

Santa Monica Bay Restoration Commission

Bay Restoration Plan Update

2008

Introduction

Welcome to the Santa Monica Bay Restoration Commission's Bay Restoration Plan (Plan). This document represents the hopes and aspirations of the many stakeholders of the Santa Monica Bay. In it, the goals of the collaborative organization are laid out and endorsed by the SMBRC's Governing Board, the California Environmental Protection Agency and the United States Environmental Protection Agency (USEPA). These goals and the objectives that follow guide SMBRC staff and partners in daily decisions about what to work on, what projects to fund, and where to devote time, energy and resources.

Our mission is to restore and enhance the Santa Monica Bay through actions and partnerships that improve water quality, conserve and rehabilitate natural resources, and protect the bay's benefits and values.

The Plan begins in Part I with a brief history of the Bay and its watershed, which places it in a geographic and human context from which to view the restoration potential of the Bay. In Part II there is a review of the ecological functions that are to be protected and restored and the relationship of those functions to the desired uses, and the types of actions needed to preserve those resources.. In Part III we specify the priority issues that we must address in order to protect and restore the Bay and its watershed, as well as the goals and objectives that will get us there.

The Santa Monica Bay National Estuary Program

The Santa Monica Bay Restoration Commission is a National Estuary Program (NEP) of the USEPA. The NEP was established by Congress in 1987 to improve the quality of estuaries of national importance and the Santa Monica Bay NEP was established in 1988. The Clean Water Act Section 320 directs EPA to develop plans for attaining or maintaining water quality in an estuary. This includes protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife; protection of public water supplies; preservation of recreational activities in and on the water; and control of point and nonpoint sources of pollution to supplement existing controls as needed. Each NEP establishes a Comprehensive Conservation and Management Plan (our Bay Restoration Plan) to meet the goals of the Clean Water Act.

PART I:

Santa Monica Bay, a Short History of Human Presence in the Watershed

(Text is under development; draft can be provided upon request)

PART II: Ecological Functions and Resource Uses

Santa Monica Bay and its watershed naturally provide many ecological functions that living humans depend upon. Main ecological functions of the Bay include water purification (i.e. water quality in streams, at beaches and in the Bay), water and sediment transport, flood storage, water supply, wildlife habitat, and fish and aquatic life habitat. When the Bay and its watershed is able to perform these functions, it is beneficial to people who can swim at clean beaches, consume healthful seafood, recreate at parks, observe abundant wildlife both above and below the waters of the Bay and be protected from flooding.

The specific actions we take to restore and protect ecological functions, like the ecosystem itself, are interrelated (see www.smbrc.org/bayweb). Some general goals will contribute to restoring and protecting multiple ecological functions and therefore to multiple human uses. The table below lists ecological functions (rows) and corresponding goals (columns) to determine which will provide the greatest benefit to our many stakeholders. The goals with more "x" marks will contribute the greatest improvement to the ecological functions of Santa Monica Bay. The table indicates that the ecological functions of the Bay benefit most from the SMBRC's efforts to increase pervious surfaces and restore and protect wetlands and existing habitats. In many situations, increasing native vegetation, addressing point- and non-point-source pollution and restoring natural streams are equally important goals that can restore numerous ecological functions.

	Increase pervious surfaces	Stream Restoration (including remove barriers)	Increase native vegetation	Restore wetland functions	Treat or eliminate point source discharges	Protect existing habitats	Reduce Non-point Source Pollution
Improve water quality in streams	X			X	X	X	X
Improve water quality at beaches	X			X	X	X	X
Improve water quality in the Bay	X			X	X	X	
Flood storage	X	X		X		X	X
Provide fish habitat (physical)		X		X		X	X
Provide wildlife habitat	X		X	X		X	
Transport water and sediment	X	X		X		X	X
Water supply	X	X	X	X	X	X	

The actions we take to restore and protect ecological functions are interconnected and form a web of goals and benefits. The following section lists the Plan's Priority Issues, Goals and Objectives for restoring the Bay. When certain goals are ultimately met, it is likely that more than one Priority Issue will have been addressed. There are many benefits to such an approach. For example, reducing storm water pollution will also improve the habitat and vitality of aquatic life, wetlands, as well as public health. This comprehensive approach is critical to addressing multiple priority

issues that affect the Bay and the people that live within its watershed. A sound, ecologically functioning Santa Monica Bay will lead to more access to its public beaches, parks and waterways as well as decreased human health risks associated with poor water quality and urban pollution, which will in turn help the economy through tourism and fishing.

PART III: Goals and Objectives

The goals and objectives specified in this section are grouped under three priority issues consistent with our mission to "improve water quality, conserve and rehabilitate natural resources, and protect the bay's benefits and values". It is important to point out that these three priority issues crosscut in many ways: If we consider the Bay's benefits and values to be the uses that humans make of it, e.g. recreation, fish and seafood for eating, and flood mitigation, then it is clear that the last issue (protecting those uses) depends on the first two (improving water quality and conserving and rehabilitating natural resources).

