 2020, including the following documents: 1) MLSP CDP Application, 2) MLSP Implementation and Monitoring Plan, and 3) MLSP Site Characterization Report. Additionally, multiple virtual outreach events were conducted with members of the community and project partners and intensive baseline monitoring continued.

[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. The project is supported 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.

Significant progress was made during this reporting period including restoration planning; external coordination with partners, experts, and public stakeholders; conducting a public open call (Request for Proposals), and subsequently hiring a

consultant to conduct restoration design services; coordinating and implementing site visits; comprehensive baseline monitoring across multiple field days; permitting meetings and coordination; hiring a consultant to assist acquiring innovative video public comment on the restoration project; and additional community engagement activities. Additionally, TBF released an innovative community engagement tool – an interactive outreach video soliciting project feedback and input, including a brief three-question survey. The video was live for over two months to receive public feedback on the project and was available in English and Spanish. TBF is also in consultation with a Native American representative who is engaged in the project as a cultural advisor.

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 the SMBNEP 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 11 beaches were compiled and analyzed, and preliminary meetings with SSM partners, LACDBH and State Parks, occurred in summer 2020. Summary results from both projects were presented at the American Shore and Beach Preservation Association National Conference in October (one oral presentation and four poster presentations), and in other virtual venues such as Los Angeles Regional Climate Collaborative meetings. Work continued on evaluating and combining GIS layers for the site suitability analysis and discussions with coastal municipalities will serve to inform its future use. The model will eventually be analyzed against the ongoing *in situ* data collection along beaches of the SM Bay as part of this research program.

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 2019 through September 2020, 3.5 acres of kelp forest were restored, bringing the total for this project, started in 2013, to approximately 55.5 acres. Kelp forest response is validated through community analysis monitoring before, during, and after restoration activities. Additionally, the [Year 7 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 June 2020, over 5,000 juvenile white abalone were transferred from the Bodega Marine Lab to SCMI, facilitated by two volunteer pilots coordinated through LightHawk. Abalone were held and cared for in TBF's facility. Nearly 2,000 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.

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. LA-LSP is being funded by SCC and Honda Marine Science Foundation. In FY20, partnerships and planning continued, and baseline beach and bluff surveys were initiated in partnership with CRI. Integral Consulting was hired to complete restoration conceptual design, perspective renderings of the project, and interpretive signs. Outreach and planning were both ongoing, culminating in an agency planning meeting in July 2020 that included over 30 state and federal agency representatives as well as local government. Eelgrass beds offshore of Malibu and Catalina Island were identified as potential donor beds. These beds were surveyed to assist in permitting and performance evaluation of future restoration projects. In addition, eelgrass blades were collected by TBF and Paua Marine Research Group for a population level genetics study led by CRI faculty, Dr. Demian Willette. Lastly, a pressure sensor was deployed to help establish criteria for site selection for eelgrass in Santa Monica Bay.

[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 FY20, CRI continued refining a protocol to extract microplastics from sediments, including infrared spectroscopy mapping, and continued a pilot study along Bay beaches. A new protocol was also initiated 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.

[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 continued planning for future fieldwork including beach water quality sample collection to process for phytoplankton as well as ocean samples. Her students conducted a literature review

and a synthesis of existing phytoplankton data for the region over the summer. Additional work on modeling OAH and HABs continues by SCCWRP, with efforts to expand the model. Sampling sites and a schedule for sampling cruises were established for Santa Monica Bay for late 2020-2021.

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.

[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 FY20, a manuscript was drafted in partnership with USEPA and several other sister National Estuary Programs.

[Kelp Forest Hydrodynamics](#) – This cooperative project is designed to inform how kelp forests influence current patterns, wave velocity, and sediment transport off the coast of the Palos Verdes Peninsula. Additional funding was awarded to California State University Northridge and University of California Davis from University of Southern California Sea Grant to continue this study on two more kelp forest sites. In 2019, two sites were established off Palos Verdes and instruments were deployed. Results from this study were presented to many stakeholder groups on the north coast of California and contributed to two manuscripts in 2020. A third manuscript is in preparation focused on exploring drivers and potentials of alongshore current velocity reduction by giant kelp. Additional ocean chemistry data collection associated with this project was halted due to COVID-19 and will resume when possible.

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. Four projects recommended by the Governing Board for Proposition 84 funding were implemented during this period. In 2020, two of the projects completed construction. The Santa Monica Bay Catch Basin Insert Project by the City of Rancho Palos Verdes installed 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. The [Westwood Neighborhood Greenway Project](#) by the City of Los Angeles constructed 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.

Two of the projects continued construction during 2020. The Ladera Park Water Quality Enhancement Project by the Los Angeles County Public Works, which aims to treat, store, and infiltrate runoff from a 110-acre tributary area through a combination of pre-treatment, retention, and infiltration, completed drywell installation and commenced aboveground construction during this period. 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 continued Phase II of construction with anticipated completion of the final phase of construction in October 2021.

Proposition 12 Grant Program – SMBRC staff continued to coordinate with SCC in overseeing implementation of 10 projects recommended by the Governing Board for Proposition 12 funding projects. In summary, two projects were completed, two projects continued implementation, two continued planning efforts, three continued grant finalization processes, and one project was cancelled due to wildfire impacts.

The Palos Verdes Reef Restoration Project completed construction and initiated monitoring of an artificial reef in September 2020 to restore rocky reef habitat near Bunker Point off the Palos Verdes Peninsula, which involved strategically placing 57,000 tons of quarry rock in a 42-acre area.

The Pure Water Project by the Las-Virgenes-Triunfo Water District also completed construction and held a virtual grand opening of a 100 gallon-per-minute, indirect potable water reuse demonstration facility for reservoir augmentation, which aims to produce up to six million gallons of local, drought resistant water supply per day while improving in-stream habitat.

Abalone Cove Habitat Restoration Project continued implementation, including site preparation, removal of invasive plant species, irrigation installation, and planting native plants. The Community-Based Restoration at Ballona Wetlands Project also continued implementation (see additional details in the [Wetlands, Rivers, and Streams section](#)).

The following three projects continued planning: Topanga Lagoon Restoration Planning Project collected input from over 100 public stakeholders, while a technical advisory committee supported the development and evaluation of three conceptual design alternatives. The Beach Cities Multi-Benefit Green Streets Project issued a Notice to Proceed for implementation of green infrastructure technologies and hired a consultant to begin the design process.

