



4.2 WATER QUALITY

PHOTO: SANTA BARBARA SHORE WAVES

Coastal Act policies related to Water Quality that are relevant to Santa Barbara include the following:

Section 30230. Marine resources shall be maintained, enhanced, and, where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30231. The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

INTRODUCTION

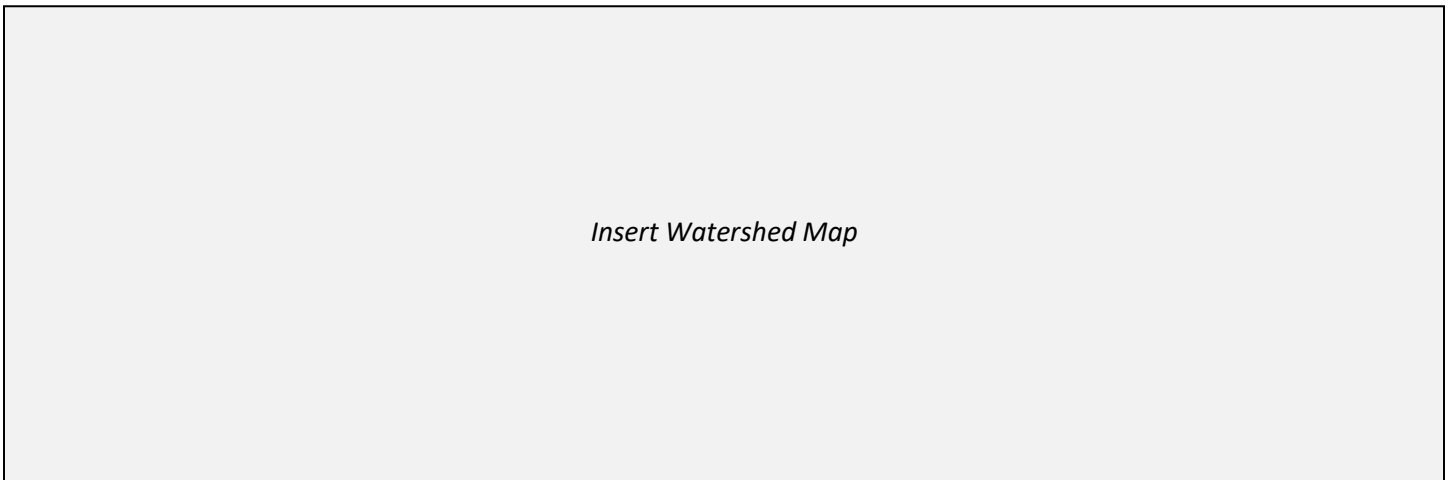
The Coastal Act provides that new development must protect the biological productivity and quality of coastal waters (offshore ocean and marine intertidal areas), streams, wetlands, estuaries, and lakes. The Coastal LUP achieves these goals through 1) identifying impaired water bodies and sources of water quality problems; 2) providing policies that identify City planning efforts and programs aimed at protecting water

quality, including storm water management programs; and 3) providing development standards and management techniques to avoid water quality impacts and prevent polluted runoff from entering coastal waters, streams, wetlands, estuaries, and lakes. Chapter 4.1 *Biological Resources* addresses policy and development standards for environmentally sensitive habitat areas, wetlands, estuaries, open coastal waters, and creeks, including required habitat buffers to these resources.

WATER QUALITY

The water quality of City creeks, wetlands, estuaries, lakes, groundwater basins, and marine waters is affected by a number of factors. Some factors are natural, such as oceanographic processes, erosion, atmospheric deposition, and freshwater inflow. Other factors stem from human activities and development, such as urban storm water runoff, offshore oil development activities, municipal wastewater outfalls and other discharges, toxic algae blooms, and debris. These factors can contribute to the increased presence of nutrients, trace metals, pesticides, synthetic organic contaminants, petroleum products, and pathogens in ocean waters and sediments.

FIGURE 4.2-1 WATERSHEDS OF MAJOR CREEKS



Local Resources & Issues

Watersheds & Creeks

Santa Barbara contains four major watersheds. These watersheds are drained by Arroyo Burro, Mission Creek, Laguna Channel, and Sycamore Creek. Two other smaller watersheds, Arroyo Honda and Lighthouse Creek, drain much of the Mesa Component Area.

