SANTA MONICA BAY NATIONAL ESTUARY PROGRAM
Fiscal Year 2020 Work Plan

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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
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
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
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	Sanitation Districts of Los Angeles County
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
Prop.	Proposition Grant
PVPLC	Palos Verdes Peninsula Land Conservancy
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
SMBNEP	Santa Monica Bay National Estuary Program
SMBRA	Santa Monica Bay Restoration Authority
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
TAC	Santa Monica Bay Restoration Commission Technical Advisory Committee
TBF	The Bay Foundation (also known as the Santa Monica Bay Restoration 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
WAC	Santa Monica Bay Restoration Commission Watershed Advisory Council
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). USEPA identified the Santa Monica Bay as a national estuary, with the concurrence of the State that identifies actions and priorities to restore the Santa Monica Bay. The Santa Monica Bay National Estuary Program (SMBNEP) is a locally driven program supported by a private-public partnership. This partnership is implemented by three entities during the FY20 Work Plan period: Santa Monica Bay Restoration Commission (SMBRC), Santa Monica Bay Restoration Authority (SMBRA), and Santa Monica Bay Restoration Foundation also known as The Bay Foundation (TBF). The three entities work together to implement the Comprehensive Conservation and Management Plan (CCMP) for SMBNEP along with their many partners. Loyola Marymount University's Coastal Research Institute (CRI) works collaboratively with TBF to support CCMP and Comprehensive Monitoring Program efforts. Each entity is briefly described below, and more information can be found on the roles, membership, and relationship between entities on 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 [Pub. Res. Code §30988(d)]. SMBRC is charged with coordinating activities of federal, state, local, and other entities to restore and enhance the Santa Monica Bay, including identifying and leveraging funding to put solutions into action, building public-private partnerships, promoting cutting-edge research and technology, facilitating stakeholder-driven consensus processes, and raising public awareness (www.smbrc.ca.gov). SMBRC brings together local, state, and federal agencies, environmental groups, businesses, scientists, and members of the public on its 36-member Governing Board. SMBRC is also supported by a Technical Advisory Committee (TAC), and a broad stakeholder body, the Watershed Advisory Council (WAC). SMBRC is supported administratively by the State Water Resources Control Board (SWRCB), including staff and office space.

SMBRA was created in 2004 by a joint exercise of powers agreement between SMBRC and the Los Angeles County Flood Control District and operates as a local public agency within the Santa Monica Bay watershed and the jurisdictional boundaries of SMBRC and the District. The purpose of SMBRA is to broaden funding opportunities for projects within the Santa Monica Bay Watershed.

TBF is an independent, non-profit 501(c)(3) organization founded in 1990. The mission of TBF is to contribute to the restoration and enhancement of the Santa Monica Bay and other coastal waters (www.santamonicabay.org). TBF receives an annual 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.

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

Comprehensive Conservation and Management Plan and FY20 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. EPA'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. Updates and revisions are made to the CCMP through a public and iterative process with active participation from members of the Governing Board as well as members of the WAC and TAC. The new 2018 Action Plan identified approaches and strategies intended to make substantial progress toward clean waters and healthy habitats over the next five to twenty years. It reflected the consensus of SMBNEP partners with regard to the best 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 several steps, notably the associated Financial Plan, supplemental information, and consideration of the structure and governance of SMBNEP. Additionally, the Comprehensive Monitoring Program is also being revised, led by the Technical Advisory Committee.

This Fiscal Year 20 (FY20) Work Plan builds off the newly released CCMP Action Plan and is focused on a subset of the identified Actions and Next Steps in the Plan. The purpose of Work Plan is to identify program objectives, tasks, and timelines of the work to be performed during the federal fiscal year (FY20): October 1, 2019 – September 30, 2020, specifically to accomplish the goals and actions of the 2018 Action Plan and various technical, managerial, and administrative activities necessary to continue to advance the mission of SMBNEP.

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. Seven goals are identified in the 2018 Action Plan and are listed below. All seven goals are to be addressed by the actions and next steps identified in this FY20 Work Plan. 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 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

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Connection to USEPA Goals

The Clean Water Act section 320 grant is administered by USEPA and provided to TBF for carrying out certain annual Work Plan activities. Non-federal grant matching funds are required at a minimum rate of 1:1. In lieu of direct funding, the State Water Resources Control Board (SWRCB) contributes by providing state staff, office space, and other administrative services to SMBRC. In addition to the SWRCB contribution, the federal grant match requirement is met using funds from the State bond grants [e.g., Proposition 50 and 84 grants administered by the SWRCB and Proposition 12 grants administered by the State Coastal Conservancy (SCC)], and other State and local grants and funds received and managed by TBF and SMBRA. Projects and activities conducted by other entities identified in this Work Plan are funded by various sources secured by those entities.

The FY20 Work Plan and the CCMP serve USEPA's Goal 1: Core Mission – deliver real results to provide Americans with clean air, land, and water. EPA's FY 2014-2018 Strategic Plan charts a course for the agency and is organized around five key goals, including: addressing climate change and improving air quality; protecting America's waters; cleaning up our communities and advancing sustainable development; ensuring the safety of chemicals and preventing pollution; and enforcing environmental laws. This Work Plan includes activities that will contribute to the FY14-18 EPA Strategic Plan goals as well as the Office of Water (OW) *National Water Program Guidance* (FY16 and FY17). Specifically, the SMBNEP contributes to the element of the guidance that states: "EPA will continue to build the capacity within the National Estuary Program to adapt to changes from climate change on the coasts, and will provide additional assistance to individual NEPs to support their work to develop adaptation plans for their study areas or technical assistance to support implementation of those plans."

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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 or SMBRC's websites. Section IV will depict the Work Plan budget and travel documentation in the final Work Plan. The first draft of this Work Plan is being developed from the CCMP Action Plan, workshops with the Governing Board and Watershed Advisory Council, and partner and staff input. As SMBNEP is still in FY19, progress tracking and budget expenditures are estimated for the remainder of FY19, when needed.

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 Action Plan. The structure of the Work Plan is intended to mimic the structure of the CCMP Action Plan to facilitate ease of translation of progress towards implementing the 44 identified actions in the 2018 Plan. There will also be focus and efforts in FY20 to implement programs that interconnect and integrate issues across traditional boundaries such as climate change and comprehensive monitoring.

Several appendices will also be contained in the final Work Plan. The draft version of Appendix A, the completed projects table, is available in this draft version for review.

Work Plan Changes from FY19

The structural differences between the FY19 Work Plan and the FY20 Work Plan are considerable due to the cross-walking between this document and the new structure of the 2018 CCMP Action Plan. However, many of the priorities and actions remain similar to previous years. New projects are identified in the main tables with an asterisk. This new structure and format of the Work Plan document reflects the goals of SMBNEP to increase clarity, increase reporting efficiency, increase the readability and succinctness of the Work Plan, increase consistency between the CCMP Action Plan and Annual Work Plans, and increase consistency with EPA 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 there isn't identified funding for FY20, or that action may still be in development or in a planning stage.

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SMBNEP Program Accomplishments from Previous Year

This section contains a synthesis of programmatic or environmental success stories from the past year. This includes highlights from significant programs or projects from throughout 2018 and is categorically subdivided into 'wetlands, rivers, and streams', 'beaches, dunes, and bluffs', 'in the ocean', 'climate change', and 'our communities'. For additional detail on project activities, visit TBF's website: www.santamonicabay.org.