Priority Issue: Water Quality

Improve Water Quality: Goals and Objectives

Goal # 1: Treat or eliminate remaining point source discharges

Since the passage of the 1972 Clean Water Act, most pollution related water efforts have focused on point-source pollution. Such pollution generally originates from millions of gallons of wastewater discharged from single identifiable sources such as industrial pipes and municipal sewage treatment facilities. This pollution often flows directly into rivers, streams and the ocean. Sources of wastewater may include, but are not limited to, infiltration and inflow, commercial operations, agricultural areas and industrial facilities.

Objective: Comply with TMDLs adopted for 303(d) listed waterbodies in the Santa Monica Bay watershed.

Milestone: Complete development and adoption of all TMDLs (Table 1) scheduled for waterbodies in the Santa Monica Bay watershed by 2015.

Milestone: Implement and achieve compliance with adopted TMDLs (Table 1) for waterbodies in the Santa Monica Bay watershed

Table 1 Summary of TMDLs adopted or scheduled in the Santa Monica Bay watershed

Waterbody(s)	Pollutant	Effective Date	Compliance Target	Milestones
Santa Monica Bay - Dry Weather	Bacteria	July-15-2003	Allowable exceedance days and rolling 30-day geometric mean targets during summer dry weather (April 1 to Oct 31) and winter dry weather (Nov. 1 to March 31)	<ul style="list-style-type: none"> - Comply with summer dry-weather target by 7/15/06 - Comply with winter dry weather target by 7/15/09
Santa Monica Bay - Wet Weather	Bacteria	July-15-2003	<ul style="list-style-type: none"> - Cumulative percentage reduction from the total exceedance-day reductions required for each jurisdictional group - Final implementation targets in terms of allowable wet-weather exceedance days at each individual beach. In addition, geometric mean targets for each individual beach location [1] 	<ul style="list-style-type: none"> - Achieve 25% reduction by 7/15/13 - Achieve a 50% reductions by 7/15/18 - Achieve final implementation target by 7/15/21
Santa Monica Bay	Historical pesticides	Targeted for 2008-2009		
Santa Monica Bay	Marine Debris	Targeted for 2009-2010		
Santa Monica Bay	Chlordane	Targeted for 2010-2011		
Santa Monica Bay	Metals	Targeted for 2011-2012		
Ballona Creek and wetland	Trash	Aug-8-2002	Percent reduction from baseline load	<ul style="list-style-type: none"> - Achieve 50% reduction by 9/30/09 - Achieve zero trash by 9/30/15
Ballona Creek Estuary	Toxics	Jan-11-2006	Total percentage of drainage area meets waste load allocation (WLA) for sediment [2]	<ul style="list-style-type: none"> - Finalize implementation plan by 7/11/11 - 25% of area meets WLA by 1/11/13 - 50% of area meets WLA by 1/11/15 - 75% of area meets WLA by 1/11/17 - 100% of area meets WLA by 1/11/21
Ballona Creek	Metals	Jan-11-2006	Percentage of total drainage area meets waste load allocation (WLA) for sediment [2]	<ul style="list-style-type: none"> - Finalize implementation plan by 7/11/10 - 50% of area meets dry-weather WLA and 25% area meets wet-weather WLA by 1/11/12 - 100% area meets dry-weather WLA and 50% meets wet-weather WLA by 1/11/16 - 100% of area meets both dry and wet-weather WLAs by 1/11/21
Ballona Creek, Estuary, Sepulveda Channel	Bacteria	April-27-2007	Allowable exceedance days and rolling 30-day geometric mean targets for summer dry-weather, winter dry-weather, and wet weather	<ul style="list-style-type: none"> - Comply with the summer and winter dry-weather targets by 2013 - Comply with the wet-weather targets by 2017.
Ballona Wetland	Exotic Vegetation	Targeted for 2010-2011		