The three largest creeks originate on the south face of the Santa Ynez Mountains, generally at elevations of 2,000 to over 3,000 feet above mean sea level (MSL). Each of these major watersheds, particularly those of Arroyo Burro and Mission Creek, drain large natural undeveloped areas within the Santa Ynez Mountains and Los Padres National

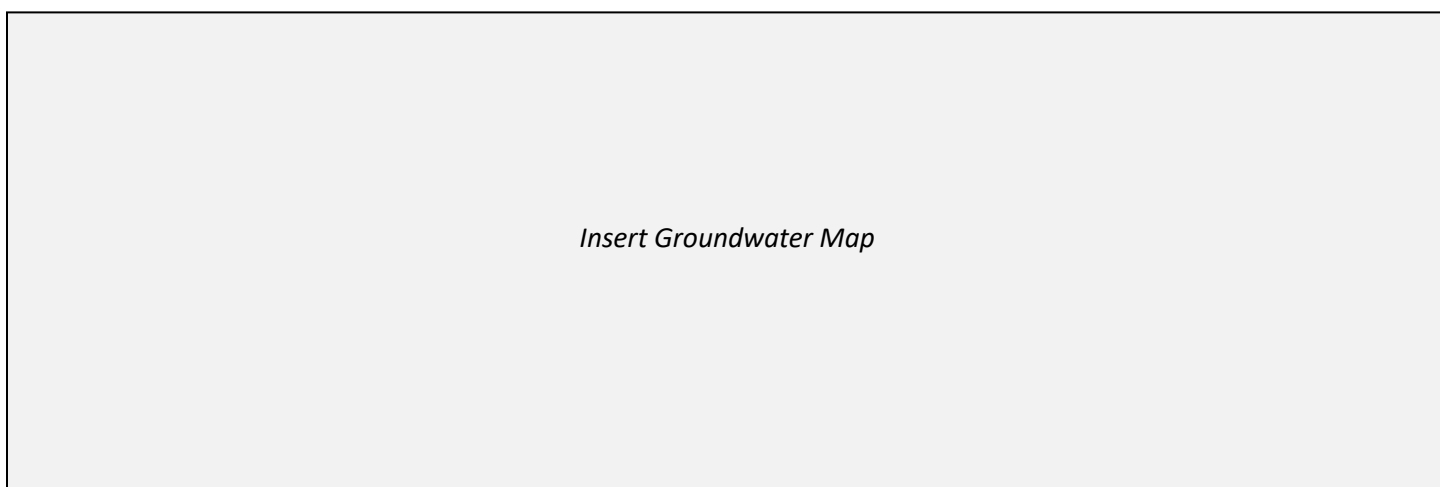
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Forest, as well as urbanized areas within the City. With the exception of some undeveloped canyons of the south face of the Riviera, Laguna Channel drains an almost entirely urbanized watershed. Tidal estuaries at Arroyo Burro and Mission Creek are each approximately two acres in size.

In the urbanized areas of the City, drainage to all of these major and minor creeks is fed by runoff from roadway gutters that empty into a network of urban storm drains.

The three largest creeks within the City are seasonal over most of their reaches, with higher flows occurring during winter and spring. In drought years, segments of these creeks or their tributaries may not flow, while in wet years, near-perennial flow may be maintained.