Wetlands, Rivers, and Streams

- Malibu Lagoon Post-Restoration Monitoring – This long-term comprehensive monitoring program evaluates the condition of the post-restoration Lagoon through biological, physical, and chemical surveys. In 2018, a five-year Comprehensive Monitoring Report was completed and released in July, and a subset of surveys continued into a final year of monitoring. The Lagoon continues to have improved circulation, water quality, and overall condition. Public restoration events are held monthly to remove non-native, invasive vegetation.
- Community-Based Restoration at Ballona Wetlands – This long-term project is restoring approximately three acres of heavily degraded habitats at the Ballona Wetlands Ecological Reserve through community-based restoration. In 2018, 95 volunteers removed invasive vegetation through 14 community restoration events. Additionally, TBF produced a Year 2 Annual Report in July. Year 2 results indicated a significant reduction in non-native vegetation cover in most areas as compared to the baseline, and an increase in native vegetation cover. Ongoing invasive vegetation removal, monitoring, and revegetation efforts continue in 2019.
- Evaluating Regional Wetland Monitoring Programs – This program is working towards increasing regional understanding of the condition of local coastal wetland systems and applying that knowledge towards standardizing wetland monitoring across the state of California. In 2018, this program continued work on data standardization, data consolidation and analyses, held program partnership meetings, and conducted outreach activities. This program is conducted in partnership with California State University, Long Beach, Tijuana River National Estuarine Research Reserve, and Southern California Coastal Water Research Project.
- *Restore America's Estuaries National Summit* – This conference explored cutting-edge issues in coastal restoration and management and was comprised of field sessions, presentations, and events. In December 2018, TBF joined hundreds of coastal habitat scientists and managers at the Restore America's Estuaries Summit in Long Beach to highlight monitoring results and restoration efforts by TBF across projects from beaches and dunes, to wetlands and kelp forests. TBF led field sessions, presentations, panels, and coordinated sessions. SMBNEP joined sister estuary programs from across the country to learn from each other and support collaborative opportunities.
- *Liberty Canyon Wildlife Crossing* — TBF managed this project for the Santa Monica Mountains Resources Conservation District which was designed to attract and assist wildlife in crossing under the 101 freeway. Fencing, native plants, boulders and other features were installed to enhance an underpass of the freeway adjacent to Liberty Canyon Road. Wildlife were using the underpass shortly following its completion though it will require years for the vegetation planted at the site to mature. Unfortunately, the site was impacted by the wildfire in November 2018 and efforts are being made to acquire funds to rebuild the site.

Beaches, Dunes, and Bluffs

- LAX Dunes Restoration – In partnership with Los Angeles World Airports and Friends of the LAX Dunes, TBF conducts monthly volunteer restoration events at the LAX Dunes to remove invasive

vegetation and teach the local community about the importance and resilience of coastal dune systems. Additionally, TBF coordinates biological monitoring activities and leads partners in larger-scale invasive plant removal efforts. In 2018, 689 volunteers completed over 2,000 hours and pulled over 650 bags of invasive, non-native vegetation. Additionally, the program had volunteer participants from over 200 unique zip codes, with many of them from disadvantaged communities. Lastly, Los Angeles Conservation Corps crews weed whacked an additional 7.8 acres of non-native brome grass and removed nearly one acre of iceplant. Two reports were produced in June, the Year 2 Report summarizing community restoration efforts and an Ecological Monitoring Report.

- 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 aiming to create a sustainable coastal strand and foredune habitat complex resilient to sea level rise. In 2018, native dune vegetation and sand hummocks continued to establish, ongoing monitoring informed climate change resiliency planning, and a Year 2 Annual Report was produced in August.
- 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 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. In 2018, project partners continued planning and permitting discussions, initiated community outreach, and conducted baseline monitoring.
- *Los Angeles Living Shoreline Project* – This innovative project, in partnership with LACDBH, State Parks, and SCC, aims to implement a multi-habitat approach to restore approximately 3.5 acres of beach and coastal bluff habitat and to improve coastal resilience in a disadvantaged community. This project also incorporates the experimental establishment of offshore eelgrass within a one-acre footprint. In 2018, TBF applied for and received funding, initiated partnership development, and advanced stakeholder engagement.
- *Manhattan Beach Dune Restoration* – This project aims to restore approximately 3.5 acres of foredune habitat in the City of Manhattan Beach to provide infrastructure protection and increase coastal resilience, while improving habitat quality through invasive plant removal and native plant establishment. In 2018, TBF began partnership and concept development with LACDBH, City of Manhattan Beach, and USGS, and initiated conversations with their City Council and Sustainability Task Force.
- *Healthy Beaches Research* – In partnership with Loyola Marymount University's Coastal Research Institute (CRI), this research project is conducting a site-suitability analysis to determine potential areas for beach restoration, evaluating factors such as recreational use, physical, and biological characteristics, while contributing information to the Comprehensive Monitoring Program. In 2018, Dr. John Dorsey and two internship students completed a pilot study and final report for three beach locations in the Bay, and Dr. Cristina Tirado and one internship student completed a literature review on human health benefits of green (and blue) spaces and restored habitats.

In the Ocean

- Kelp Forest Restoration – This project aims to restore up to 150 acres of giant kelp forest. Commercial fishermen and TBF scientists restore and monitor these reefs, respectively, as they are transformed from urchin barrens to kelp forests. In 2018, an additional 3.9 acres of kelp forest have been restored for a total of 46.9 acres since the project began in 2013.

- 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. In 2018, TBF completed construction of the second abalone laboratory to continue researching wild and captive spawning techniques, methods for raising abalone in aquarium facilities, and outplanting abalone back into the wild to rebuild natural populations. Renovations began on the existing facility and will be completed in February 2019. The newly renovated TBF abalone laboratory will act as a Southern California hub for white abalone research and restoration activities and enable us to support the recovery of these endangered marine snails in the wild.
- MPA Outreach – TBF participates in the LA Marine Protected Area (MPA) Collaborative, an association to coordinate with other NGOs and stakeholders throughout southern California to share vital information about the status and management of the MPA network in the region. In October 2018, TBF participated in "Honor the Ocean", a celebration of Santa Monica Bay's MPAs. The event featured traditional Chumash blessings and elder storytelling, educational booths, and interactive activities on Zuma Beach for the public to enjoy.
- *Socio-economic Research Related to Marine Spatial Planning* – This aerial-survey based project maps the location, type, and activity of boats along the southern California coast from the U.S. Mexican Border to Point Conception, tracking boater responses to the establishment of the Marine Protected Area network. Aerial survey data collected by TBF over the last 10 years in coordination with Lighthawk was by published in Ocean and Coastal Management. Dr. Amanda Zellmer of Occidental College authored the paper using pre- and post-MPA fishing trends observed during these surveys along with historical landing data and bathymetry maps to produce distribution models. These models can be used to inform monitoring of fishing activities within MPAs and how to effectively apply limited enforcement resources.
- *Oceanographic Shore Station* – TBF, in partnership with Southern California Coastal Ocean Observing System, Scripps Institution of Oceanography, Los Angeles Waterkeeper, US Environmental Protection Agency, and City of Los Angeles Bureau of Sanitation, assembled funding to reestablish and conduct periodic maintenance of a sensor array anchored to the Santa Monica Pier. This station is one of four in southern California collecting real-time data on temperature, pressure, chlorophyll, and salinity. The data are accessible to the general public and decision makers via the SCCOOS website.

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 Action Plan for the Comprehensive Conservation and Management Plan (CCMP), 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 beach and dune restorations. This Action Plan was a significant collaborative effort by SMBNEP's Management Conference, staff, and interested stakeholders and members of the public. The seven goals and 44 actions it contains represent priorities for our region, established through many workshops and consensus building activities. Work continues on other components of the CCMP, such as the Comprehensive Monitoring Program and the Financial Plan.
- *Ocean Acidification* – An array of instruments that measure pH, dissolved oxygen, and pCO^2 have been deployed off the Palos Verdes Peninsula since the second half of 2016 by the Sanitation District of Los Angeles County. The data collected by this project will improve our

understanding of ocean acidification and hypoxia off our coast. In 2018, data were collected at the second location at a depth of 60 m and showed less variability as compared to the first deployment year in 15 m. These data allowed good characterization of the frequency, magnitude, and duration of OAH events in the nearshore surface and offshore bottom layers, and further investigation in the causes of variability using highly complex, coupled physical-biogeochemical modeling.

- *Kelp and Eelgrass Ocean Acidification Buffer* – University of California Los Angeles' 2018 Senior Practicum class conducted research assessing the strength of kelp and seagrass in mitigating ocean acidification. The focus of their study was to determine the strength of buffering, exhibited by the increase in pH (lowering acidification) in eelgrass and kelp beds in Santa Monica Bay. Their preliminary findings are being built upon by the 2019 Senior Practicum class to further this research.
- 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. In 2018, data collection was completed in a kelp restoration site off Palos Verdes and a preliminary results report was published. Additional funding was awarded to California State University, Northridge and University of California, Davis from University of Southern California SeaGrant to continue this study on two more kelp forest sites. This work will resume in winter 2019.
- *Post-Fire Recovery and Monitoring* – The Woolsey Fire started on 8 November 2018, burning almost 100,000 acres of land and destroying over 1,500 structures in Los Angeles and Ventura Counties, including large areas of SMBNEP's northern watersheds. A large portion of the burn area was determined to be moderate soil burn severity, increasing the potential for runoff, debris flows, and other potential hazards. TBF is participating in a post-fire collaborative stakeholder group to consolidate and prioritize monitoring efforts as well as communicating with agencies and municipalities to coordinate recovery efforts.