The Carbon Canyon Acquisition Project and the California Red-legged Frog (*Rana draytonii*) Reestablishment Project finalized their respective grant agreements. The Monteith Park and View Park Green Alley Stormwater Capture Project continued work to finalize the grant agreement. The proposed Paramount Ranch Stormflow and Sediment Reduction Project was canceled due to Woolsey Fire impacts. The Proposition 12 funds dedicated to this project were reallocated, from the Paramount Ranch Project to the Topanga Lagoon Restoration Planning Project and the Palos Verdes Reef Restoration Project.

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. Specifically, nine students completed research projects under four different faculty in summer 2020 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, and habitat restoration and scientific monitoring. Each research direction aims to answer multiple research questions. Students created multiple presentations, posters, and other products as part of the research efforts.

Boater Education Program – This is a multi-faceted program designed to engage the Southern California boating community to reduce and eliminate boating-related ocean pollution and encourage environmental stewardship. In 2020, the program continued to distribute “[The Changing Tide](#)” statewide newsletters, annual Southern California Tide Calendars, and [Pumpout Nav](#) app, the popular [Southern California Boater’s Guide](#). . The program also produced and distributed 2,979 Boater Kits and virtually trained 91 Dockwalker volunteers. Through the [Honey Pot Day](#) program, mobile sewage pumpouts are offered; during this reporting period, 84 boaters participated and 1,696 gallons of sewage were properly disposed of. In May 2020, the Boater Education Program received a grant from the Ocean Protection Council and Coastal Quest to create Marine Protected Area (MPA) educational materials for the recreational boating community, these materials include one educational video, Southern California Tide Calendars with a MPA map and resource pages (available in English and Spanish), an updated California Boater Kit reference card that incorporates MPA information, an educational interactive quiz, and the integration of MPA education into The Changing Tide newsletter.

Table-to-Farm Composting – The Table to Farm Composting for Clean Air project, initiated in 2016, is a collaborative network of schools, students, food service establishments, local non-profit organizations, and the community at large working to create local solutions to reduce air pollution and greenhouse gas emissions, while increasing local food production in underserved communities. This project connects food service establishments with local compost hubs for diversion of pre-consumer food waste from the landfill. Nutrient rich compost is then used in gardens that grow fresh

local produce for the community. Compost hubs are located at Environmental Charter Schools' three campuses to teach students about food equity, air pollution, carbon sequestration, food waste, composting, and gardening. In 2020, a community garden comprised of three raised garden beds and two in-ground beds was established outside of Environmental Charter Middle School Inglewood's (ECMS-I) gates. This garden is available to all community members. During this reporting period, 436 ECMS-I students and community members learned about the garden and 72 individuals gave input on garden design and implementation.

Governance

On June 18, 2020, the SMBRC Governing Board unanimously approved major amendments to the [MOU of SMBRC](#), which delineates the authority, governance, and membership of the Commission. The amended MOU was informed by extensive input from members of the SMBRC and public. The new MOU made significant improvements to the governance structure of the SMBRC by clarifying the authority and relationships among components of the SMBRC, clarifying the SMBRC's role in the SMBNEP, enhancing mechanisms for broader and more effective stakeholder participation, streamlining processes, and improving operational efficacy of the SMBRC.

III. SMBNEP PLANNED ACTIVITIES

This section outlines each of the FY22 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 FY22 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 identified as part of this current Work Plan are not included in the table. 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 FY21 Work Plan are identified in Appendix A.

The following table summarizes the primary work activities planned for FY22. 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 FY22 (October 2021). 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 FY22 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	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 existing list or list under development that identify high priority parcels for acquisition / protection and assist / support in identifying funding sources	Update in NEPORT	Publicly acquire new open space as it becomes available throughout the watershed to promote connectivity, preserve habitat, and sustain ecological services	5, 6, 7
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,	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	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	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**
				Marauder Robotics, OPC	management of kelp forest/rocky reefs	coordinate stakeholders through SeaTrees crowdfunding platform to implement kelp restoration; participate in monthly KELPRR calls; participate on bull kelp working group			
		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)		

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		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	Establish abalone outplanting sites and conduct juvenile and	TBF	NOAA, NMFS, Cal Poly Pomona, SCMI, NFWF Bodega Marine	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	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**
	species and socioeconomic benefits to people	larval outplanting		Lab, SWFSC, PMRG, CDFW,		abalone outplant event in established restoration areas		per hectare) in 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)		

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		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 conduct 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	Maintain and operate laboratory to house endangered white abalone and increase	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**
					activities for outplanting in the wild; to serve as central staging facility for southern California outplant efforts	program wide capacity for 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	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 (patches) 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

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**
	and improve coastal resilience	Develop restoration methods for eelgrass (<i>Zostera pacifica</i>) in the Santa Monica Bay	TBF	SCC, CRI, NOAA, CDFW, PMRG, others	To improve understanding and probability of success for offshore eelgrass restoration using transplant methods	Transplant eelgrass to three sites in SMB using methods identified in the Implementation and Monitoring Plan	Semi-Annual Project Reports (eelgrass)		
		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	Use information gathered as part of other next steps in this action to implement and monitor eelgrass transplant to three sites within SMB	Semi-Annual Project Reports (eelgrass)		
		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	Support CRI in a genetic population research study of eelgrass (<i>Z. pacifica</i> targeted) in the region and within transplant sites using	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**
						microsatellite genotyping; conduct wave attenuation studies to determine effect of eelgrass restoration; develop site suitability criteria			
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 69 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 funded by Prop. 12	Update in semi-annual report	Implement artificial reef projects to achieve 69 new acres of rocky reef habitat of a similar condition as reference reef habitats	6
		Annual monitoring with the use of side scan sonar and SCUBA based surveys	VRG	PV MSRP, NOAA, TBF, CRI, CSULB	To assess nearshore coastal marine habitats using side-scan sonar and SCUBA to inform data gaps in the CMP and future	Support Vantuna in development of baseline monitoring plan to inform restoration activities; bi-monthly data	Update in semi-annual report		