FIGURE 4.2-2 GROUNDWATER BASINS



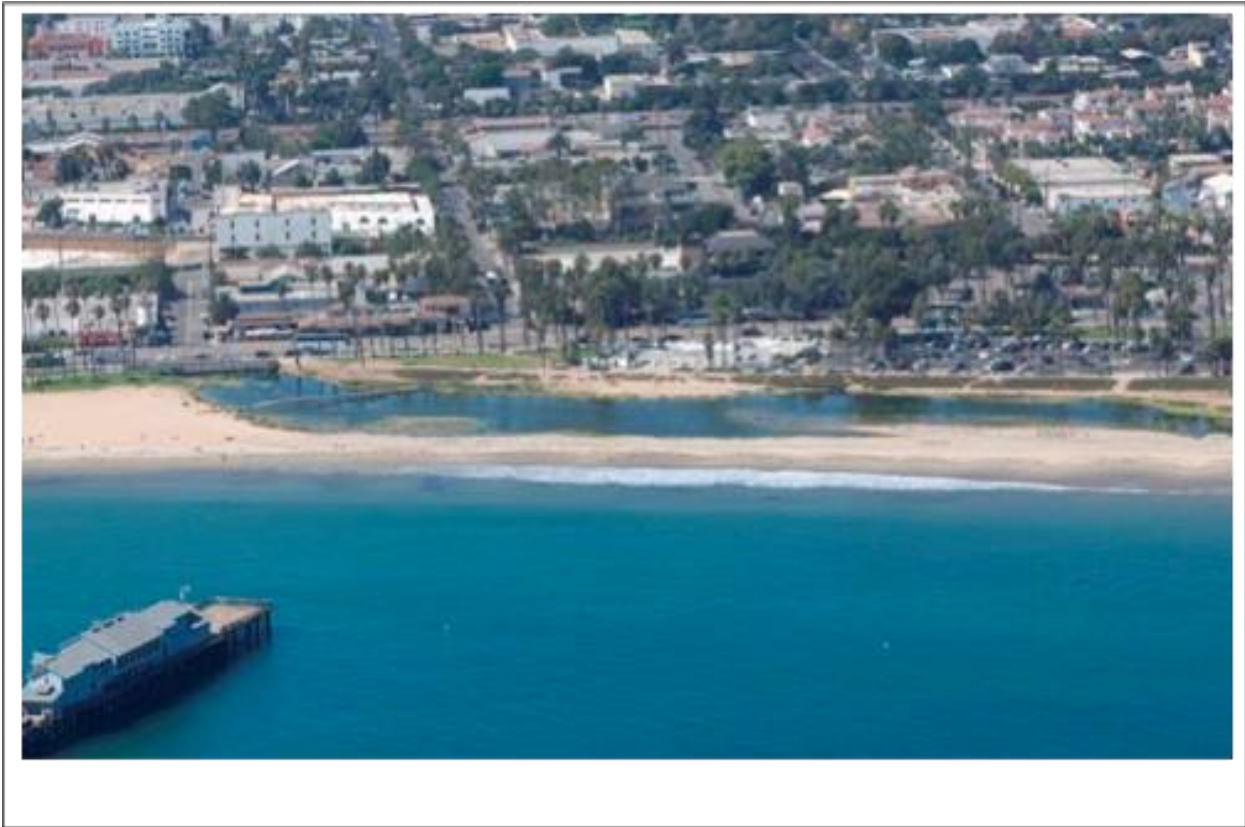
Groundwater

Storage Units I and III of the Santa Barbara Basin underlie the City of Santa Barbara's Coastal Zone.

The Santa Barbara Basin is typically overlain by relatively permeable and unconsolidated alluvium and debris flow deposits eroded from the mountains. Runoff percolates through these deposits to replenish the underlying aquifers, and groundwater percolates through underlying rocks, fractures, and faults to form deeper aquifers.

Long-term average annual pumping of the Foothill Basin and Storage Unit I Basin has been estimated at 1,083 acre feet per year under the Long Term Water Supply Plan. Storage Unit III (located generally in the Westside area) has the potential for limited production, though water quality is relatively poor. During periodic droughts, as surface water supply diminishes, the City increases groundwater pumping. Seawater intrusion into Storage Unit I can occur because the groundwater basin is in contact with seawater that can flow into the basin during periods of heavy pumping. However, the City manages its groundwater resources, including recharging the basin, when surface supplies are ample, utilizing a Multiple Objective Optimization Model (developed by USGS) to estimate pumping levels that represent a compromise between maximizing production and

minimizing seawater intrusion, as well as drilling additional wells inland to reduce the risk of seawater intrusion. The City continues to be vigilant about monitoring seawater intrusion.