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. Two projects were completed in 2018, Milton Green Street and University Park Neighborhood Rain Gardens. The Mountains Recreation and Conservation Authority's Milton Green Street project installed 14 Vegetated Stormwater Curb Extensions (VSCEs) adjacent to Ballona Creek. The VSCEs capture, treat, and infiltrate all dry- and a portion of the wet-weather runoff from 4.37-acres of densely developed area. The City of LA completed the University Park Neighborhood Rain Gardens project which installed 35 rain gardens on public parkways along nine streets. The project captures, treats, and infiltrates all dry- and a portion of the wet-weather runoff from a 209-acre drainage in the Ballona Creek watershed. Both projects improve water quality, reduce impermeable surfaces, provide local wildlife habitat, and valuable green space in urban areas.
- *Internship and Research Assistant Program* – Through this program, TBF and CRI coordinate volunteers, students, and postgraduates in research, habitat restoration, and scientific data collection efforts across many projects. The program also supports the implementation of the Comprehensive Monitoring Program. In 2018, 10 paid and 14 unpaid CRI interns conducted research on a broad array of ecological, physical, and chemical parameters to inform TBF's programs and projects. Additionally, three Loyola Marymount University CRI Faculty Fellows led research projects related to beach characterization, microplastics, and human health benefits from green spaces.

- 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. In 2018, the program continued to publish "The Changing Tide" statewide newsletters, annual tide pocketbook, and the Pumpout Nav app for pumpout station monitoring and public engagement. The program also produced and distributed 8,500 Boater Kits and trained 71 Dockwalker volunteers. In 2018, the program also produced and released an informational video on proper practices to best manage and reduce sewage spills from vessels.
- Clean Bay Certified Program – This program partners with watershed cities to certify restaurants that comply with stormwater permit requirements and additional pollution prevention practices. This year the program distributed 150 toolkits to restaurants. Toolkits included a faucet aerator for water savings, educational posters on best management practices, and information about Clean Bay Certified and Rethink Disposable LA. 120 food service establishments were certified in 2018 using an updated, more rigorous inspection checklist.
- *ReThink Disposable LA* – Clean Water Action / Clean Water Fund (CWA/CWF) program provides technical assistance to food service establishments for source reduction of single-use disposable items. In 2018, TBF partnered with CWA/CWF to bring ReThink Disposable to Los Angeles. In total, four restaurants (i.e., The Conservatory for Coffee, Tea, and Cocoa, Scoops Chinatown, Gus' Tacos Mexican Grill, and Palette Food and Juice) will collectively reduce single-use disposables by 246,570 pieces and prevent 2,637 pounds of waste from entering the waste stream or ending up as litter on our streets and beaches every year. On average, participating restaurants are also each projected to annually save $2,000 from reducing or eliminating targeted disposable foodware.
- Table-to-Farm Composting – To better address food waste and greenhouse gas emissions from landfills and transportation due to hauling waste, TBF is working with restaurants in Inglewood and Gardena and Environmental Charter Middle Schools (ECMS) to close the food loop. In 2018, the program built a second compost bin at ECMS Gardena. Since September 2017, 5,276 lbs of food waste has been diverted from landfills and composted, in a four-bin system. 720 students have been engaged in the program and have learned about food waste, compost, and climate issues.
- *Water Quality Monitoring* – This project is conducted in partnership with CRI to fill important water quality data gaps for our region while contributing data in support of the Comprehensive Monitoring Program. In 2018, three Master's theses were completed analyzing the effectiveness of LID implementation. The first two projects found that the garden retained between 73-100% of all stormwater, with 80-90% reduction in pollutants. Most of the pollutants were retained in the top layers of soil, but below regulatory trigger thresholds. The third project assembled 30 years of fecal indicator bacteria along Bay beaches and found decreasing trends over time for most sites.
- *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 2018, CRI developed and refined a protocol to extract microplastics from sediments and conducted a pilot study along Bay beaches. Ongoing partnership development with University of California Santa Barbara will continue to inform regional data gaps in the fate and transport conceptual model for microplastics in the nearshore environment and invertebrate community.

III. SMBNEP PLANNED ACTIVITIES

This section outlines each of the FY20 Work Plan actions and next steps to be undertaken during this fiscal year in a 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 products 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 Action Plan along with an associated narrative.

Many of the FY20 actions are continued from previous efforts or projects. Next steps which are new for this fiscal year are identified with an asterisk in the tables; all others should be assumed to be ongoing. Note that next steps or project activities that are on a grey row are part of the 2018 CCMP Action Plan, but are not currently identified as part of this current Work Plan. That does not preclude them from being part of partner activities or as part of future Work Plans. Completed tasks are often closely connected to ongoing, similar projects, and/or are part of a larger project. Recent completed tasks from the FY19 Work Plan are identified Appendix A.

The following table summarizes the primary work activities planned for FY20. 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.

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#	CCMP Action	CCMP Next Step(s) / Project Activity Name	Objective(s)	Description / Milestone Summary	Partner(s)	Outputs / Deliver-ables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core
1	Acquire open space for preservation of habitat and ecological services	Continued participation on resources agency Technical Advisory Committees	Acquire and/or protect high priority properties that are at risk of development, or provide high diversity, include wildlife corridors, and/or provide socio-economic benefits	Review grant applications, participate in meetings, and attend site visits for Urban Greening, Environmental Enhancement and Mitigation programs.	Resources Agency	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
		* Bond funded acquisitions	Acquire and/or protect high priority properties that are at risk of development, or provide high diversity, include wildlife corridors, and/or provide socio-economic benefits	Pending approval of Prop. 12 funding by the State Coastal Conservancy, work with grantees to complete the Carbon Canyon acquisition project	SMMC, MRCA, NPS, State Parks, MRT	Update in NEPORT		
		Support partners in identification and prioritization of key acquisition or conservation easement properties	Acquire and/or protect high priority properties that are at risk of development, or provide high diversity, include wildlife corridors, and/or provide socio-economic benefits	Meet with partners to develop list of high priority parcels for acquisition/protection and assist/support in identifying funding sources.	SMMC, MRCA, NPS, State Parks, MRT	Update in NEPORT		
2	Restore kelp forests in the Bay to improve the extent and condition of the habitat	Implement the rocky reef/kelp forest restoration project	To restore five 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	Partner with fisherman to cull urchin densities within the urchin barrens in targeted locations	NOAA, MSRP trustees, NMFS, Vantuna Research Group, Commercial Sea Urchin Harvesters	Annual Report (Kelp Project)	Restore 150 acres of kelp forest to improve habitat functions, local fisheries, and coastal resilience	6

#	CCMP Action	CCMP Next Step(s) / Project Activity Name	Objective(s)	Description / Milestone Summary	Partner(s)	Outputs / Deliver-ables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core
		Biological response monitoring of restoration areas	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 surveys of reference and restored sites; produce annual report	VRG	Annual Report (Kelp Project)		
		Develop recommendations for the deposition of materials from Rindge Dam or other suitable sources to augment sediment supply						
		Conduct carbon sequestration assessment of kelp restoration project						
3	Recover abalone populations in the Santa Monica Bay and region to support rare species and socioeconomic benefits to people	Establish abalone outplanting sites and conduct juvenile and larval outplanting	To reintroduce abalone and test effectiveness of outplanting methods	Conduct habitat suitability surveys for outplant sites; implement one red abalone outplant event and one white abalone outplant event (permit pending) in established restoration site	NOAA, NMFS, Cal Poly Pomona, SCMI, NFWF Bodega Marine Lab, SFSC, Paua Marine Research Group	Annual Report (Abalone)	Establish 2-3 minimally viable green and red abalone populations (at least 2,000 abalone per hectare) in the Bay; Establish 1-2 viable white abalone populations (at 2,000 abalone per hectare) in the Bay	6
		Monitor abalone restoration and reference sites	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 re-encounter rates, growth data, and genetic samples of outplanted abalone	NOAA, NMFS, Cal Poly Pomona, SCMI, NFWF Bodega Marine Lab, SFSC, Paua Marine Research Group	Annual Report (Abalone)		