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					restoration projects; to understand the movements, positions, and permanence of great white sharks, giant sea bass, and other species of interest in SMB	download and maintenance of acoustic telemetry receivers by CSULB			
		Preliminary work regarding the benefits of dynamic revetments and nearshore reefs	VRG	TBF, CRI, others	To preliminarily advance work towards understanding dynamic revetments and nearshore reefs, including feasibility of using recycled concrete for construction	Assemble related research and initiate assessment of this approach to coastal engineering	Update in semi-annual report		
6	Restore coastal strand and foredune habitat to beaches and sandy shores	Continue long-term monitoring of the Santa Monica Beach	TBF	CRI, City of Santa Monica, State	To continue long-term monitoring to inform coastal resilience, ecosystem benefits, and	Conduct physical and biological surveys at the frequency described in the Implementation	Update in semi-annual report	Restore 10 acres of coastal strand and dune habitat along Santa Monica Bay beaches to	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**
	to improve coastal resilience	Restoration Pilot Project		Parks, Audubon	adaptive management of the restoration area	and Monitoring Plan and produce an annual report		improve ecological function, increase coastal resilience, and provide habitat for rare species	
		Conduct Phase 1 (outreach and planning) and Phase 2 (implementation) of the Malibu Living Shoreline Project	TBF	City of Malibu, LACDBH, SCC, CRI	To restore three acres of beach and dune habitat to improve coastal resilience and ecosystem benefits and improve public engagement	Continue partnership development and outreach; conduct post-restoration monitoring and site maintenance; continue coordinating with partners and exploring opportunities for project site expansion	Annual Report (MLSP)		
		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,	To restore 3.5 acres of bluff, beach, and eelgrass habitat as part of a living shoreline pilot project (Los Angeles Living	Continue partnership development and stakeholder coordination for LA Living Shoreline Project and Manhattan	Update in semi-annual report; completed permits; annual reports		

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				CDFW, USFWS, Audubon, USC Sea Grant	Shoreline Project); restore dune habitats in Manhattan Beach through iceplant removal and revegetation with native plants	Beach Dune Restoration Project; contract Los Angeles Conservation Corps for implementation; conduct post-restoration monitoring and site maintenance			
		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	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	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)		
		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	Enhance volunteer program to increase recruitment of underserved students and volunteers from	Annual Report (LAX Dunes)		

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**
					hand-on stewardship and restoration at the LAX Dunes	inland communities through amplified outreach, capacity building, and partner development			
		Initiate planning for areas within the adjacent dunes, including baseline monitoring	TBF	LAWA, LACC, California Botanic Garden, Psomas, CRC, IOEI, CRI, CDFW, USFWS, WCS, Cooper Ecological Monitoring	To conduct baseline monitoring and develop recommendations for habitat management	Continue monitoring of adjacent 52-acre dune area to develop baseline data and restoration recommendations	Annual Report (LAX Dunes)		

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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 sources for bluff restoration (see also Action 6)	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**
		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	Initiate the project led by State Parks	Update in semi-annual report		
9	Implement Malibu Creek Ecosystem Restoration Project (Rindge Dam and other	Support lead agencies in efforts to complete the design and engineering plans for the	State Parks, Army Corps	TBF, RCDSMM, CDFW, others	To develop design and engineering plans to remove Rindge Dam and additional barriers, to	Pending Notice of Determination by Army Corps, communicate with lead agencies (State Parks, Army	Update in semi-annual report	Complete implementation of the Malibu Creek Ecosystem Restoration	5, 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**
	barrier removals) to support ecosystem restoration	Malibu Creek Ecosystem Restoration Project			restore terrestrial and aquatic habitat connectivity and establish natural sediment transport regime	Corps) to identify additional technical support and funding needs		Project including the removal of barriers to improve stream and riparian habitats and to benefit the steelhead trout	
10	Remove additional barriers to support fish migration and ecosystem services	Identify, prioritize, and acquire funding for barrier removal projects	RCDSMM, State Parks, NPS	CDFW, many	To engage with partner entities to identify potential opportunities for fish barrier removal	Opportunistically attend meetings and engage in conversations to advance project prioritization and funding	Update in semi-annual report	Remove fish barriers to support endangered steelhead trout habitat expansion, increase resilience related to climate change, and provide ecosystem services	2, 5, 6

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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	Update in semi-annual report	Restore at least two priority stream areas as defined by guiding documents such as the Ballona Creek Greenway Plan	2, 4, 5, 6
12	Restore smaller coastal lagoons and other wetland types to increase wetland habitat area and condition throughout the watershed	Finalize restoration planning and permitting for Topanga Lagoon restoration project and initiate project	State Parks	SCC, RCDSMM, CalTrans, LACBH, CDFW	To create a restored habitat that integrates fish passage barrier removal, wetland habitat restoration, visitor services, and recreational opportunities at Topanga Lagoon	Continue working on restoration design alternatives, incorporating stakeholder and TAC input, and work towards CEQA permitting and documentation funded by Prop. 12	Update in semi-annual report	Restore and increase wetland and transition habitat acreages for small lagoons such as Topanga Lagoon and other wetland systems to	2, 5, 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**
		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	improve ecological functions	
		Conduct comprehensive monitoring of small lagoons in northern Bay to inform CMP and seek funding to continue Malibu Lagoon monitoring	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 chapter), and acquire funding to continue long-term monitoring and data collection at Malibu Lagoon	Seek funding to continue surveys and conduct new surveys to inform CMP and wetland condition trends for our region; consolidate existing data for northern lagoon systems; collect new data to fill identified gaps	Update in semi-annual report		

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		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	Update in semi-annual report		
13	Restore Ballona Wetlands Ecological Reserve to enhance wetland habitats and benefits to people	Support the lead agencies by contributing technical information to the Final Environmental Impact Statement and Report and permitting	CDFW	Army Corps, TBF, LACFCD, SCC	To support the lead agencies in completing permitting and a federal environmental review document	Continue 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, functions, and services; Create public access trails and bike paths and encourage	2, 5, 6, 7
		Continue community engagement and hand-restoration within the	TBF	CDFW, Friends of Ballona Wetlands, Edith Reed and	To restore four acres of degraded wetland and transition habitat at the Ballona Wetlands	Continue to conduct community restoration events and biological	Annual Report (Community Restoration Project)		