MISSION CREEK AND EAST BEACH (SHOWN HERE) ARE INCLUDED ON CALIFORNIA'S 303(D) LIST BECAUSE THEY HAVE NOT MET WATER QUALITY STANDARDS DEFINED IN THE CENTRAL COAST BASIN PLAN.

Estuarine & Marine Resources

Santa Barbara's coastal waters and tidelands have long been recognized as habitats of especially high biological productivity. Habitats include estuaries (see above in Watersheds & Creeks), rocky shores, coast beaches, sand flats, open ocean water, as well as kelp beds and reefs.

Directly off Santa Barbara's south-facing shore and framed by the Northern Channel Islands is the Santa Barbara Channel. The Channel is known for its nutrient-rich waters that support a wealth of marine plants and animals. The area around the islands is protected as a National Marine Sanctuary and hosts 19 Marine Protected Areas.

Polluted Water Bodies

Acting under Sections 305(b) and 303(d) of the Federal Clean Water Act (CWA), the Central Coast Regional Water Quality Control Board (RWQCB) has designated 13 beneficial uses for water bodies within the City of Santa Barbara in the Central Coast Basin Plan (Table 4.2-1 *Designated Beneficial Uses of Santa Barbara Creeks*). These water bodies must meet the objectives for protection and improvement of water quality as defined within the Basin Plan.

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Table 4.2-1 Designated Beneficial Uses of Santa Barbara Creeks

Beneficial Uses	Arroyo Burro Estuary	Arroyo Burro	Mission Creek	Laguna Channel (Waste Slough)	Sycamore Creek	Andrée Clark Bird Refuge
Municipal and Domestic Supply		X	X		X	
Agricultural Supply					X ¹	
Ground Water Recharge		X	X	X	X	
Water Contact Recreation	X	X	X	X	X	X
Non-Contact Water Recreation	X	X	X	X	X	X
Wildlife Habitat	X	X	X	X	X	X
Cold Freshwater Habitat			X		X	
Warm Freshwater Habitat	X	X	X	X	X	X
Migration of Aquatic Organisms			X		X	
Spawning, Reproduction, and/or Early Development	X	X	X	X	X	

¹ Agricultural uses are not located in the Coastal Zone along Sycamore Creek.

Beneficial Uses	Arroyo Burro Estuary	Arroyo Burro	Mission Creek	Laguna Channel (Waste Slough)	Sycamore Creek	Andrée Clark Bird Refuge
Preservation of Biological Habitats of Special Significance		X				X
Rare, Threatened, or Endangered Species		X	X		X	X
Estuarine Habitat	X		X		X	
Freshwater Replenishment		X	X		X	
Commercial and Sport Fishing	X	X	X	X	X	X ²
Shellfish Harvesting						X ³

Source: Central Coast RWQCB 2011, City Water Resources Division 2014

Table 4.2-2 Existing Beneficial Uses of Coastal Waters

Coastal Water	Santa Barbara Harbor	Beach Parks
Water Contact Recreation	X	X
Non-Contact Water Recreation	X	X
Industrial Service Supply	X	
Navigation	X	X

² Andrée Clark Bird Refuge does not support commercial and sport fishing.

³ Andrée Clark Bird Refuge does not support shellfish harvesting.

Coastal Water	Santa Barbara Harbor	Beach Parks
Marine Habitat	X	X
Commercial and Sport Fishing	X	

Source: Central Coast RWQCB 2011, City Water Resources Division 2014

Under Section 303(d) of the CWA, states are required to develop list of impaired water bodies that do not meet water quality standards defined in the Basin Plan. Water bodies in the City's Coastal Zone that periodically do not meet these standards are listed in Table 4.2-3 *Impaired Water Bodies in Santa Barbara in 2012 Integrated Report*. Potential pollutants of concern in these water bodies include coliform bacteria, petroleum products discharged off thousands of acres of parking lots and roadways, as well as sediment from new construction, agricultural development outside the Coastal Zone, and eroding hillsides⁴.