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		Captive spawn abalone	To research captive spawning and larval culturing techniques, and raise abalone in aquaculture facility for outplanting	Condition broodstock abalone and conduct four captive spawning events	SCMI, NOAA, NMFS, Cal Poly Pomona	Annual Report (Abalone)		
		Maintain aquaculture facility for abalone	To facilitate captive spawning and rearing of red and green abalone in support of future restoration activities for outplanting in the wild	Complete the renovation of the abalone laboratory to house endangered white abalone and increase program wide capacity for culturing and rearing white abalone larvae; conduct daily water quality testing and husbandry tasks	SCMI, NOAA, NMFS, Cal Poly Pomona	Update in semi-annual report		
4	Assess and restore seagrass habitats in the Santa Monica Bay and nearshore environments to benefit marine ecosystems and improve coastal resilience	Survey the extent and condition of seagrasses in the Bay using R2Deep2, side-scan sonar, and SCUBA divers to inform the Comprehensive Monitoring Program	To survey the extent and condition of seagrasses in the Bay using R2Deep2, side-scan sonar, and SCUBA divers to inform the CMP and restoration activities	Complete at least one ROV or SCUBA survey in the Malibu eelgrass beds to inform the extent (area) of the beds (patches) and inform condition using SAV TAC-recommended protocols	Paua Marine Research Group, SCC	Update in semi-annual report	Restore 2-5 acres of seagrasses to the Bay to improve habitat functions and coastal resilience	6
		* Develop restoration methods for eelgrass (*Zostera pacifica*) in the Santa Monica Bay	To improve understanding and probability of success for offshore eelgrass restoration using transplant methods	Assist UCLA class in completing a final report studying historical eelgrass in the Santa Monica Bay, past and current stressors, and recommendations for appropriate restoration transplant methods; use recommendations to inform an Implementation and Monitoring Plan for the pilot restoration project (below)	Paua Marine Research Group, SCC	Implement ation and Monitoring Plan		

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		* Conduct pilot restoration project(s) of offshore eelgrass in the Bay	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 finalize methods and inform the application for a Scientific Collecting Permit for eelgrass restoration	Paua Marine Research Group, SCC	Acquire permits		
		* Evaluate restoration potential of seagrasses in the Bay, harbor, wetlands, and nearshore environments	To improve understanding and probability of success for seagrass restoration projects	Support CRI in initiating a genetic population research study of eelgrass (*Z. pacifica* targeted) in the region using microsatellite genotyping	CRI, UCLA	Update in semi-annual report		
		Contribute to better understanding of Ruppia maritima's habitat requirements and functions						
5	Assess and implement offshore artificial reefs to benefit marine ecosystems and provide socioeconomic benefits to people	* Implement reef restoration project off Palos Verdes	To restore rocky reef habitat lost to landslides activity using high relief rocky modules that will resist future burial	Pending approval of Prop. 12 funding by the State Coastal Conservancy, complete the environmental review and obtain permits to implement the rocky reef restoration project off Bunker Point	Vantuna Research Group, PV MSRP, NOAA	Completed permits	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	To assess nearshore coastal marine habitats using side-scan sonar and SCUBA to inform data gaps in the CMP and future restoration projects	Support Vantuna in development of baseline monitoring plan to inform restoration activities	Vantuna Research Group, PV MSRP, NOAA	Update in semi-annual report		
		Preliminary work regarding the benefits of dynamic revetments and nearshore reefs						
6	Restore coastal strand and foredune habitat to beaches and sandy shores to	Continue long-term monitoring of the Santa Monica Beach Restoration Pilot Project	Continue long-term monitoring to inform coastal resilience, ecosystem benefits, and adaptive management of the restoration area	Conduct physical and biological surveys at the frequency described in the Implementation and Monitoring Plan and produce an annual report	City of Santa Monica, State Parks, Audubon	Annual Report	Restore 10 acres of ecologically functioning coastal strand and dune habitat	6

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	improve coastal resilience	Conduct Phase 1 (outreach and planning) and Phase 2 (implementation) of the Malibu Living Shoreline Project	Restore 3 acres of beach and dune habitat to improve coastal resilience and ecosystem benefits and improve public engagement	Continue partnership development, outreach, and monitoring surveys; apply for restoration permits with partners and implement restoration project	City of Malibu, LACDBH, SCC	Annual Report	along Santa Monica Bay beaches to increase coastal resilience and as habitat for rare species	
		* Find funding for and implement another beach and bluff restoration project	Restore 3.5 acres of bluff, beach, and eelgrass habitat as part of a living shoreline pilot project; restore dune habitats in Manhattan Beach through iceplant removal and revegetation with native plants	Begin partnership development, permitting, and stakeholder coordination for living shoreline restoration project and Manhattan Beach project	City of LA, SCC, City of Manhattan Beach, City of Malibu, LACDBH	Update in semi-annual report		
		Support efforts to standardize sandy beach monitoring and a regional approach to restoration	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 communications, continue Healthy Beaches project in partnership with CRI, continue monitoring and data collection efforts	Beach Ecology Coalition, CRI, SCC, others	Update in semi-annual report		
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	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	LAWA, FOLD, SCC, CCC	Annual Report (LAX Dunes)	Restore 48 acres of LAX Dune system to improve native dune functions and provide habitat for rare species; Maintain larger	N/A
		Support LAWA in long-term maintenance and adaptive management of the 48-acre northern dune area	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	LAWA, LACC, RSABG, Psomas, CRC, IOEI	Annual Report (LAX Dunes)		

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		Engage underserved students and volunteers and inland communities	Recruit underserved students and volunteers, particularly from inland communities, to participate in hand-on stewardship and restoration at the LAX Dunes	Enhance volunteer program to increase recruitment of underserved students and volunteers from inland communities through amplified outreach, capacity building, and partner development	LAWA, SCC, LACC	Annual Report (LAX Dunes)	300-acre Preserve to benefit rare species and dune plants and wildlife	
		* Initiate planning for areas within the adjacent dunes, including baseline monitoring	Conduct baseline monitoring and develop recommendations for habitat management	Implement monitoring protocols to develop baseline data and restoration recommendations for adjacent 52-acre dune area	LAWA, LACC, RSABG, Psomas, CRC, IOEI, CRI	Annual Report (LAX Dunes)		
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	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	USFWS, CDFW, LAWA, City of LA, Friends of Ballona, PVPLC, others	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	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	PVPLC, State Parks, many others	Update in semi-annual report		
		* Initiate restoration of one bluff restoration project	To initiate one bluff restoration project in the Bay watersheds	Identify a potential bluff restoration site and begin project development and coordination with stakeholders; apply for permits, if necessary	SCC, City of LA, LADBH, USFWS	Update in semi-annual report		
		Initiate Pt. Dume stair replacement and bluff restoration project to benefit people and wildlife						
9	Implement Malibu Creek	Support lead agencies in efforts to complete the	Develop design and engineering plans to remove	Meet with lead agencies (State Parks, Army Corps) to identify	State Parks, Army Corps	Update in semi-	Complete implementation	5, 6, 7

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	Ecosystem Restoration Project (Rindge Dam and other barrier removals) to support ecosystem restoration	design and engineering plans for the Malibu Creek Ecosystem Restoration Project	Rindge Dam and additional barriers, to restore terrestrial and aquatic habitat connectivity and establish natural sediment transport regime	additional technical support and funding needs		annual report	of the Malibu Creek Ecosystem Restoration Project including the removal of barriers to improve stream and riparian habitats and to benefit the steelhead trout	
		Support lead agencies in identifying and obtaining funding for the project						
10	Remove additional barriers to support fish migration and ecosystem services	*Identify, prioritize, and acquire funding for barrier removal projects*					Remove key stream barriers to improve 3 miles of habitat and to benefit the steelhead trout	2, 6
		Implement priority barrier removal projects						
11	Restore urban streams, including daylighting culverted streams, removing cement channels, and restoring riparian habitats	*Identify additional urban streams for restoration and prioritize*					Restore at least two priority stream areas as defined by guiding documents such as the Ballona Creek Greenway Plan	2, 4, 5, 6
		Implement urban stream restoration projects						
12	Restore smaller coastal lagoons and other wetland types to increase wetland habitat area and	Complete the final post-restoration assessment of the Malibu Lagoon Restoration and Enhancement Project	To assess the condition of the restoration project for a five-year period and evaluate the data against set success criteria	Complete the collection, consolidation, and evaluation of five or more years of physical, chemical, and biological monitoring data and produce a Final Evaluation Report	State Parks	Final Report	Restore and increase wetland and transition habitat acreages for small lagoons such as Topanga	2, 5, 6