Ballona Wetland	Habitat Alteration, Hydromodification	Targeted for 2010-2011		
Marina del Rey Harbor, Mother's Beach, and Back Basins	Bacteria	Mar-18-2004	Allowable exceedance days and rolling 30-day geometric mean targets during summer (Apr 1 to Oct 31), winter dry-weather (Nov 1 to Mar 31), and wet-weather.	<ul style="list-style-type: none"> - Comply with summer and winter dry-weather targets by 3/18/07 - Comply with wet-weather target by 3/18/14, no later than 3/24/22 if an Integrated Water Resources Approach is implemented
Marina del Rey	Toxics	May-22-2006	Percentage of total drainage areas meets WLA for sediment [1][2].	<ul style="list-style-type: none"> - Finalize implementation plan by 9/22/11 - 25% area meets WLA by 3/22/13 - 50% area meets WLA by 3/22/15 - 75% area meets WLA by 3/22/17 - 100 % area meets WLA by 3/22/21
Malibu Creek	Bacteria	Jan-24-2006	Allowable days of exceedances of the single sample bacteria limits and the 30-day geometric mean limit during the summer dry-weather (Apr 1 - Oct 31), winter dry-weather (Nov 1 - Mar 31) and wet weather.	<ul style="list-style-type: none"> - Comply with summer dry-weather targets by 1/24/09 - Comply with winter dry-weather targets by 1/24/12 - Comply with wet weather targets by 1/24/16.
Malibu Creek	Trash	Adopted on May-1-2008, effective date is pending	Percentage reduction from baseline WLA	<ul style="list-style-type: none"> - Achieve 20% reduction in 4 years - Achieve 40% reduction in 5 years - Achieve 60% reduction in 6 years; - Achieve 80% reduction in 7 years; - Achieve 100% reduction in 8 years.
Malibu Creek	Metals	Targeted for 2008-2009		
Malibu Creek	Nutrients	March-21-03 (EPA); targeted for Jan. 2010 (LARWQCB)		
Malibu Lagoon	Benthic Community Effects	Targeted for 2010-2011		

[1] If implementing an integrated approach.

[2] Milestones apply to MS4 and Caltrans only.

Objective: Decrease nutrient loads to Malibu Creek, from both point and nonpoint sources, to eliminate dissolved oxygen (DO) and algal impairments.

Milestone: Implement the existing Malibu Creek nutrient TMDL and set and comply with a new, lower nitrogen limit on discharges

Objective: Upgrade wastewater treatment at POTWs to increase recycled water use to eventually eliminate discharges

Milestone: Recycle 50 MGD wastewater per plant by 2015 and 95% of wastewater by 2018 at both Hyperion and the Joint Water Pollution Control Plants

Milestone: Find new or more uses for biosolids from treatment plants and eventually achieve 100% beneficial use of biosolids, preferably as close to the origin of biosolids as possible

Objective: Eliminate discharge of heated cooling water from coastal power plants. Require switch to dry-cooling or other methods as a permit condition of facility upgrades

Milestone: Establish a state-wide policy to discontinue the use of once-through cooling by 2009.

Milestone: Phase out the use of once-through cooling by 2018

Objective: Eliminate all illegal discharges to Areas of Special Biological Significance (ASBS)

Milestone: Complete an inventory of illegal discharges to ASBS in the Bay by 2010

Milestone: Eliminate all identified illegal discharges to ASBS in the Bay by 2018

Goal # 2: Reduce nonpoint source pollutants

Nonpoint source pollution (NPS) does not come from one, localized, identifiable source, but rather from many unidentifiable sources. Examples of NPS in the Santa Monica Bay watershed include runoff of substances like oil, fertilizers, and lawn related chemicals. After heavy rains the water moves over and through the ground where it picks up natural and human-made pollutants. Many of these pollutants are eventually deposited into the Santa Monica Bay and its surrounding wetlands. Other sources of NPS include discharge of waste from boating activities, septic systems (OSWTs), and aerial deposition.

Objective: Increase pervious surfaces and decrease impervious surfaces by supporting green infrastructure

Milestone: Incorporate green infrastructure elements, e.g. biofiltration and rain gardens, into the standard street design and maintenance practices of cities and L.A. County by 2010

Milestone: Develop model green street and LID ordinances by 2009. Adopt green street and LID ordinances by at least five cities by 2011.

Milestone: Revise to municipal codes so that runoff maybe directed to pervious surfaces by 2011.

Milestone: Implement green infrastructure pilot projects, eg. green street projects, property retrofits, and treatment wetlands, that lead to standardization of practices by municipalities/agencies (one project completed every two years)

Objective: Support restrictions on disposable plastics

Milestone: Adopt bans on plastic fast-food containers and plastic bags at all retail stores by cities and L.A. County by 2010. Target ban on polystyrene first.

Objective: Work with Regional Water Quality Control Board (RWQCB) to enforce NPS regulations

Milestone: Complete an inventory of re-development permits since 2005 with ground-truthing to determine if developments met SUSMP requirements, by 2011

Milestone: Upgrade SUSMP provisions to include performance-based design criteria by 2010

Objective: Develop a regional funding mechanism for storm water quality improvement

Milestone: Complete a feasibility study of a county-wide property assessment for storm water quality improvement by 2009

Milestone: Identify other financing mechanisms to provide local governments with funds for storm water programs.

Milestone: Participate in county efforts to implement a funding mechanism, eg. support technical or policy advisory groups or provide data

Objective: Reduce aerial deposition of stormwater pollutants to the watershed

Milestone: Work with SWRCB and California Air Resources Board (CARB) to develop further studies (e.g. estimate airborne pollutant loading from LAX and other area-specific sources).