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		Reserve with FBW		Associate, CRI, SCC	Ecological Reserve through community restoration	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)		recreation and stewardship at the Ballona Wetlands Ecological Reserve	
		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		

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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 Crossing project	CalTrans, MRCA	RCDSMM, Assm. Bloom, SCC, SMMC, NWF, CDFW	To complete implementation of the Liberty Canyon Wildlife Crossing Project in support of wildlife movement and safety and enhanced habitats	Attend meetings and conduct other communications to support the implementation of the Liberty Canyon Wildlife Crossing project	Update in semi-annual report		
15	Implement projects that improve understanding and/or enhance	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	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	2, 5, 6

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	endangered and threatened species populations (e.g., habitat improvements for Western Snowy Plover, genetic banking)				population recovery			watershed	
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			
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			

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16	Support the implementation of activities and projects such as those in Enhanced Watershed Management Plans (EWMPs) and activities identified in the TMDL implementation schedule to help achieve TMDL goals for 303d listed waterbodies in the Bay and its watershed	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 Clean Water Program	Continue to oversee implementation of capital projects for storm water pollution reduction through multi-benefit solutions (also see Action 17); inform and support the Stormwater Strategy efforts led by the SWRCB	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 timeline	1, 2, 4, 5, 6, 7
		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 IRWRP Leadership Committee	Update in semi-annual report		

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		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 WMPs in the watershed	Outreach and support project applications by municipalities where appropriate, and keep the SMBRC Governing Board and membership informed of progress	Update in semi-annual report		
17	Infiltrate, capture, and reuse stormwater and dry-weather runoff through green infrastructure, LID, and other multi-benefit projects and improve understanding	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

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	of ecosystem services provided	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 Realignment and Stormwater Filtration / Retention Project, Westwood Neighborhood Greenway Project, and Ladera Park Water Quality Enhancement Project; work with grantees to continue to implement two Prop. 12 projects: Monteith Park and View Park Green Alley Stormwater	Update in semi-annual report		

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						Capture Project and Beach Cities Multi-Benefit Green Streets Project			
		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		
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	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	TBF	CDBW, marina operators	To provide the boating community with additional	Conduct outreach regarding need for additional	Update in semi-annual report		

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		Marina del Rey or King Harbor			pollution prevention resources	sewage pumpouts and dump stations			
		Support installation of bilge pumpouts in Marina del Rey or King Harbor	TBF	marina operators	To support installation of bilge pumpouts	Conduct outreach and distribute information regarding need for additional pollution prevention resources	Update in semi-annual report		
		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		
20	Support elimination of non-point pollution from onsite	Complete sewer connections of residential properties to the centralized	City of Malibu	LARWQC B	To improve water quality and reduce nutrient pollution through connecting residential	Monitor and inform SMBRC Governing Board, other stakeholders, and the general	Update in semi-annual report	Achieve level of performance and water quality protection set	4, 5, 6, 7

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	wastewater treatment systems	wastewater treatment facility in the Malibu Civic Center area			properties to the centralized wastewater treatment facility	public on the progress made by the City and LARWQCB's efforts in completing the sewer connection		by state policy for all OWDS in the Santa Monica Bay watershed	
		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	Update in semi-annual report		

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						maintenance of OWTSSs			
21	Support policies that promote reuse, recycling, and advanced wastewater treatment to reduce reliance on imported water sources	Support recycled wastewater efforts by JWPCP of LACSD	LACSD, MWD	LACFCD, SMBRC	To support expansion of wastewater effluent recycling by JWPCP of LACSD	Monitor and inform the SMBRC Governing Board membership, other stakeholders, and the general public on the progress made by JWPCP of LACSD in expansion of wastewater recycling; Continue testing at the Advanced Purification Center demonstration facility and initiate environmental	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; work towards meeting the State’s goals for recycled water in the Recycled Water Policy	4, 6, 7

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						studies required under CEQA			
		Hyperion Treatment Plant to implement pilot project for recycled water	LASAN	LACFCD, SMBRC	To support timely completion of Hyperion's Recycled Water Program	Monitor and inform the SMBRC Governing Board membership, other stakeholders, and the public on the implementation progress of Hyperion's Recycled Water Program	Update in semi-annual report		
		Support recycled wastewater efforts by Tapia Water Reclamation Facility and others through expansion of distribution system and	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	Continue construction of the Santa Monica Advanced Water Treatment Facility	Update in semi-annual report		

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		regional partnerships							
22	Support policies and implement projects that divert landfill waste and encourage composting to improve water quality and lower greenhouse gas emissions	Support continuation of Table to Farm compost hubs	Schools	TBF, Environmental Charter Schools, Social Justice Learning Institute, Restaurants, LA Compost, LA Food Waste Prevention & Rescue Working Group	To reduce food waste being sent to landfills, compost food waste, and apply compost to urban gardens to grow food	Support existing compost hubs and Table to Farm/Environmental Charter School community garden, especially those restricted by COVID-19, and help support partners in strengthening and developing Los Angeles' community compost projects	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 support agriculture, gardens, and restoration projects	4, 6
		* Support expansion, outreach and implementation for residential and commercial	Municipalities	TBF, CalRecycle, LA Food Waste Prevention &	To support greenhouse gas reduction by way of residential and commercial organics recycling implementation	Continue to participate in LA Food Policy Council Food Waste Prevention Working Group;	Update in semi-annual report		

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		organics collection and recycling		Rescue Working Group, LACDPW	by city and state regulatory agencies	Support efforts of partners and municipalities on the implementation of organics recycling to meet California’s Short-Lived Climate Pollutants Law targets			
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	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 site-suitability study	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
		Continue to advise BMPs for beaches that promote habitat condition improvements and support for unique species	LACDBH	LACDBH, Pepperdine, Beach Ecology Coalition, beach managers, Audubon, TBF, CRI, USFWS, CDFW, USC Sea Grant, Cal Sea Grant,	To build upon and continue partnerships with groups and agencies to benefit beach habitat conditions	Continue partnerships and active participation with groups and agencies such as LACDBH, Audubon Society, Pepperdine, Beach Ecology Coalition, State Parks, and USFWS to implement and provide recommendation	Update in semi-annual report		