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	condition throughout the watershed	*Finalize restoration planning and permitting for Topanga Lagoon restoration project and initiate project*					Lagoon and other wetland systems to improve ecological functions	
		Complete land acquisition, feasibility analyses, and restoration design in coordination with bridge redevelopment for Trancas Lagoon						
		Conduct comprehensive monitoring of small lagoons in northern Bay to inform CMP and seek funding to continue Malibu Lagoon monitoring	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	Apply for 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	Moss Landing Marine Labs, CRI, State Parks, RCDSMM	Update in semi-annual report		
		Assess restoration options and priorities for other wetland types (e.g. freshwater systems)						
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	To support the lead agencies in completing and releasing the Final Environmental Impact Statement / Report and complete permitting	Continue to provide technical support and communication with the lead agencies to restore Ballona Wetlands	CDFW, Army Corps	Update in semi-annual report	Restore 577-acre Ballona Wetlands Ecological Reserve to improve wetland, transition, and upland habitats, functions, and services; Create	2, 5, 6, 7
		Continue community engagement and hand-restoration within the Reserve with FBW	To restore four acres of degraded wetland and transition habitat at the Ballona Wetlands Ecological Reserve through community restoration	Continue to conduct community restoration events and biological monitoring in accordance with permits; produce an annual report	CDFW, Friends of Ballona Wetlands	Annual Report		

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		Support lead agencies to identify and obtain restoration funding					public access trails and bike paths and encourage recreation and stewardship at the Ballona Wetlands Ecological Reserve	
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*					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						
		Identify additional locations for wildlife crossings						
15	Implement projects that improve understanding and/or enhance endangered and threatened species populations (e.g. habitat improvements for Western Snowy Plover, genetic banking)	*Support Southern California Steelhead Trout genetic banking study*					Improved extent and condition of habitats for rare species throughout the Bay and its watershed	2, 5, 6
		* Support restoration and monitoring activities to benefit California red legged frog populations	Improve riparian and stream habitats to support populations of California red legged frog	Pending approval of Prop. 12 funding by the State Coastal Conservancy, work with grantees to implement the red legged frog reintroduction project	SCC, State Parks, RCDSMM	Update in semi-annual report		
		* Support projects within western snowy plover critical habitat	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	LACDBH, City of Santa Monica, City of LA, City of Malibu, Audubon	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*					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	Facilitate and support 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 and the South Bay and North Bay Sub-Region Steering Committees	LA County Flood Control District	Update in semi-annual report		
		Facilitate other sources of State funding	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 keeping the SMBRC Governing Board and membership informed of progress made	municipalities	Update in semi-annual report		
17	Infiltrate, capture, and reuse stormwater and	Complete rain garden metal fate study with CRI	To assess the fate of sequestered or retained heavy metals in the Culver City Rain Garden	Complete the Masters thesis for the rain garden metal fate study in partnership with CRI	CRI	Completed Masters Thesis	Assist in achieving constituent percentage load	2, 4, 5, 6, 7

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	dry-weather runoff through green infrastructure, LID, and other multi-benefit projects and improve understanding of ecosystem services provided	Complete additional LID projects throughout the watershed	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 previously funded Prop. 84 projects: Culver Boulevard Realignment and Stormwater Infiltration/Retention Regional Project, Westwood Neighborhood Greenway Project, Santa Monica Bay Catch Basin Insert Project, and Ladera Park Water Quality Enhancement Project; pending approval by SCC, work with grantees to implement three new Prop. 12 projects: Monteith Park Storm Water Capture, Beach Cities Green Streets, and Paramount Ranch Storm Flow and Sediment Reduction	City of LA, other watershed cities, LA County, NPS	Update in semi-annual report	reduction targets for waterbodies in the Santa Monica Bay according to TMDL compliance timeline	
		Promote adoption of local ordinances to require projects in public right-of-way to mitigate stormwater						
		Seek funding and partnerships to conduct a cost-benefit analysis of LID projects						
18	Support installation and monitoring of	Continue quarterly monitoring of public sewage pumpout stations	To assess the condition of public sewage pumpout stations	Conduct quarterly monitoring of public sewage pumpout stations in Southern California harbors	TBF, CDBW, marina operators	Annual Report	Meet 86-100% annual average usability	4

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	additional sewage and bilge pumpout facilities in Southern California harbors	Update CA Vessel Waste Disposal Plan	To assess the existing sewage management infrastructure and need for additional sewage management resources in Southern California harbors for vessels	Use assessments and monitoring data to inform an update to the CA Vessel Waste Disposal Plan document	TBF, CDBW, SFEP	Updated plan document	percentage (based on analysis of equipment performance) for all publicly funded sewage pumpout stations throughout Southern California	
		Support installation of sewage pumpouts in Marina del Rey or King Harbor						
		Support installation of bilge pumpouts in Marina del Rey or King Harbor						
		Support efforts of neighboring harbors in installation of bilge and sewage pumpouts in southern California						
19	Support minimization of biological impacts of water intake and discharge from coastal power generation and desalination facilities, including public engagement and education	Educate and increase public support of the state-wide desalination policy	Support efforts by state regulatory agencies to achieve full implementation of the state-wide desalination policy	Monitor and inform SMBRC Governing Board, other stakeholders, and the general public on the status of state-wide desalination policy implementation by coastal power generation stations along the Santa Monica Bay coastline	SWRCB	Update in semi-annual report	Achieve no impacts from seawater intake of desalination facilities and ultimately no seawater intake	6, 7
		Support development of alternative and advanced mitigation measures to minimize seawater intake by desalination						
20	Support elimination of non-point pollution from	*Complete sewer connections of residential properties to the centralized wastewater*					Achieve level of performance and water quality	4, 5, 6, 7

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	onsite wastewater treatment systems	*treatment facility in the Malibu Civic Center area*					protection set 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	Continue to support efforts by the LARWQCB and cities and counties to achieve full implementation of the statewide policy for siting design, operation, and maintenance of OWTSs	Monitor and inform the SMBRC Governing Board membership, other stakeholders, and the general public on the progress made by the LARWQCB and cities and counties in implementation of the state-wide policy for siting design, operation, and maintenance of OWTSs	LARWQCB, watershed municipalities	Update in semi-annual report		
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	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 LACSD in expansion of wastewater recycling	LACSD	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	4, 6, 7
		Hyperion Treatment Plant to implement pilot project for recycled water	Support timely completion of Hyperion's pilot project	Monitor and inform the SMBRC Governing Board membership, other stakeholders, and the general public on the implementation progress of Hyperion's water recycling pilot project	LASAN	Update in semi-annual report		
		Support recycled wastewater efforts by Tapia Water Reclamation Facility and others through expansion of distribution system and regional partnerships						

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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	Reduce food waste being sent to landfills, compost food waste, and apply compost to urban gardens to grow food	Apply for funding to continue program, identify additional partners (schools and businesses), build an additional compost hub, and support existing compost hubs and program partners	Schools, Social Justice Learning Institute, Restaurants, LA Compost, LA Food Waste Group	Final 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
		Find funding for and implement an additional community composting hub in Santa Monica Bay watershed						
		Support expansion, outreach and implementation for residential and commercial organics collection and recycling						
23	Facilitate development and adoption of natural stream and riparian protection policies, including restoration	*Complete and adopt LA City stream protection policy*					Assist a minimum of one municipality in the watershed in the adoption of a stream protection policy	5, 6, 7
		Inform other regional ordinances						
24	Support the inclusion of coastal resilience through natural means and softscape	Attend stakeholder meetings for local cities LCP development / updates / implementation	Continue involvement in stakeholder meetings for local cities LCP development and implementation	Attend and participate in stakeholder meetings and workshops related to LCPs and promote the inclusion of natural "softscape" measures as a coastal resilience strategy	LACDBH, municipalities	Update in semi-annual report	Inclusion of climate change adaptation measures in at least half of the 12 local coastal	7