Milestone: Promote coordination and collaboration between SWRCB and CARB to establish airborne pollutant loading reduction policies, including reduction goals.

Objective: Reduce NPS pollutants from commercial and recreational boating activities

Milestone: Work with marinas to adopt sewage management plans by 2012

Milestone: Recycle of all used oils by 2015

Milestone: Install of bilge pumpouts at marinas that still do not have them by 2015

Objective: Eliminate nonpoint pollution from on-site wastewater treatment system (OSWTs)

Milestone: Establish OSWT maintenance districts to fund and monitor periodic maintenance and upgrades and permit compliance.

Milestone: Eliminate OSWTs in the Malibu Civic Center, and Malibu Colony. Upgrade OSWT at Serra Retreat. Construct package plant for civic center with advanced tertiary treatment and water recycling capability.

Milestone: Achieve full compliance of waste discharge requirements (WDRs) issued by the LARWQCB for all multi-family and commercial establishments in northern Santa Monica Bay watershed

Milestone: Establish a comprehensive permitting program by local agencies (county and cities) for operation, inspection, and monitoring of OSWT

Milestone: Implement more stringent requirements in environmentally sensitive areas for the installation and operation of wastewater management systems

Milestone: Upgrade all OSWT within 600 feet of waters impaired for nutrients and/or fecal bacteria to advanced treatment (denitrification and/or disinfection).

Objective: Assist cities in enforcing residential and commercial runoff bans

Milestone: Enhance/improve information exchange among city staff through various mechanisms such as workshops

Milestone: Implement regular audits by municipalities of their watering regime and equipment starting in 2010

Milestone: Encourage enforcement of dry-weather runoff prohibition by local cities.

Milestone: Revisit LAMC Building Regulations on gutter and site drainage to remove requirement that runoff be directed toward impervious surfaces and ultimately the street.

Milestone: Expand criteria for restaurant certification program, and achieve participation by all watershed municipalities in the restaurant certification program by 2011

Objective: Reduce trash in storm drain systems

Milestone: Analyze trash cans placement and pick-up in selected high-trash areas of the watershed and work with municipalities to improve where necessary, by 2012

Milestone: Install cigarette butt receptacles in front of all restaurants and bars in the south bay cities (MB, HB, RB) and West Hollywood

Milestone: Institutionalize SMBRC participation in Coastal Cleanup Day by 2009, through budgeting and staff duties, work to promote and facilitate inland cleanups as part of Coastal Cleanup Day efforts

Objective: Promote pay system for water use

Milestone: Provide model ordinances for the use of economic incentives, such as surcharges, to Santa Monica Bay water districts.

Milestone: Identify excessive water use entities

Objective: Promote Native Plantings

Milestone: Fund 10 acres of bluff and dune plant restoration at sensitive sites in the Bay by 2013.

Milestone: Restore riparian vegetation in Stone Creek by 2010.

Milestone: Promote new ordinance or requirements for planting of native vegetations in landscaping on public properties

Goal # 3: Address Potential Impacts of Emerging Contaminants

Managers of water quality have gained new understanding over the last decade about sources of many pollutants such as copper, mercury, oil and grease. Even so, many new commercial products enter the market place at a rapid pace. Unfortunately the environmental risk of many of these ingredients is not well known. The pollutants of concern for which we do not have historical information on and are not captured within our current regulatory water quality framework are known as emerging contaminants. These include, but are not limited to, polybrominated diphenyl ethers (PBDEs), which are contained in consumer products such as flame retardants, perfluorinated chemicals that are used as non-stick or stain-resistant coatings.

Objective: Reduce loading of emerging contaminants in waterways

Milestone: Enhance existing education program to reduce household disposal of pharmaceutical products into the sewer system. Promote an extended producer responsibility (e.g. pharmaceuticals take-back) program .

Milestone: Identify a list of emerging contaminants of concern. Promote legislation to ban or replace with alternative the use of certain contaminants.

Objective: Determine link between input contaminant and effect (i.e. fish growth abnormality)

Milestone: Compile an inventory of relevant research and develop research proposals to fill data gaps on the effects of emerging contaminants on the effects of emerging contaminants (e.g. bioaccumulation in locally caught fish) in SMB and watershed.

Objective: Monitor emerging contaminants

Milestone: Add emerging contaminants to monitoring plans required in NPDES permits including POTW, industrial permots, and stormwater permits.

Priority Issue: Natural resources

Conserve and Rehabilitate Natural Resources: Goals and Objectives

Goal # 4: Create/support policies and programs to protect natural resources

In order to protect and restore Santa Monica Bay, policies must be in place to protect remaining areas within the watershed and Bay that are vital to species survival, water quality, biodiversity and overall bay health.

Objective: Work with municipalities to develop and institute stream protection ordinances

Milestone: Adopt and implement stream protection ordinance by Santa Monica Bay watershed cities (City of Los Angeles by 2009). Fund stream restoration and enhancement projects in cities that have adopted such ordinances.