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				Heal the Bay		s for best management practices along beaches			
27	Produce educational resources and materials and conduct outreach to improve best management practices for Southern California boaters (e.g., fuel, sewage, and hazardous waste management)	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, clean boating social media toolkits, and interactive Clean Boater Questionnaire; Continue to promote and distribute informational videos (Y-Valves, Marine Composting Toilets, and Marine Protected Areas), MPA	Newsletters, Tide Calendar, Boater Kits, social toolkit	Increase understanding and adoption of sustainable boating habits to reduce boating related pollutants entering waterways (e.g., boat sewage, used oil, antifreeze, bilge water, batteries, copper, trash, and aquatic invasive species)	4

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						interactive educational quiz, 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)			
		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 events, presentations, and trainings; Conduct Community Based Social Marketing barriers/benefits research to inform behavior	Update in semi-annual report		

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						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	Compile a literature review	Update in semi-annual report		
		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	Update in semi-annual report		

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						partnership with the California Boating Clean and Green Dockwalker program			
		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 with developed collateral	Update in semi-annual report		
28	Support efforts of disadvantaged communities to achieve healthy habitats, implement green infrastructure, and reduce	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	Update in semi-annual report	Help disadvantaged communities to achieve healthy habitats through restoration and pollution reduction projects	4, 6, 7

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	pollution					participation and communications			
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	LARWQC B, LAC-DPH, CRI, Heal the Bay	To support SWRCB's collection and coordination of bacterial sampling results for beach water quality monitoring required under AB 411; To support Heal the Bay's efforts to standardize beach water quality monitoring and effectively disseminate the information to the public	Continue SWRCB's participation in the California Water Quality Monitoring Council (CWQMC), assistance in updating and maintaining the CWQMC's Safe to Swim map and other interactive maps, and opportunistically explore ways to coordinate with other beach water quality reporting systems; Continue to update and maintain Heal	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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		Maintain and enhance the existing seafood contamination education and enforcement program	EPA Superfund	FCEC partners, Heal the Bay, US EPA	Support and facilitate the continuation and enhancement of the existing seafood contamination education and enforcement program	the Bay's NowCast system, River Report Card, and interactive website Continue to participate in the Fish Contamination Education Collaborative	Update in semi-annual report		
30	Conduct community engagement, education, and inform policies related to water conservation and reuse to reduce water	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	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	6

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	demand and reliance on imported sources					TBF social media postings		agencies	
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	TBF, municipalities	businesses,	To reduce pollution from businesses	Apply for funding to support the expansion of	Update in semi-annual report				

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		expansion of best management practices to incorporate other business sectors		TreePeople, LAUSD	through implementation of best management practices	best management practices to 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

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		Distribute restaurant engagement tools	TBF	Municipalities	To reduce pollution from restaurants	Support Clean Bay Certified restaurant program; Advance pollution prevention best management practices such as ReThink Disposable project (see Action 32)	Update in semi-annual report		
32	Reduce marine debris by supporting bans on single-use items, conducting outreach, and participating in trash reduction programs	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	Complete Year 2 ReThink Disposable LA implementation at 3-5 food service establishments (connects to Action 31); Acquire funding to advance project	Update in semi-annual report	Implement ban on single use disposable plastics in Los Angeles County and 100% of cities throughout watershed; engage 30 food service establishments	4

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		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	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 as a report or manuscript in a scientific journal	Final 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 and	Continue data collection, analyses, and evaluation to inform a future manuscript	Update in semi-annual report		

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					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	Continue pilot study for data collection, analyses, and evaluation regarding microplastics fate and transport	Update in semi-annual report		
34	Improve understanding of emerging contaminants through monitoring and research to inform source control and reduce loading (e.g., fire retardants), especially in	Improve analytical methodology and standardize monitoring of more emerging contaminants	SCCWRP	Physicians for Social Responsibility, Water Foundation	To improve availability, sensitivity, and repeatability of analytical methods for emerging contaminants to improve data quality for monitoring emerging contaminants in	Support expanding list of contaminants monitored and monitoring reports and description of lab methods to analyze emerging contaminants	Update in semi-annual report	Reduce impacts of emerging contaminants on key habitats in the Bay and its watersheds	4

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**
	the context of climate change				aquatic ecosystems				
35	Monitor and inform management actions for Harmful Algal Blooms (HABs)	Continue to support research and monitoring efforts for HABs, especially in context of climate change and CMP implementation	SCCWRP, UCLA, UCSC, SCCOOS	CRI, JPL/NAS A	To support research and monitoring efforts that fill data gaps in our region for HAB occurrences, frequencies, causes, and impacts, especially in the context of climate change	Explore emerging technologies like remote sensing and DNA technology to better understand and fill data gaps related to HABs, conduct plankton sampling study	Update in semi-annual report	Reduce prevalence of HABs in the Bay and its waterbodies as measured by the Comprehensive Monitoring Program	4, 5, 6, 7
		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	Support monthly maintenance of the Santa Monica Pier Shore Station	Real time data available on SCCOOS website		

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**
		Improve public outreach and education on HABs	NGOs, coastal municipalities, others	CDFW, many	To improve public understanding of harmful algal blooms, causes, and impacts	Present results of fire / HAB study and CRI study to interested groups	Update in semi-annual report		
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	Establish one new study site, conduct kelp density surveys, and assist with instrument maintenance and data download	Update in semi-annual report	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, LARWQC B, SCCWRP, TBF, DMO	To continue using high-frequency, high-resolution OA sensors to characterize OAH conditions in Santa Monica Bay	Redeploy 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	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**
						the water column, and 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 C M P; to seek funding and implement the CMP; to complete and release the State of the Bay Report	Continue work towards writing State of the Bay Report with TAC; implement the HAB study in partnership with CRI; Revise the QAPP	Update in semi-annual report; State of the Bay Report; revised QAPP		
		Convene technical advisors to prioritize actions based on information from CMP	SMBRC, TAC, universities , others	TAC, TBF, SCCWRP , others	To prioritize monitoring and data collection needs based on the revised CMP for major habitats in the Bay and implement the prioritized	Once revised CMP is released, prioritize data gaps by major habitat with support of scientific advisors, acquire funding (e.g.,	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**
					monitoring protocols	Prop. 50 grant program), and implement monitoring protocols			
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	Final Protocol(s)	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,	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	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**
				CDFW, UCLA, others		LASAN outfall pipe surveys			
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
39	Monitor and inform effective management of Marine Protected Areas, Fishery Management Plans, and	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	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**
	local fisheries for recreational and commercially important species	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	health advisories	
		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	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**
						for additional MPA outreach efforts			
40	Research and inform best management and pollution reduction practices to address non-point source pollution and facilitate reduction	Identify partners and identify funding sources for long-term monitoring efforts for LID and water conservation efforts	City of Santa Monica, many	LA County, municipalities, LACDPW, Our Water LA Coalition	To establish project partners and identify potential funding sources in support of long-term monitoring for LID and water conservation efforts	Continue to work with project partners, agencies, and stakeholders to develop MOUs or other agreements with partners	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
		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	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**
42	Inform strategies to reduce greenhouse gas emissions and increase carbon sequestration in support of existing state actions and policies	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
		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 sequestration processes and rates	Update in semi-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**
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 disadvantaged communities, and coordination of efforts across the County	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**
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	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	Complete and implement a comprehensive regional sediment management plan to restore natural functions where possible and mitigate impacts of climate change	6, 7