Table 4.2-3 Impaired Water Bodies in Santa Barbara in 2012 Integrated Report (Clean Water Act Section 303(d) List/305(b) Report)

Waterbody	Pollutants			
Arroyo Burro	<i>Escherichia coli</i> (<i>E. coli</i>)	Fecal Coliform		
Pacific Ocean @ Arroyo Burro Beach	<i>Enterococcus</i>	Total Coliform		
Pacific Ocean @ Leadbetter Beach	Total Coliform			
Mission Creek	<i>Escherichia coli</i> (<i>E. coli</i>)	Fecal Coliform	Low Dissolved Oxygen	Unknown Toxicity
Pacific Ocean @ Mission Creek	<i>Enterococcus</i>	Fecal Coliform	Total Coliform	

⁴ Total maximum daily loads (TMDLs), the ultimate allowable discharge of each of these pollutants, have not yet been established by the RWQCB for these water bodies.

Waterbody	Pollutants			
Sycamore Creek	Chloride	Fecal Coliform	Sodium	
Pacific Ocean @ Sycamore Creek	<i>Enterococcus</i>			

Stormwater Runoff

Stormwater runoff is the single largest source of surface water pollution in the City, with elevated levels of pollutants occurring during the rainy season. Even when it is not raining, creek water quality is degraded due to dry weather urban runoff. Because stormwater runoff and dry weather runoff come from many diffuse sources, they are also called nonpoint source pollution.

Santa Barbara's Coastal Zone is located within the lower floodplains that once included native riparian forests. Most of the Coastal Zone is now developed with roads, parking lots, businesses, and buildings. The impermeable surfaces in these developments do not allow water to infiltrate into the ground. Instead, pollutants from human activities settle onto the impermeable surfaces, where they remain until a storm event washes them into nearby storm drains, creeks, and eventually the ocean. Common pollutants may include sediment, nutrients, pesticides, bacteria and viruses, metals, oil and grease, organic compounds, and gross pollutants such as trash. These pollutants impact stream ecosystems, potentially expose swimmers and surfers to infections and illness, and can lead to burdensome monitoring and mitigation requirements based on local, state, and federal clean water regulations.

City departments coordinate with the Central Coast Regional Water Quality Control Board (RWQCB) on the implementation of state and federal regulations. The RWQCB has jurisdiction over stormwater discharges from new development and redevelopment, and management of groundwater resources in the City, administered primarily through the Storm Water Management Program (SWMP) in compliance with the National Pollutant Discharge Elimination System (NPDES) Phase II Small Municipal Separate Storm Sewer System (MS4) Storm Water Permit Program, and through the Groundwater Assessment and Protection program.

Although the California State Water Resources Control Board (SWRCB) and the RWQCBs are the lead water quality agencies in California, the California Coastal Commission also has a role to ensure that coastal waters are adequately protected from stormwater runoff. The Coastal Commission is required to apply all of the policies of the Coastal Act in its implementation of the Act, including those related to water quality. In addition, the Coastal Commission and the SWRCB are the lead agencies for implementing California's Nonpoint Source Program, in partnership with the nine RWQCBs.

In addition to state and federal surface water quality regulations, multiple City policies and programs are in place to minimize stormwater runoff and pollutants from

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development. Both construction and post-construction water quality protections are identified in the adopted City SWMP and updated Storm Water Best Management Practices Guidance Manual and are applied as conditions of approval for development projects. Several existing City stormwater policies require that post-development peak stormwater runoff discharge rates and volumes will not exceed the estimated pre-development conditions for new development and redevelopment requiring discretionary review. Where possible and appropriate, development projects are required to integrate on-site stormwater infiltration and detention facilities into site plans and to incorporate Best Management Practices (BMPs) to reduce runoff. This can significantly reduce the needed size of downstream stormwater facilities, such as channels, pipes, and treatment devices, and can help protect natural channels from erosion. City stormwater standards encourage the use of low-impact development site designs and require that runoff be treated to remove pollutants before being discharged from the parcel. Design guidelines for development near creeks and policies in Chapter 4.1 *Biological Resources* of the Coastal LUP require minimum creek buffers, provide water quality and creek protection, and encourage restoration in creekside development projects.

The Santa Barbara Municipal Code (SBMC) also has specific ordinances that prohibit illicit discharges to the storm drain system and the Harbor and provides for enforcement authority.