Milestone: Adopt/update and implement a hydromodification policy by State Water Resources Control Board (SWRCB) and Los Angeles Regional Water Quality Control Board (LARWQCB) by 2011

Objective: Evaluate and establish Marine Protected Areas in the Bay

Milestone: Complete a data gap analysis for Marine Protected Areas

Milestone: Complete monitoring needed to fill data gaps for Marine Protected Areas

Milestone: Participate in the state MLPA process, establish a MPA network in Santa Monica Bay by 2011.

Milestone: Develop monitoring plan for MPAs in the Bay (or for the south coast network, or for the entire network)

Objective: Develop/Promote/Support the creation of an ocean trust fund to fund data collection, assessment and enforcement.

Milestone: Establish the ocean trust fund by 2012

Objective: Evaluate and establish additional regulatory measures for protection of fishery resources.

Milestone: Develop reliable population estimates for fish and invertebrate species with heavy fishing pressures (e.g. rock fish spp. Spiny lobster, red sea urchin). Set numeric goals for sustaining the population of these species by 2013.

Milestone: Develop reliable assessment of recreational fishing effort (total take, locations frequented by anglers, etc.) and their effects on population of key fish species by 2011.

Milestone: Prioritize and establish fishery management plans (FMPs) for key fish species of concern (e.g. California halibut and surfperches) by 2012.

Milestone: Establish more stringent restriction on collection of native species such as Giant keyhole limpet that are exploited for non-fishery purposes (e.g. pharmaceutical and aquarium trade).

Objective: Evaluate potential impacts of new pipelines and offshore energy development (LMN piping or shipping, slant drilling, etc. and renewable energy such as current, wind, etc.) in Santa Monica Bay and work to prevent any negative impacts on the bay that this type of development might cause.

Milestone: Produce a report based on existing research and expert opinion on the impacts of new pipelines in the Bay by November 2008.

Milestone: Develop coordinative relationship with Minerals Management Service's alternative energy and pacific oil and gas subdivisions by 2009. Work with MMS to prevent negative impacts of any proposed projects as they come up.

Objective: Facilitate water quality improvement and habitat restoration in key subwatersheds

Milestone: Partner with agencies to obtain funding for watershed coordinators Ballona Creek and Malibu Creek watersheds by 2009

Milestone: Complete historical ecology and water budget studies for the Ballona Creek watershed by 2010

Goal # 5: Acquire land and open space for preservation

Public ownership of land within Santa Monica Bay ensures stewardship of watershed resources and allows re-establishment of ecological services that particular land uses contribute to the overall health of the bay by limiting ecologically harmful uses of the watershed, such as further commercial and residential development.

Objective: Partner with agencies to purchase 2000 acres of priority open space in the Santa Monica Mountains and urban areas of the watershed.

Milestone: Purchase available private parcels in Corral Canyon to protect watershed function, provide beach water quality benefit and provide habitat and recreational connectivity from the headwaters to the coast

Objective: Partner with agencies to purchase priority parcels in urbanized areas of the watershed

Milestone: Develop a parcel map with prioritized properties for purchase in Ballona Creek watershed

Milestone: Collaborate with MRCA and with City and County parks and recreation departments and other land conservancies to identify and prioritize shared acquisition goals.

Milestone: Contribute or leverage a minimum of \$10 million for priority acquisitions by 2015.

Goal # 6: Manage invasive species

Invasive species adversely affect the habitats and ecosystems they invade economically, environmentally or ecologically. The invasive species that are a problem within the Santa Monica Bay watershed possess specific traits that out-compete native species. At times they simply grow and reproduce at a faster rate, but often the issues are more complex, involving a multiplex of traits and interactions.

Objective: Achieve 303d listing for aquatic invasive species in Malibu Creek

Milestone: Compile and provide data to RWQCB for their 303d listing review of existing invasive species and their impacts to beneficial uses

Objective: Create a collaborative organization or institute to perform research and implement control / eradication measures for invasive species

Milestone: Collaborate with partners to develop a workplan and secure funding by 2011

Objective: Coordinate and fund public education and outreach on invasive species

Milestone: Expand the education and outreach on control of mudsnails, including more mudsnail signs and broader dissemination of mudsnail video

Objective: Develop policy to require invasive species prevention plans for all funded projects

Milestone: Adopt a policy for SMBRC-funded projects by 2010

Milestone: Promote adoption of policies by SCC, SWRCB, SMMC and DFG by 2015

Objective: Ban importation and sale of select invasive species

Milestone: Achieve Restricted Species Listing for crayfish, *arundo donax*, pampas grass and ice plant

Objective: Support invasive species removal programs and projects

Milestone: Fund riparian invasive species removal and native revegetation programs on 20 acres in the Santa Monica Mountains by 2014