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	measures into local coastal plan updates	Opportunistically assist cities in the development of sea level rise vulnerability studies	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 "softscape" measures be included as adaptation strategies	USGS, municipalities	Update in semi-annual report	jurisdictions general plans (or equivalent) amendments	
		Use data collected from beach restoration "soft-scape" projects to inform and assist LCP development	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 "softscape" projects	LACDBH, municipalities	Update in semi-annual report		
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*					Improve access to the coast and enhance coastal experiences through linking and expanding the California Coastal Trail; develop and build partnerships that support the implementation of natural infrastructure throughout the Bay watersheds	N/A
		Support creation of increased public transit to and from beaches to enable access						
		Continue to advise BMPs for beaches that promote habitat condition improvements and support for unique species						
26	Participate in research, education, outreach, and	Conduct New Zealand Mudsnail surveys	Track the spread of NZMS in the Santa Monica Mountains and develop management recommendations for control	Conduct NZMS survey in Santa Monica Mountains and submit report	Heal the Bay	Biennial Report (2020)	Reduce impact of invasive species in critical habitats	5, 6, 7

#	CCMP Action	CCMP Next Step(s) / Project Activity Name	Objective(s)	Description / Milestone Summary	Partner(s)	Outputs / Deliver-ables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core
	policy on invasive species removal and control	Attend and participate in Invasive Species Council of California (ISCC) and regional meetings focused on management of invasive species	Increase public and agency awareness of invasive species issues	Attend one quarterly ISCC meeting and participate in a local California Invasive Species Action Week event	CDFW	Update in semi-annual report	throughout the Bay and its watershed as measured by the Comprehensive Monitoring Program	
		Conduct additional studies and outreach efforts to control impacts of, manage, or reduce the sale of invasive species						
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	To produce educational materials to increase awareness of boating best management practices to boaters	Produce and distribute Changing Tide newsletters, tide calendar, and boater kits	CCC, CDBW, SFEP	Newsletters, tide calendar	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
		Conduct outreach	To conduct outreach to increase awareness of boating best management practices to boaters	Conduct direct outreach to boating community at events, presentations, and trainings	CCC, CDBW	Summary table(s)		
		Manage Pumpout Nav app	Increase proper disposal of boater sewage	Contribute to and support app development and maintenance	CDBW, SFEP	Summary table		
		* Research public engagement metrics and specific engagement tools on reduction of pollutants to waterways	To optimize public engagement resources to increase impact of pollutant reduction strategies to waterways	Compile a literature review	CCC, CDBW	Update in semi-annual report		
		Find funding and implement fuel spill prevention tools and outreach						
		Support and develop marine debris reduction and cleanup efforts						

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28	Support efforts of disadvantaged communities to achieve healthy habitats, implement green infrastructure, and reduce pollution	*Support WMPs and EWMPs to prioritize projects that produce multi-benefits*					Develop communication strategies and identify barriers facing disadvantaged communities to achieve healthy habitats; promote participation of disadvantaged communities in restoration and pollution reduction projects	4, 6, 7
		Utilize the Ballona Creek Greenway Plan to identify parcels in disadvantaged communities for implementation						
		Support IRWMP and similar programs to preferentially invest in disadvantaged communities						
		Support research efforts to quantify multi-benefits of green spaces to communities						
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	To support Heal the Bay's efforts to standardize beach water quality monitoring and effectively disseminate the information to the public	Continue to update and maintain Heal the Bay's NowCast system and interactive website	Heal the Bay	Update in semi-annual report	Inform agency enforcement plans and long-term adaptive management of MPAs; achieve no elevated health risks associated with swimming and seafood consumption through source control, monitoring, and public notification	4, 6
		Update fish contamination advisory and associated public education materials based on new data						
		Maintain and enhance the existing seafood contamination education and enforcement program	Support and facilitate the continuation and enhancement of the existing seafood contamination education and enforcement program	Continue to participate in the Fish Contamination Education Collaborative	EPA Superfund, FCEC partners	Update in semi-annual report		
		Develop NowCast for freshwater systems to inform recreation (e.g. swimming holes)						

#	CCMP Action	CCMP Next Step(s) / Project Activity Name	Objective(s)	Description / Milestone Summary	Partner(s)	Outputs / Deliver-ables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core
30	Conduct community engagement, education, and inform policies related to water conservation and reuse to reduce water demand and reliance on imported sources	Link water conservation with outreach events and social media	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, outreach events, and TBF social media postings	LADWP, MWD, municipalities, many	Update in semi-annual report	Help reduce dependence of the Los Angeles region on imported water and lower the percentage of imported water use by water agencies	6
		Educate, engage communities, and provide resources that promote the importance of native plants	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	LADWP, municipalities, many	Update in semi-annual report		
		Support efforts by water agencies to promote water conservation and reuse including dissemination of materials	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	LADWP, municipalities, many	Update in semi-annual report		
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.*					Achieve Clean Bay Certified adoption by 100% of Santa Monica Bay Watershed cities; develop and distribute BMP materials to food service establishments and marine fuel docks	4
		Distribute restaurant engagement tools						
		* Develop funding to support the expansion of best management practices to incorporate other business sectors	To reduce pollution from businesses through implementation of best management practices	Apply for funding to support the expansion of best management practices to incorporate other business sectors	municipalities, businesses	Update in semi-annual report		

#	CCMP Action	CCMP Next Step(s) / Project Activity Name	Objective(s)	Description / Milestone Summary	Partner(s)	Outputs / Deliver-ables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core
3 2	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	To contribute to source reduction of single-use disposable items from food service establishments	Apply for funding to continue to implement ReThink Disposable LA	Clean Water Action/ Clean Water Fund, commercial businesses	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 as ReThink Disposable participants	4
		Support municipality bans of polystyrene, non-recyclable plastics, and single use items	To contribute to source reduction of polystyrene, non-recyclable plastics, and single use items	Participate in LA Polystyrene Coalition and submit letters of support to city councils for proposed bans; support efforts of Surfrider in ban establishment	municipalities, Surfrider Foundation, Heal the Bay, 5 Gyres, Algalita, OPC, NOA, USEPA, other stakeholders	Summary Table		
3 3	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	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	CRI	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	To publish a manuscript on the results of the Bay microplastics studies	Continue data collection, analyses, and evaluation to inform a future manuscript	CRI	Update in semi-annual report		
		Conduct additional studies to inform the transport, accumulation, and fate of microplastics in our marine and nearshore environments	To continue to collect data to inform the regional fate and transport model of microplastics in the nearshore marine environment	Apply for funding to continue data collection, analyses, and evaluation regarding microplastics fate and transport	CRI	Update in semi-annual report		
3 4	Improve understanding of emerging contaminants through monitoring and	*Conduct more studies to assess the effects of emerging contaminants on riparian and marine ecosystems and human health*					Reduce impacts of emerging contaminants on key habitats in the Bay and its watersheds	4

#	CCMP Action	CCMP Next Step(s) / Project Activity Name	Objective(s)	Description / Milestone Summary	Partner(s)	Outputs / Deliver-ables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core
	research to inform source control and reduce loading (e.g. fire retardants), especially in the context of climate change	*Improve analytical methodology and standardize monitoring of more emerging contaminants*						
		Enhance and expand existing educational programs and enforcement efforts to reduce the use and dispersal of emerging contaminants						
3 5	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*					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	To inform long-term water quality trends in the Bay's nearshore environment and contribute data to the Comprehensive Monitoring Program	Continue monthly maintenance, calibration, data downloads, and interactive data web portal for the SCCOOS Santa Monica Pier station	SCCOOS, LA Waterkeeper	Update in semi-annual report		
		Improve public outreach and education on HABs						
3 6	Monitor chemical, physical, and biological	Implement the Kelp Forest Hydrodynamic Study	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	UC Davis, CSU Northridge, UCLA IoES	Update in semi-annual report	Development and implementation of adaptation	6, 7