* New projects for FY22 Work Plan are indicated with an asterisk (*) in the CCMP Next Step column.

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

IV. ESTIMATED FY22 BUDGET

This section contains the estimated and projected budget for FY22. The SMBNEP's budget and Work Plan are fluid as only the USEPA annual allocation is a consistent income source. The SMBNEP works with numerous partners and collaborators to develop projects and find funds and staff that support the SMBNEP and supplement the USEPA annual allocation. As a result, new projects are always in development and staffing allocations of time and budget shift frequently to meet new obligations as additional funds are secured.

The Work Plan was brought before the Policy Committee of the SMBNEP in April 2021 and may be adjusted when full funding is determined. Any adjustment will reflect the SMBNEP's and Host Entity's "The Bay Foundation's" work during October 2021 to September 2022 (Any such adjustments to USEPA NEP funding will be documented in an amendment to the budget and Work Plan, approved by USEPA.)

Estimated Funding Authorization Summary Table, 320 plus Match:

FY22 Funding Authorization Estimate (October 1, 2021 – September 30, 2022)	
EPA 320 FY22 Base Funding Plus Estimated Supplemental *	700,000
SMBRC – Match	250,000
The Bay Foundation – Match	380,000
Loyola Marymount University – Match	70,000
Estimated Funding Total	1,400,000

Descriptions of Action Categories in estimated operating budget:

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

Summary Table of Estimated 320 Funds by Action Categories:

Work Plan Action Categories	Estimated Funds *
Direct Management Actions	137,470
Governance and Policy	32,200
Stakeholder Education and Engagement	74,750
Research and Monitoring	233,360
SMBNEP Support / CCMP Tracking	222,220
TOTAL *	700,000

* Note that the FY22 320 budget funds are estimated by action category.

Estimated Operating Budget for FY22 and Estimated Matching Funds:

Estimated Operating Budget		
Salaries (Staff time allocations):	EPA 320	Match
Direct Management Actions	65,690	255,000
Governance and Policy	19,290	0
Stakeholder Education and Engagement	44,780	0
Research and Monitoring	86,750	0
SMBNEP Support / CCMP Tracking	119,350	200,000
Fringe Benefits and Taxes @ 30% (estimate)	100,750	0
Total Salaries and Benefits:	436,610	455,000

Travel:	EPA 320	Match
Annual NEP Tech Transfer Conference (location TBD)	2,500	0
Annual ANEP/EPA Meeting in Washington DC	2,500	0
Staff & Stakeholder Travel Expenses: year-round State and Local Travel (includes airfares, mileage, ridesharing, parking, etc.)	5,000	0
Total Travel:	10,000	0

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

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Supplies:	EPA 320	Match
Marine Supplies (SCUBA gear replacements)	1,000	0
Small Equipment (replacement of laptops, desktops, cameras, printers, and others)	5,000	0
Program Materials (field and lab materials, gloves, shovels, etc.)	2,500	0
Office Supplies (printer ink, paper, flash drives, pens, etc.)	2,390	0
Total Supplies:	10,890	0

Other:	EPA 320	Match
Marine Facilities & Maintenance (SoCal Marine institute space, berth, storage, dive locker, boat maintenance, tank fills, others)	12,600	0
Marine Safety (annual gear service, tank tumbles and inspections, dive insurance service, AAUS membership, and dive safety officer services, others)	9,600	0
Sensors/Sondes Maintenance & Upgrades (including recalibration, cleaning, repairs, and maintenance of ocean acidification sensors and watershed sondes)	8,000	0
Conferences & Meetings (includes conference fees, Management Conference meetings (refreshments, meals, etc., for Stakeholder, TAC, EC, GB, and other meetings), and other year-round conferences and meetings.	5,000	0
IT Service, Web Service, and Software (IT service, website service, office software (Microsoft software, Google software, electronic signature, email distribution, cloud storage, others), and program software (ArcGIS, ADA compliant Adobe, Airtable, Smartwaiver, Trello, others)	12,000	0
Printing & Design (printing and design for reporting, etc.)	2,000	0
Communications (Video conference software, VOIP telephones and cell phone costs)	6,000	0
Loyola Marymount University (office space, laboratory space, meeting rooms, faculty and staff support)	0	60,000

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Other:	EPA 320	Match
Loyola Marymount University (CRI research support)	0	10,000
SMBRC (administrative services, space, and other support)	0	50,000
Volunteer Labor (Match)	0	25,000
Total Other:	55,200	145,000

Contracts / Studies:	EPA 320	Match
CRI Programs (funding to advance work on intertidal microplastics research; beach characterization studies; modeling coastal climate stressors and adaptation strategies; native plant microbe interaction research; eelgrass research; marine invertebrate physiology; habitat restoration and monitoring; research internships; and filling other CMP data gaps)	70,000	0
Communications Consulting (media relations services)	6,000	0
State of the Bay Consulting	20,000	0
Other Contracts (Match only)	0	100,000
Total Contracts / Studies:	96,000	100,000

Indirect @ 15%:	EPA 320	Match
Total Indirect @ 15%:	91,300	0

TOTAL BUDGET	700,000	700,000
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Travel Documentation

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

The FY21 travel summary table provides a summary of events and travel from the last fiscal year through March 2021. Due to travel restrictions due to COVID-19, no national travel was done, conferences and meetings were attended via video conferencing. For fiscal year 2022, we anticipate a hybrid of virtual/video conferencing and actual travel. The FY22 table provides an estimate of travel for the next fiscal year.