Milestone: Fund invasive species removal and revegetation on 20 acres of coastal bluffs and dunes by 2015

Milestone: Continue crayfish removal activities in Trancas canyon and work with golf course to cease stocking and fund removal efforts

Goal # 7: Restore streams, wetlands and riparian zones

Riparian zones, or the interface between land and flowing surface water, were once abundant along the banks of streams that run into Santa Monica Bay. These vital natural areas, like that of wetlands, act as biofilters that protect bodies of water from runoff and erosion. Santa Monica Bay watersheds were at one time covered with a web of streams that were fed by natural springs and seasonal rains. Freshwater wetlands, once expansive, were interspersed throughout the watershed. Today those streams have been lost to development, which has resulted in the loss of their natural ability to cleanse water, recharge water supplies and reduce flooding.

Objective: Restore Ballona Wetlands

Milestone: Complete feasibility study by 2008. Determine preferred alternative by 2009.

Milestone: Complete baseline monitoring by 2010

Milestone: Secure funding source (approximately \$50 M, total project cost \$100–200 M) sufficient to complete first phase implementation of preferred alternative by 2010

Objective: Restore Malibu Lagoon

Milestone: Fully implement the restoration plan for Malibu Lagoon by 2015.

Objective: Remove fish barriers to open 20 miles of stream habitat to migrating steelhead trout

Milestone: Remove priority barriers identified by the Commission, including barriers on Malibu Creek (Rindge Dam, Century Dam, Cold Canyon, Las Virgenes Trib Crossing), Solstice Creek (PCH Bridge Replacement), Zuma (at grade road) by 2018

Milestone: Complete ACOE feasibility study for Rindge Dam removal by 2009

Milestone: State Parks incorporate removal of Arroyo Sequit barriers into their work plan by 2009; secure funding for removal and begin implementation by 2010

Objective: Increase body of knowledge on local stream function including hydrology and geomorphology, especially urbanized streams

Milestone: Conduct technical background work needed to understand local hydrology and develop regional curves for local streams by 2010.

Milestone: Host semi-annual stream restoration workshops to transfer technical information and knowledge on techniques for urban stream restoration to agency and nonprofit staff and the public

Milestone: Develop a water budget for Santa Monica Bay watershed by 2013, starting with Ballona Creek

Milestone: Modeling to determine optimal locations for conversion to pervious surfaces by 2009

Objective: Restore urban streams, including daylighting culverted streams and removing cement channels

Milestone: Complete Ballona Greenway planning by 2010 and implement a Greenway project by 2013

Milestone: Purchase parcel adjacent to Lafayette Park and daylight stream on existing Park

Milestone: Complete a feasibility study for daylighting Centinela Creek in Edward Vincent Jr. Park

Milestone: Work with Malibu Creek watershed cities to implement stream restoration projects

Milestone: Restore Stone Canyon Creek at UCLA by 2011

Milestone: Work with Balwin Hills Conservancy to identify stream restoration alternatives within Balwin Hills and nearby areas draining the Conservancy project area.

Objective: Protect remaining undeveloped subwatersheds in Santa Monica Bay

Milestone: Protect/purchase remaining undeveloped lands, especially stream corridors, e.g. Hoag Canyon and remaining Corral Canyon properties

Objective: Complete the Topanga Creek State Park general plan and move forward with Topanga Lagoon restoration.

Milestone: Work with State Parks to complete the General Plan by 2010

Milestone: Provide funding to CALTRANS to complete the EIR for re-aligning the PCH bridge.

Objective: Restore Grand Canal to improve water quality, increase wetlands habitat and public access, and remove invasive species.

Milestone: Complete restoration design and CEQA process by 2008

Milestone: Secure funding for implementation of restoration

Milestone: Complete implementation of restoration plan by 2011

Objective: Restore Oxford Lagoon to provide native species habitat, improved water quality, improved flood storage, and greater public access

Milestone: Set up advisory group for restoration planning by 2009

Milestone: Complete restoration design and CEQA process by 2010

Milestone: Complete implementation of the lagoon restoration plan by 2015

Objective: Restore Del Rey Lagoon to improve water quality, increase wetlands habitat and public access.

Milestone: Secure all parcels immediately adjacent to the lagoon by 2011

Milestone: Develop restoration plan and complete CEQA process 2013

Milestone: Complete implementation by 2016

Objective: Evaluate feasibility of Trancas lagoon restoration

Milestone: Fund a feasibility analysis by 2010

Goal # 8: Restore intertidal and subtidal habitats

Intertidal zones are those areas of land where part of the beach is exposed by low tides and submerged by high tides. This area can include many different types of habitats, including steep rocky cliffs, sandy beaches or vast mud flats. Subtidal habitats are part of the ocean environment below low tides that are always submerged by water.