#	CCMP Action	CCMP Next Step(s) / Project Activity Name	Objective(s)	Description / Milestone Summary	Partner(s)	Outputs / Deliver-ables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core
	characteristics in the Bay to inform climate change impacts such as ocean acidification	Support OA sensor array maintenance, calibration, and data downloads in accordance with SOP	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 the water column, and characterize OAH levels and variability in the upper 100m of the Santa Monica Bay	LACSD, LARWQCB, SCCWRP	Update in semi-annual report	strategy addressing impacts of ocean acidification in the Bay	
		Support inclusion of climate change impacts into CMP, especially through new models and data	To include climate change into the Comprehensive Monitoring Program including new models and data	Continue drafting and release the final Comprehensive Monitoring Program including subsections on climate change for each major habitat in the Bay and its watershed	TAC, CRI, many others	Final CMP		
		Convene technical advisors to prioritize actions based on information from CMP	To prioritize monitoring and data collection needs based on the revised CMP for major habitats in the Bay and implement the prioritized monitoring protocols	Once revised CMP is released, prioritize data gaps by major habitat with support of scientific advisors, acquire funding, and implement monitoring protocols	TAC	Update in semi-annual report		
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	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	TAC	Final Protocol	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						
38	Monitor and improve	*Support study recommendations and*					Implementation of the	6

#	CCMP Action	CCMP Next Step(s) / Project Activity Name	Objective(s)	Description / Milestone Summary	Partner(s)	Outputs / Deliver-ables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core
	understanding of rocky intertidal habitats to inform restoration actions	*outreach efforts for improved protection*					Comprehensive Monitoring Program to achieve a better understanding of the extent and condition of habitats in the Santa Monica Bay and its watershed	
		Develop mitigation measures for rocky intertidal habitats, including restoration and enhancement of physical structure						
39	Monitor and inform effective management of Marine Protected Areas, Fishery Management Plans, and local fisheries for recreational and commercially important species	Support MDRA in their implementation of the youth and veteran fishing program	Provide disadvantaged youth and veterans the opportunity to experience nature, boating, and fishing and encourage sustainable lifestyles	Support MDRA by soliciting volunteers for boat trips as needed	Marina del Rey Anglers, TBF	Update in semi-annual report	Inform agency enforcement plans and long-term adaptive management of MPAs, assist with fishery related public health advisories	6
		Support MDRA in the completion of a halibut FMP						
		Continue opportunistic aerial surveys to track boating and vessel activity	Continue to track ocean vessels and fishing trends within the South Coast MPA Network	Conduct quarterly aerial surveys of the coast from Point Conception to the Mexican Border recording boat type, location, and activity (if funded or donated by LightHawk)	Lighthawk	Update in semi-annual report		
		Conduct MPA Watch to monitor and inform use of MPAs in the Bay	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, and share data with local enforcement agencies	Heal the Bay, LA MPA Collaborative	Update in semi-annual report		
40	Research and inform best management and pollution reduction	Identify partners and identify funding sources for long-term monitoring efforts for LID and water conservation efforts	Implement the SMB Comprehensive Monitoring Program	Work with SWRCB to develop and execute grant(s) to implement appropriate tasks in the CMP	LA County, municipalities	Update in semi-annual report	Assist in achieving constituent percentage load reduction	4

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#	CCMP Action	CCMP Next Step(s) / Project Activity Name	Objective(s)	Description / Milestone Summary	Partner(s)	Outputs / Deliver-ables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core
	practices to address non-point source pollution and facilitate reduction	*Implement monitoring programs for long-term monitoring and to inform effectiveness of LID/BMP implementation projects*					targets for waterbodies in the Santa Monica Bay according to TMDL compliance timeline	
4 1	Facilitate research, monitoring, and assessments that inform more accurate waste load allocations and development of new water, sediment, and biological objectives	*Conduct or support monitoring and technical studies to characterize pollutant loading, impacts and effectiveness of pollutant control measures*					Assist in achieving constituent percentage load reduction targets for waterbodies in the Santa Monica Bay according to TMDL compliance timeline	1, 4
		Conduct or support data collection for water quality objective development						
4 2	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*					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	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	SCC, local cities, CRI, others	Update in semi-annual report		
		Identify projects or programs that will prioritize carbon sequestration and resilience						

#	CCMP Action	CCMP Next Step(s) / Project Activity Name	Objective(s)	Description / Milestone Summary	Partner(s)	Outputs / Deliver-ables	Long-Term Environmental Result(s) / Outcome(s)	CWA Core
		Explore innovative concepts like sinking whale carcasses as potential opportunities for carbon sinks						
43	Implement the County-wide Safe Clean Water Program to support stormwater pollution control projects (if approved by voters in 2018)	Support passage of Measure W, the Safe Clean Water parcel tax	To achieve the passage of Measure W, the Safe Clean Water parcel tax to improve stormwater management in urban areas	Support the efforts of agencies to fund stormwater improvement and LID projects throughout the watershed	many	Approved measure	Assist in achieving constituent percentage load reduction targets for waterbodies in the Santa Monica Bay according to TMDL compliance timeline	4, 6, 7
		Participate in advisory board and support implementation of projects from the new funding mechanism						
44	Support the development and implementation of a comprehensive regional sediment management plan for restoring natural hydrological functions of river systems and mitigating impacts from climate change	*Convene meetings to initiate program development and identify opportunities*					Complete and implement a comprehensive regional sediment management plan to restore natural functions where possible and mitigate impacts of climate change	6, 7
		Develop plans and/or update existing plans to promote sediment transport and deposition along the coast based on hydrodynamic modeling and analyses						
		Build capacity and conduct pilot projects to inform future actions and advance program development/design						

**** CWA Core** – Clean Water Act Core Elements are as follows per the EPA: (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.*

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IV. ESTIMATED FY20 BUDGET

Section IV, Estimated FY20 Budget, will be included in the final version of the Work Plan, but is not available for the first draft.

LIST OF APPENDICES

Appendix A: Completed projects table from FY19.

Appendix B: Santa Monica Bay National Estuary Program Staffing (future: will be in the April draft).

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Appendix A. Table of Completed Projects in FY19.

Project Name	Objective	Brief Project Description	Lead	Partners	Major Accomplishments	Key Deliverables	* EPA 320 Funds	Long-Term Environmental Result(s) / Outcome(s)	CWA Core **
Malibu Lagoon Restoration and Enhancement Long-Term Monitoring Program	To assess the condition of the restoration project for a five-year period and evaluate the data against set success criteria	The Malibu Lagoon Restoration and Enhancement Project was completed in March 2013. This project collected, compiled, and evaluated more than five years of physical, chemical, and biological monitoring data and produced Annual Reports (5) and a Final Evaluation Report (2019). Data included water and sediment quality, vertical profiles, channel cross-sections, CRAM, vegetation, SAV, birds, invertebrates, fish, and photo point.	TBF	State Parks, RCDSMM, Cooper Ecological	Overarching trends for the restored area of the lagoon indicate that lowering the lagoon elevation, creating a wider channel directed towards the incoming tide, orienting channel configurations in line with prevailing wind patterns, and removing the pinch points have led to an increase in circulation both in an open and closed berm lagoon condition. Biological communities have continued to establish over time, with California Rapid Assessment Method surveys indicating condition improvement over time and as compared to pre-restoration data. All success criteria are being met or exceeded.	Five (5) Annual Reports; Final Assessment Report (Summer 2019)	$ -	Enhanced and increased wetland habitat; enhanced adjacent transition habitats; improved water quality and circulation and other ecological and ecosystem functions	5, 6
Coastal Dune Community Stewardship Project	To continue and expand efforts to engage the community with educational opportunities and ongoing public stewardship of the LAX Dunes and an emphasis on opportunities for disadvantaged communities	This project, in partnership with Friends of LAX Dunes, hosted educational hands-on restoration events at a minimum frequency of monthly for a three-year period. This unique opportunity offered adults and children to visit, learn, and help restore a private expanse of dune habitat in southern California – the largest remnant coastal dune system in the region.	TBF	LAWA, FOLD, SCC	Over the 3-year grant period, 49 community restoration events were held during which 1,594 volunteers contributed 4,829 hours towards removing invasive vegetation and restoring dune habitat. The project recruited volunteers, including a large number of students, from inland and underserved communities. The project also included an educational session associated with each event about the history of the site and dunes in southern California, their ecological importance, and information about rare dune species.	Two (2) Annual Reports; Final Report (Summer 2019)	$ -	1) Restore 48 acres of LAX Dune system and maintain larger 300-acre Preserve to improve native dune functions and provide habitat for rare species; 2) Promote participation of disadvantaged communities in restoration, greening, and pollution reduction projects	6

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Appendix A. Table of Completed Projects in FY19.