FY21 Travel Summary Table through March 2021:

FY21 Travel Summary				
Date	Event/Trip Purpose	Location	Staff	Cost
Oct/Nov 2020	Annual NEP Tech Transfer Conference / Information sharing and technology transfer among NEPs and partners	Online Video/Audio Conferencing	Tom Ford, multiple staff, Video Conference	\$0
Apr 2021	ANEP / EPA National Conference. Conference for NEPs, EPA, and partners.	Online Video/Audio Conferencing	Pending	\$0
TOTAL	----	----	----	\$0

FY22 Estimated Travel Summary Table:

FY22 Anticipated Travel				
Date	Event/Trip Purpose	Location	Staff	Estimated Cost
Oct – Dec 2021	NEP Tech Transfer Conference / Information sharing and technology transfer among NEPs and partners.	TBD	Tom Ford, TBD	\$ 2,500
Feb - Mar 2022	ANEP/EPA National Conference / Conference for NEPs, EPA, and partners.	Washington, D.C.	Tom Ford, TBD	\$ 2,500
All Year, multiple dates	Staff & Stakeholder Meetings and conferences travel / Information sharing and technology transfer among NEPs, partners, and stakeholders.	Various CA Locations	All staff	\$ 5,000
TOTAL	----	----	----	\$10,000

Appendix A. Table of Completed Projects in FY21

Project Name	Objective	Brief Project Description	Lead	Partners	Major Accomplishments	Key Deliverables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core
Carbon Canyon Acquisition Project (funded by Prop. 12)	To acquire and protect 91 acres of undeveloped land in Carbon Canyon to prevent development in a fire-prone area and expand recreational opportunities	The project consisted of the acquisition in fee of 91 acres of undeveloped land in Carbon Canyon, outside of Malibu. MRCA will own and operate the land in perpetuity.	SMMC, SCC, CNRA, WCB	SMBRC, MRCA, NPS, State Parks, MRT, Trust for Public Land, CDFW	Permanent protection of 91 acres of open space and habitat in the Santa Monica Mountains, preserving habitat and wildlife corridors, preventing development, preserving the scenic viewshed, and increasing public access to recreation.	Update in NEPORT	Publicly acquire new open space as it becomes available throughout the watershed to promote connectivity, preserve habitat, and sustain ecological services	5, 6, 7

Project Name	Objective	Brief Project Description	Lead	Partners	Major Accomplishments	Key Deliverables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core
Santa Monica Bay Catch Basin Insert 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 aimed to capture trash and reduce stormwater pollution by retrofitting and installing connector pipe screen (CPS) units in existing catch basins across the Palos Verdes Peninsula (PVP) watershed draining to Santa Monica Bay, spanning approximately 14 sq. miles. This project will help mitigate trash and marine debris and assist cities in the PVP watershed in implementing the requirements for stormwater permits.	City of Rancho Palos Verdes	Cities of Palos Verdes Estates, Rolling Hills Estates	Installation of 1,112 CPS units on all catch basins flowing into Santa Monica Bay and suitable to be retrofitted across the cities of Rancho Palos Verdes, Cities of Palos Verdes Estates, and Rolling Hills Estates.	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
Pure Water Project Las Virgenes-Triunfo (Pure Water Project; funded by Prop. 12)	To support expansion of recycled wastewater distribution and reuse	The project involved constructing a 100 gallon-per-minute, indirect potable water reuse demonstration project for reservoir augmentation that will produce up to six million gallons of local, drought resistant water supply per day, while improving in-stream habitat. The demonstration facility will test the advanced microfiltration, reverse osmosis, ultraviolet light disinfection, and oxidation components of a Pure Water advanced treatment facility prior to implementation of a full-scale project.	LVMWD	LV-Triunfo JPA	Completed construction of the Demonstration Facility, including interpretive signage and educational materials explaining each step of the treatment process, the need for potable reuse, and the environmental benefits associated with the project. Virtual tours and live-stream options were available during the COVID-19 emergency.	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; work towards meeting the State’s goals for recycled water in the Recycled Water Policy	4, 6, 7

Appendix B. Santa Monica Bay National Estuary Program Entities Staffing

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

The Bay Foundation staff as of 1 April 2021:

Title	Name	Key Responsibilities
Chief Executive Officer	Tom Ford	Facilitates the implementation of the CCMP and is responsible for the production of workplans and other documents to implement the CCMP. Oversees NEP budget and staffing supporting and implementing NEP activities. Serves as the director of SMBNEP and as the liaison to the USEPA for the SMBNEP. Leads and contributes to the design and implementation of projects, programs, partnerships, research, and communications to implement the actions and goals of the SMBNEP CCMP / CMP. Informs and develops strategies, policies, and priorities to support SMBNEP and the furtherance of SMBNEP's CCMP, the National NEP program, US EPA Region Nine, and EPA Headquarters. Leads the diversification and enhancement of funding streams. Leads the strategic development of programs, partnerships, and projects; oversees and directs staffing with the COO; executes contracts, policies and management practices; oversees audits; and develops, informs, and implements programs of CRI.
Chief Operations Officer	Marcelo Villagomez	Supports the implementation of the SMBNEP. Oversees terms and conditions of TBF's awards, grants, contracts, and agreements are met. Ensures and oversees effective operations and processes; manages resources effectively, including financial and human resources; evaluates and develops human resources; oversees performance, compliance, and policies and procedures; oversees impact and sustainability; and supports the strategic direction and programs. The COO is in charge of operations, human resources, finances, administration, and other duties as needed.