Objective: Restore and monitor five acres of kelp forest

Milestone: Restore two acres of kelp habitat by 2009

Milestone: Restore five acres of kelp habitat by 2012

Objective: Protect and manage rocky intertidal habitat

Milestone: Conduct a pilot project to test three different methods of intertidal protection by 2012

Milestone: Propose adoption of optimal management scheme(s) by responsible agencies by 2013

Objective: Restore an abalone population

Milestone: Complete a pilot project to re-introduce abalone to local native habitat by 2010

Objective: Protect and manage sandy intertidal habitats

Milestone: Develop sandy beach restoration and management plans that encourage protection of natural resources and human recreational opportunities by 2011

Milestone: Develop best practices for beach management for sandy beach habitat conservation. Establish formal procedures for Beach Management Certification

Milestone: Provide training and education for beach maintenance workers and managers about the best ecology-based management measures

Milestone: Establish/participate in a program to monitor beach animals and plants in cooperation with scientists and community members by 2010

Milestone: Develop and implement beach restoration and/or habitat conservation projects by 2011

Goal # 9: Restore coastal bluffs and dunes

Once extending over 15 km along the Santa Monica Bay, covering well over 3000 acres, the coastal dune habitat of the bay is one of the largest of its kind remaining on the western edge of Los Angeles. Other dune habitats exist in smaller sizes in El Segundo, Malaga Cove and Ballona wetlands. These dunes are vital to the survival of more than 900 animal and plant species. Since 1984 the dunes have been monitored because of the El Segundo blue butterfly, which is federally listed as an endangered species. The dunes provide the only remaining habitat for the El Segundo blue which feeds on the dune's native coastal buckwheat.

Objective: Restore habitat for El Segundo blue butterfly

Milestone: Complete restoration of four top priority sites (19.5 acres) identified in the Beach Bluff Restoration Master Plan by 2015

Milestone: Enhance and expand existing restoration of El Segundo Dunes.

Milestone: Complete more bluffs restoration projects on PV peninsula

Objective: Facilitate dune and sandy beach restoration for shorebird habitat

Milestone: Identify optimal restoration areas by 2010 and develop a restoration plan

Milestone: Implement restoration of priority sites by 2015

Goal # 10: Protect and restore open ocean and deep water habitats

Objective: Continue monitoring recovery of benthic habitats at POTW discharge outfalls

Milestone: Produce a 10-year assessment report by 2012

Objective: Update and expand knowledge of deep canyon and deep reef habitats

Milestone: Work with LACSD to update their previous assessment

Priority Issue: Benefits and Values to Humans

Protect Benefits and Values: Goals and Objectives

Goal # 11: Protect public health

Health risks associated with swimming in the surfzone can be traced to many sources. Dry weather urban runoff can carry pathogens (pathogenic bacteria and viruses) and other contaminants (human- and animal-caused) to the beaches and surfzone. Rain storms, and the increased runoff through storm drains that result, also contribute these pollutants. Studies indicate that some species of seafood from Santa Monica bay are contaminated with significant quantities of toxic chemicals, primarily DDT and PCBs. These studies also indicate that significant health risks are associated with consuming large quantities of contaminated seafood over a long period of time.

Objective: Achieve full compliance with SMB Beaches Pathogen TMDL

Milestone: Fund diversions of all dry weather (summer and winter dry periods) at un-diverted drains, as short-term solutions to beach bacteria problems

Milestone: Evaluate and determine the effectiveness of the water circulation improvement device installed at mother's beach and recommend enhancement if necessary

Milestone: Participate in SMB Beaches Bacteria TMDL jurisdictional workgroups

Milestone: Promote and support further evaluation by the SWRCB Clean Beach Initiative (CBI) program regarding the sand as source of beach bacteria by 2009

Milestone: Establish SMBRC as a forum for facilitating application of new indicators by hosting annual meetings on this topic.

Objective: Develop and adopt new pathogen indicators and source identification tools

Milestone: Promote and support research efforts by the SWRCB CBI program on development of new rapid pathogen indicators

Milestone: Incorporate effective indicator monitoring techniques into current monitoring programs by 2012.

Objective: Support better public notification

Milestone: Obtain more beach warning signs for L.A. County Health Department by May 2009

Milestone: Link to HTB Beach Report Card and LA County Health Dept. websites by 2008

Milestone: Link to public health studies online to the SMBRC website by 2009

Milestone: Disseminate results of SCCWRP epidemiological study update in 2009, via our website, mailing list, and Journal

Objective: Reduce health impacts of seafood consumption

Milestone: Develop and issue new fish consumption advisory by 2010

Milestone: Update fish advisory signage and develop and distribute new educational materials

based on the new advisory by 2011

Milestone: Enhance the health inspectors' program to educate markets on "best practices" in purchasing uncontaminated fish by 2010.