Project Name	Objective	Brief Project Description	Lead	Partners	Major Accomplishments	Key Deliverables	* EPA 320 Funds	Long-Term Environmental Result(s) / Outcome(s)	CWA Core **
1-Year Agreement for Consultant Services Related to Improvements in the LAX Dunes	To continue ongoing restoration efforts in the Coastal Dunes Improvement Project area of the LAX Dunes and to collect and evaluate biological monitoring data	Activities included as part of this 1-Year Agreement focused on habitat maintenance and recommendations for the Coastal Dunes Improvement Project (CDIP) area in compliance with CDP No. 5-12-263. Restoration efforts were focused in the 6-acre foredune area where roads were previously removed by LAWA. Additionally, biological monitoring was conducted on the 48-acre northern dune area.	TBF	LAWA, FOLD, LACC, RSABG, Psomas	TBF and their scientific partners conducted a site-wide comprehensive vegetation assessment for the northern 48-acre area of the dunes. This assessment informed the monitoring plan as well as the recommendations for invasive vegetation removal and native revegetation. Additionally, 18 community restoration events were held during this time period, including 678 volunteers contributing over 2,000 hours towards removing over 700 bags of non-native vegetation. Los Angeles Conservation Corp crews weed whacked an additional 7.8 acres of non-native brome grass and removed nearly one acre of iceplant.	Ecological Monitoring Report; Annual Progress Report	$ -	Restore 48 acres of LAX Dune system and maintain larger 300-acre Preserve to improve native dune functions and provide habitat for rare species	6
Wetland Program Development Grant - Wetland Data Consolidation and Management	To continue to build towards consistent and standardized approaches to wetland monitoring across California	Monitoring and assessment strategies developed by the State of California and USEPA universally call for coordinated and consistent approaches to monitoring and assessment. This program continued efforts to develop standardized intensive (i.e., Level 3) assessment methods and a framework for their application for coastal wetland systems in California. This program consolidated regional datasets with varying sampling designs and frequencies, determined their comparability, and identified recommendations for	SMBRA, TBF	TRNERR, CSULB, SCCWRP, California Wetland Monitoring Workgroup	Intensive methods provide information on ecological function, are more diagnostic of restoration performance and regulatory compliance, and are important for the validation of rapid assessment methods. This program took significant strides in consolidating regional datasets with a series of complex analyses to inform a revision of the California Wetland Monitoring Manual. Outreach included stakeholder meetings, conferences, and coordination with other statewide wetland monitoring groups. Several manuscripts are currently in development with the results of the data analyses.	California Wetland Monitoring Manual (V2, October 2019); Final Data Consolidation Report (October 2019)	$ -	Enhanced statewide coordination and standardization of coastal wetland monitoring and assessment; technical support for wetland restoration projects in California	5, 6, 7

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Project Name	Objective	Brief Project Description	Lead	Partners	Major Accomplishments	Key Deliverables	* EPA 320 Funds	Long-Term Environmental Result(s) / Outcome(s)	CWA Core **
		consistency across future wetland monitoring programs.							
Southern California Green Abalone Restoration	Reintroduce and restore abalone	The Green Abalone Restoration project began in 2015 to implement green abalone recovery within restored kelp forest sites off the Palos Verdes Peninsula. This four-year grant later included funding for the construction of an abalone laboratory and aquaculture facility located at Southern California Marine Institute and initial red abalone outplanting trials that are serving as proxy for future endangered white abalone recovery.	TBF	NOAA, SCMI CDFW,	Completed construction of two aquaculture laboratories at SCMI, 15 captive spawning trials, 12 wild green abalone deck spawning experiments, 1 wild red abalone deck spawn, collection of wild green and wild red broodstock, outplanted 827 green juvenile abalone, 2,400 juvenile red abalone outplanted over two events	Final Grant Report to NOAA NMFS (Contract ends Sept 2019)	$ -	Facilitate endangered white abalone recovery efforts; Provide a space for continued research on rearing and spawning techniques for captive bred abalone	6, 7
University Park Neighborhood Rain Gardens (Prop 84)	Increase groundwater recharge and decrease polluted runoff to Ballona Creek	The project installed rain gardens in the University Park area of Los Angeles near USC, to capture, treat and infiltrate all dry- and some wet-weather runoff (including trash) from a 209-acre drainage in the Ballona Creek watershed.	City of LA	SMBRC, SWRCB	Installation of 35 rain gardens on public parkways in a highly urbanized area of Los Angeles. Reduced impermeable surface. Provided local wildlife habitat. Enhanced green space.	Construction Plans, Completed Construction, Final Report	$ -	Help comply with Ballona Creek TMDLs for metals, bacteria, and trash; address diffuse, non-point sources of pollution	2, 4, 6, 7
Milton Street Park (Prop 84)	Increase groundwater recharge and decrease polluted runoff to Ballona Creek	The project installed Vegetated Stormwater Curb Extensions (VSCEs) on both sides of Milton Street in Los Angeles, to capture, treat, and infiltrate dry- and some wet-weather runoff in the Ballona Creek watershed.	MRCA	City of Los Angeles, County of Los Angeles, SWRCB, SMBRC	Installed 14 Vegetated Stormwater Curb Extensions (VSCEs) to both sides of Milton Street, adjacent to Ballona Creek. Planted native shade trees and a variety of shrubs. Reduced impermeable surface. Improved pedestrian and bicycle safety.	Construction Plans, Completed Construction, Final Report	$ -	Help comply with Ballona Creek TMDLs for metals, bacteria, and trash; address diffuse, non-point sources of pollution	2, 4, 6, 7

Appendix A. Table of Completed Projects in FY19.

Project Name	Objective	Brief Project Description	Lead	Partners	Major Accomplishments	Key Deliverables	* EPA 320 Funds	Long-Term Environmental Result(s) / Outcome(s)	CWA Core **
Boater Education Program	To assess the condition of public sewage pumpout stations and increase boater awareness and implementation of boating BMPs.	A multi-faceted program designed to engage the Southern California boating community to reduce and eliminate boating-related ocean pollution.	TBF	CDBW, CCC, SFEP, marina operators	This ongoing program completed its CVA 18 grant in April 2019. This includes 4 rounds of pumpout monitoring, 4 Dockwalker trainings, outreach at 5 boating events, 5 clean boating presentations, update and print of Southern California Boater's Guide 5th edition, publishing 3 Changing Tide newsletters and implementation of Honey Pot Day (mobile sewage pumpout) program.	Newsletters, Tide Calendars, Annual Pumpout Report	$ -	Improved water quality in nearshore areas through increasing boater awareness and implementation of boating best management practices, including reducing discharges of boat pollutants	4, 6
Table-to Farm	Reduce food waste being sent to landfills, compost food waste, and apply compost to urban gardens to grow food.	To better address food waste and greenhouse gas emissions from landfills and transportation due to hauling waste, TBF is working with restaurants and Environmental Charter Schools. Restaurants recycle food waste at schools, where students produce compost which is used to amend garden soil to grow local produce.	Schools, restaurants	TBF	This project built a third community compost bin for food waste and secured restaurant partners to participate in the program.	Final Report	$ -	Reduce food waste being sent to landfills and improve air quality; increase awareness of food waste issues, compost, and climate change and provide fresh produce to food desert communities; improve soil quality for community supported agriculture and carbon sequestration	4

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Appendix A. Table of Completed Projects in FY19.

Project Name	Objective	Brief Project Description	Lead	Partners	Major Accomplishments	Key Deliverables	* EPA 320 Funds	Long-Term Environmental Result(s) / Outcome(s)	CWA Core **
ReThink Disposable LA	Source reduction of single-use disposable items from food service establishments.	Partner with Clean Water Action / Clean Water Fund to implement the ReThink Disposable program in Los Angeles. Work with local food establishments and provide technical assistance to prevent excess waste.	TBF	Clean Water Action / Clean Water Fund, restaurants	Source reduction at four restaurants resulting in 247,570 pieces of product reduced, 2,637 lbs of waste reduced, and $8,017 in restaurant savings, annually.	4 Final Reports, 3 Case Studies, 2 Video Testimonials	$ -	Source reduction of litter prone trash; support bans on single use disposable plastics	4

** **EPA 320 Funds** – At the time of the first draft of this Work Plan, only one quarter of FY19 has been closed, so estimates are likely to be inaccurate. A final estimate by project will be included in the Work Plan distributed to the Governing Board at the April 2019 meeting.*

*** **CWA Core** – Clean Water Act Core Elements are as follows per the EPA: (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.*

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