Title	Name	Key Responsibilities
Science Director	Karina Johnston	Identifies, develops, and directs projects and programs that advance research, monitoring, and ecological restoration in support of CCMP / CMP implementation. Leads authorship of technical and scientific documents and publications; develops and maintains partnerships, collaborations, and implements outreach strategies to facilitate CCMP / CMP implementation; co-leads development and completion of the CCMP and CMP planning and reports; and supports other SMBNEP reporting needs. Directs the planning and implementation of CRI research programs; supports faculty research; and provides mentorship to staff, students, interns, and volunteers.
Director of Marine Operations, Operations Support Manager	Heather Burdick	Develops mid and long-term planning of the Marine Program to implement SMBNEP CCMP / CMP actions and goals. Develops and directs operations including research, monitoring, and ecological restoration for marine program activities; develops and coordinates partnerships; supports research / CRI; and supports operations of the organization. Directs and supports the authorship of technical documents, grant applications, and publications. Supports communications and outreach efforts.
Community Engagement Program Manager	Georgia Tunioli	Pursues CCMP actions that are related to Community Engagement. Develops plan(s) to advance existing CEP programs. Identifies, contributes / leads in, and submits grants to support the CEP program. Oversees program development and planning; manages grants; builds partnerships and facilitates stakeholder meetings, trainings, workshops, fieldwork, and outreach; researches, develops, distributes, and presents education and engagement materials; and supports CRI. Implements TBF's communication goals and objectives, leads TBF website relaunch, and oversees social media strategies.
Marine Program Manager	Ben Grime	Manages Marine Program research, monitoring, and logistics; leads SCUBA based field work; recruits and supervises staff, interns, students and / or volunteers; supports the Director of Marine Operations in authorship of technical documents, grant applications, and publications; and supports research / CRI. Contributes to partnership development, data analysis, and reporting.

Title	Name	Key Responsibilities
Watershed Program Manager	Chris Enyart	Develops mid and long-term planning of Watershed Program to implement SMBNEP CCMP / CMP actions. Develops and directs projects including research, monitoring, and ecological restoration for watershed program activities; directs field work, lab work, report and technical document writing, outreach, and related tasks; supervises staff, interns, and volunteers; develops and coordinates partnerships; supports research / CRI.
Marine Program Project Manager	Rilee Sanders	Manages marine project research and monitoring efforts, leads SCUBA based fieldwork; supports recruiting and supervising interns, students and / or volunteers; supports the Director of Marine Operations in authorship of technical documents, grant applications, and publications; and supports research / CRI. Contributes to partnership development, data analysis, and reporting.
Watershed Program Assistant Project Manager	Maggie Jenkins	Supports Watershed Program Manager in planning, project administration, invoicing, communications, grant writing, and other management tasks. Implements and helps lead existing watershed programs on the ground. Supports reporting requirements of existing grants. Supports other additional projects aligned with actions of the CCMP / CMP. Supports research / CRI.
GIS and Research Specialist	Karina Alvarez	Maintains, analyzes, and reports on large-scale databases, including SMBNEP's CMP and TBF's scientific programs. Creates maps, literature reviews, and other related research or scientific monitoring products. Supports Science Director and other staff in the authoring and editing of scientific documents and technical reports. Supports the Watershed Program as needed, including fieldwork, labwork, data collection, quality control/assurance, and data analyses. Supervises and coordinates TBF and CRI internship students, research assistants, and volunteers.
Community Engagement Coordinator	Dalia Gonzalez	Supports CEP program through coordination of pollution prevention and community engagement projects; specifically, the Boater Education Program and Table to Farm Composting project. Contributes to program development, grant writing, partnerships, and facilitation of stakeholder events / trainings. Develops, designs, and distributes engagement materials. Coordinates social media efforts, Baywire production, and assists the Community Engagement Program Manager.

Title	Name	Key Responsibilities
Community Engagement Coordinator	Andrea Carrassi	Supports CEP program through coordination of pollution prevention and community enrichment projects, specifically the Boater Education Program and Clean Bay Certified. Contributes to program development, grant writing, partnerships, and facilitation of stakeholder events / trainings. Develops, designs, and distributes engagement materials. Supports communication and outreach with website relaunch and assists the Community Engagement Program Manager.
Watershed Program Coordinator	Sandra Cuadra	Conducts research and monitoring activities, including field work, lab work, data collection, quality control/assurance, and data analyses; recruits and supervises interns, students and/or volunteers; supports the Watershed Program Manager in authorship of technical documents, grant applications, community engagement, and publications; and supports research / CRI.
Marine Program Field Technician	Sam Corder Lee	Maintains and enhances aquatic life support systems and performs daily husbandry tasks. Collects consistent and organized data related to water quality, feeding, and animal health, Conducts SCUBA based subtidal field work (restoration activities, data collection, monitoring, and mapping). Supports research / CRI.
Watershed Program Field Technician	Riley Temkin	Conducts field work, e.g., scientific monitoring and restoration activities, including dune, beach, wetland, upland, and riparian habitats. Supports logistical planning, field preparation, community and volunteer habitat restoration events, data entry and quality control checks, coordinating interns and volunteers, laboratory support, and general administrative tasks. Supports report and grant writing and performs tasks related to website, electronic media maintenance, and other community engagement activities.
Marine Program Aquarist Intern	Katie Blessing	Maintains aquatic life support systems and performs daily husbandry tasks. Collects consistent and organized data related to water quality, feeding, and animal health. Assists with boat-based field work and outreach. Supports outreach and communication efforts.
Administrative and Communications Assistant	TBH	Supports the COO and organization with administrative tasks, including accounting, payroll, insurance, and others. Assists TBF communications by executing social media posts, advancing social media goals, conducting routine website updates, and implementing ADA compliance for publications.

Santa Monica Bay Restoration Commission staff as of 1 April 2021:

Title	Name	Key Responsibilities
Chief Administrative Director	Guangyu Wang	Coordinate and execute the meetings of the Governing Board (GB), the Executive Committee (EC), the Technical Advisory Committee (TAC), and the Santa Monica Bay Stakeholders; interact with State, Federal, Local agencies to ensure compliance with regulatory and funding requirements; perform administrative functions associated with SMBRC; oversee grant management for State bond-funded projects; collaborate with TBF on SMBNEP work plan development, implementation, and progress reporting.
Environmental Scientist	Caitlin Gray	Support the Chief Administrative Director in preparing and executing Commission meetings; conduct grant oversight and management for State bond-funded projects; collaborate with partner agencies and organizations in developing annual work plans and implementing restoration projects and monitoring efforts in support of the CCMP; compile and provide information to stakeholders and the general public on various SMBRC projects.