Milestone: Utilize community organizations and health professionals to educate at-risk families

Milestone: Increase enforcement of existing bag limit for white croaker by 2009

Milestone: Reestablish catch-ban area to correspond with commercial catch-blocks in order to increase understanding of regulations and enforce adherence to regulations by 2010

Milestone: Reduce to 6 percent the amount of markets found to have white croaker with DDT and PCB contaminant levels above FDA action levels by 2010

Milestone: Reduce to 4 percent the amount of markets found to have white croaker with DDT and PCB contaminant levels above EPA screening levels by 2014

Milestone: Increase by 10 percent angler awareness of local fish advisory by 2010 (Angler awareness of local fish advisory should be equal to or greater than 65 percent in 2010)

Milestone: Reach out to X pier fishers with FCEC messaging by 2010

Milestone: Expand institutional control measures (enforcement, monitoring, and education) through coordination with partner agencies to reduce the risk of consumption of contaminated fish in high risk ethnic communities

Objective: Remediate contaminated sediments

Milestone: Complete and publicize the draft plan for remediating contaminated sediments on Palos Verdes shelf by 2009. Finalize and implement a remediation plan by 2012.

Goal # 12: Maintain/increase natural flood protection through ecologically functioning floodplains and wetlands

Objective: Partner to purchase and restore priority parcels

Milestone: Develop a parcel map with prioritized properties for purchase in Ballona Creek watershed by 2011

Objective: Re-evaluate LA County capital flood calculation and harmonize with the rest of the state/nation

Milestone: Fund analysis of capital flood calculations for other agencies, e.g. ACOE, and comparison to L.A. County and the feasibility of updating LA County's calculations by 2012.

Objective: Decrease peak flood flows

Milestone: Modeling to determine optimal locations for conversion to pervious surfaces by 2009

Milestone: Promote municipal and/or state policies to standardize green infrastructure implementation throughout the watershed. Develop policies directing a portion of street construction/public works budgets to green infrastructure developed by 2010.

Goal # 13: Access to beaches and open space

Access to Santa Monica Bay's beaches and open space is of great import to the economy of Southern California. Over 45 million people visit the beaches of Santa Monica Bay every year, making it one of the most popular beach zones in the United States. Providing safe, fair and ecologically sound transportation to these vast recreational areas will help ensure this economy continues to thrive. However, such use can have many negative impacts on the ecosystem. Finding a balance between recreational activities and environmental stewardship is of great significance to the health of the bay.

Objective: Partner with agencies to purchase 2000 acres of priority open space in the Santa Monica Mountains

Milestone: Purchase available private parcels in Corral Canyon to protect watershed function by 2012.

Milestone: Evaluate feasibility of Trancas lagoon acquisition and restoration by 2010.

Objective: Partner with agencies to purchase priority parcels in urbanized areas of the watershed

Milestone: Develop a parcel map with prioritized properties for purchase in Ballona Creek watershed (see Goal # 10)

Milestone: Acquire parcel adjacent to Lafayette Park for public ownership to convert to pervious surfaces, increase recreation and restore a buried stream

Milestone: Acquire parcel at north end of Del Rey Lagoon for City of LA ownership and improve connectivity to Ballona Creek estuary

Objective: Increase public access to parks and open spaces and disseminate information on public beach access

Milestone: Complete Ballona Greenway planning by 2008

Milestone: Secure funding and implement two priority Greenway projects by 2011

Milestone: Develop 30 acres of parks/open space in urban areas, focused on underserved communities,

Objective: Evaluate need for more public access points to Ballona Creek and wetlands

Milestone: Work with Ballona Wetlands Restoration Working Group to open a public access point to Ballona Wetlands by 2010

Milestone: Fund community outreach and education about bike path safety and use, and develop an action plan to address community concerns by 2010.

Goal # 14: Conserve water and protect water supply

Water conservation refers to reducing use of fresh water, through technological or social methods. The goals of water conservation efforts include:

Sustainability - To ensure availability for future generations, the withdrawal of fresh water from an ecosystem should not exceed its natural replacement rate.

Energy conservation - Water pumping, delivery, and wastewater treatment facilities consume a significant amount of energy.

Objective: Improve Water Supply

Milestone: Increase water supply availability by providing 800,000 (number consistent with IWRMP goals, same below) acre-feet/year of additional water supply

Milestone: Reuse/infiltrate 130,000 acre-feet/year of recycled water

Milestone: Reduce/reuse 150,000 acre-feet/year of dry weather runoff and capture and treat an additional 170,000 acre-feet/year

Milestone: Reduce/reuse 220,000 acre-feet/year of storm water runoff from developed areas, and capture and treat an additional 270,000 acre-feet/year

Milestone: Treat 91,000 acre-feet of contaminated ground water

Milestone: Work with water agencies to develop and implement financial incentives for storm water recharge projects that produce new water and offset reliance on imported potable water supply.

Objective: Enhance water conservation

Milestone: Reduce water demand by enhancing existing water conservation measures/programs