Water quality improvement projects, such as the replacement of impervious surfaces with permeable pavers and public education projects, are also ongoing by the City of Santa Barbara to improve water quality and reduce pollutants from both existing and future development.

Harbor & Stearns Wharf Operations

The Harbor and Stearns Wharf encompass approximately 252 acres. About two-thirds of the area is water, and one-third is land. The Harbor has 1139 slips and appurtenant boating services for commercial fishermen, recreational boaters, and others. The Harbor also includes parking facilities and dredging operations. The Harbor Commercial area includes nine major buildings housing a mix of coastal-dependent, coastal-related, and visitor-serving uses. There is also a mooring area off of East Beach. The Wharf primarily has visitor-serving commercial and recreational uses. These operations and services have the potential to be detrimental to ocean water quality if not properly managed.



BOAT IN THE HARBOR

The Waterfront Department manages two Clean Marina Programs. One is a multi-state, industry-sponsored certification program designed to reflect compliance with strict environmental and best management practices to prevent coastal water pollution. The Santa Barbara Harbor was certified in July 2006 and recertified in June 2011.

The other program, which has been in place since 2002, implements best management practices and other measures to provide a clean harbor environment for people, aquatic life, and seabirds. Waterfront staff reports annually to the Harbor Commission on this Program, which includes six elements:

- a. Facilities for Boaters to Prevent Pollution;
- b. Water Quality Monitoring;
- c. Best Management Practices to Prevent Pollution;
- d. Pollution Prevention and Abatement Projects;
- e. Education; and
- f. Compliance and Enforcement.

Water quality testing in the Harbor and in the East Beach Mooring Program area occurs twice yearly. Results remain consistent, indicating good water quality in both areas.

Oil Development

Oil wells existed on the Mesa until the 1950s, when oil production abruptly declined. A section of the City Charter adopted in 1967 prohibits any oil development within the City.

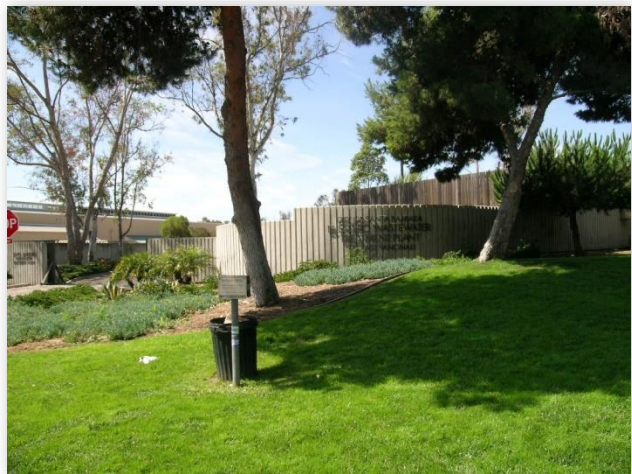
Just offshore, however, is the Santa Barbara Channel and its petroleum reserves. The oil industry was very active offshore in the state tidelands between 1959 and 1968, when several oil drilling platforms were installed, which are still in operation today. The first federal Outer Continental Shelf (OCS) lease in the Santa Barbara Channel was issued in 1966 and was followed by the installation of 19 platforms between 1967 and 1989.

In 1969, the largest oil blowout in the waters off California, and now the third-largest ever in the United States, occurred in the Santa Barbara Channel. Impacts from oil spills are well documented, including their effect on water quality. For these reasons, the City of Santa Barbara's legislative platform consistently opposes offshore oil development in the Santa Barbara Channel.

Natural oil seeps also have the potential to affect marine water quality.

Effluent Discharge

With the exception of the Braemar neighborhood in the Arroyo Burro Component Area and Bellosguardo (formerly known as the Clark Estate), the Coastal Zone is served by the City's sanitary sewer system. The wastewater collection system feeds into El Estero Wastewater Treatment Plant located at 520 East



EL ESTERO WASTEWATER TREATMENT PLANT

Yanonali Street, a full secondary-level treatment facility that uses an activated sludge treatment process to substantially degrade the biological content of the wastewater and remove most organic material. Treated wastewater is then chlorinated and dechlorinated prior to discharge. Tertiary treatment diverts a portion of the effluent for reuse. Treated effluent from this facility is discharged into the ocean 8,720 feet offshore at a water depth

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of 70 feet via a 48-inch diameter pipeline. The last 720 feet of the pipeline employ 4-inch diffusers that rapidly mix the freshwater with seawater, maintaining a minimum dilution factor of 120:1. As a result of the level of treatment, distance offshore, and the rapid mixing, the discharged effluent from El Estero Wastewater Treatment Plant meets or exceeds all requirements of its National Pollutant Discharge Elimination System (NPDES) permit.

Discharge from Large Vessels in the Channel

The Santa Barbara Channel is heavily used by international cargo vessels and occasionally cruise ships, which periodically anchor offshore of the City. The Clean Coast Act of 2005 prohibits the release of sewage, sewage sludge, oily bilge water, hazardous waste, and graywater within three nautical miles of shore by large vessels (with sufficient holding tank capacity) and cruise ships. Since March 2012, sewage discharge in marine waters of the state or a marine sanctuary by cruise ships (and other large vessels) is prohibited, with exceptions, by state and federal law. In addition, recent regulations instituted by the Channel Islands National Marine Sanctuary prohibit release of sewage and graywater by large vessels (with sufficient holding tank capacity) and cruise ships within Sanctuary waters. Therefore, sewage discharges from cruise ships and large vessels are generally prohibited in much, but not all, of the Channel. Before every cruise ship visit, the Waterfront Department requires the ship's captain to sign an "Environmental Declaration" stating that no discharge of garbage, treated sewage, or graywater shall occur within 12 nautical miles of the City of Santa Barbara, and that the ship's incinerator will not be used within such limits.

Toxic Harmful Algal Blooms

Toxic harmful algal blooms (HABs) are periods of rapid growth or blooms of certain algal species, mainly of two genera in California (*Alexandrium* and *Pseudo-nitzschia*). Some blooms produce harmful neurotoxins (e.g., domoic acid). While these toxins cause no direct harm to the shellfish that initially consume the algae, the shellfish serve as vectors that transfer the toxins to humans and other animals. The state monitors seafood toxin levels and closes shellfish harvesting to prevent poisoning in humans. Another major concern related to these HABs is depletion of dissolved oxygen in the water⁵ that can cause fish and invertebrate die-offs. The Waterfront Department's Emergency Response Plan includes detailed plans for responding to a fish die-off.

HABs are occurring more frequently. The cause of increased HABs is under investigation; however, studies have identified a possible link between land use trends creating changes in runoff (e.g., increased fertilizer use in agriculture, coastal development) and HABs. Air pollution composed of oxides of nitrogen and sulfur gases, as well as particulate matter (soot), can be directly (via wet deposition, also known as acid rain) or indirectly (via dry

⁵ HABs contribute somewhat to oxygen depletion by establishing a physical barrier to gas exchange at the water surface, but more dramatically when the algal cells die in large numbers and are digested by aerobic bacteria.

deposition that subsequently is washed into waterways) released, transported, and deposited into the ocean, thereby providing a significant source of excess nutrients.

As a part of the Clean Marina Program, the Waterfront Department tests dissolved oxygen (D/O) levels in the Harbor to predict and report low-oxygen events, which can indicate the presence of harmful algal blooms. When D/O levels are dramatically low, the Department posts advisory notices at marina gates so crab and lobster fishermen who store their catch in receivers can move them outside the Harbor to avoid “dead loss.” Fishermen are encouraged to alert the Department immediately if they experience high dead-loss, so staff can test D/O levels.

Marine Debris

Marine debris, especially plastic, is an issue throughout the world’s oceans. In the Santa Barbara Channel, much of this debris winds up on the shorelines of the mainland and the Channel Islands. Volunteers from several organizations conduct an annual debris clean-

up effort at the Islands, removing over two tons of debris in 2017 comprised primarily of derelict fishing gear. Residents of the City contribute to the marine debris through litter that finds its way to the ocean through stormwater, wind, and wave action. The City participates in public awareness campaigns such as the “Where’s Your Bag?” campaign, in cooperation with Channelkeeper and other organizations.



SANTA BARBARA HARBOR

The City has existing efforts aimed toward reducing such debris, including installation of metal screens and public information signs at storm drains, prohibitions on single-use plastic bags by certain stores, public education campaigns to educate and encourage shoppers

to use reusable bags, and consideration of an ordinance to prohibit the use of expanded polystyrene foam food containers and restrict the distribution of materials such as straws, eating utensils, condiment packages, etc. within the City. The City, through its Waterfront Department and Parks and Recreation Department, removes waterside debris, trash found within creeks, trash, and beach litter along the shoreline from East Beach to Leadbetter Point, as well as other locations, as needed. Additional programs include Harbor and beach clean-up after storms, high winds, and special events. The Waterfront Department also manages an Operation Clean Sweep Program that utilizes volunteer divers and dock workers to remove seafloor debris. These activities result in many tons of debris removed from coastal areas each year.

WATER QUALITY POLICIES

CITY PLANNING EFFORTS & PROGRAMS

Water Quality Improvement

- Policy 4.2-1** Enforcement of Water Quality Laws. Support and encourage the enforcement of all rules and regulations enacted for the purposes of protecting and restoring water quality, preserving and protecting freshwater and marine resources, maintaining sustainable populations of freshwater and marine organisms, and maintaining the quality of the freshwater and marine environment for the protection of human health.
- Policy 4.2-2** Cooperate to Promote BMPs. Cooperate with local, state, and federal governmental agencies to implement Best Management Practices (BMPs) that promote infiltration of runoff from roads, highways, and other development activities and minimize urban runoff flows and transport of pollutants into creeks and other coastal waters.
- Policy 4.2-3** Continue to Support Creek and Ocean Water Quality Improvement Programs. Support creek and ocean water quality improvement programs including, but not limited to, the following: creek and ocean water quality monitoring; creek clean-ups; beach clean-ups; water quality regulation enforcement; street sweeping; and larger water quality improvement projects.
- Policy 4.2-4** Pollution Reduction/Education. Continue to educate the public about reducing water pollution.
- Policy 4.2-5** Encourage Marine Water/Beach Clean-ups. Encourage marine water and beach clean-up efforts.
- Policy 4.2-6** Waste Education and Contaminant Collection. Continue coordination with the County of Santa Barbara and other agencies to establish and maintain an ongoing public education campaign, periodic waste drop-off collection days, and clean-up efforts focusing on proper disposal of pharmaceutical materials, contaminants of emerging concern, and other debris, to reduce the contaminants entering wastewater, storm drain, and solid waste systems.
- Policy 4.2-7** East Beach Water Quality Improvement. Consider actions for further improving water quality at East Beach, which could include a restoration plan for Lower Mission Creek/Laguna Channel, and potentially a constructed wetland at the creek/ocean interface.

Policy 4.2-8 Andrée Clark Bird Refuge Master Plan. Prepare a Master Plan for the Andrée Clark Bird Refuge. The Master Plan shall include plans for water quality improvement, habitat restoration, and maintenance of the Refuge.

Policy 4.2-9 Maintain, Enhance, and Restore Andrée Clark Bird Refuge. Ensure that the Andrée Clark Bird Refuge shall be maintained, enhanced, and restored to a healthy and viable aquatic habitat; shall provide a sanctuary for migratory waterfowl; and shall be preserved as open space or other public area.

Storm Water Management Program

Policy 4.2-10 Storm Water Management Program Requirements. The City's Storm Water Management Program shall, at a minimum, be consistent with the following requirements for development. Where there is a conflict between these policies and other applicable standards in effect, such as NPDES Storm Water permits, the requirements that on balance are most protective of coastal resources shall be applied.

- A. Plan, site, and design development to minimize the transport of pollutants in runoff from the development into coastal waters.
- B. Plan, site, and design development to minimize post-development changes in the site's runoff flow regime (i.e., volume, flow rate, timing, and duration), to preserve the pre-development hydrologic balance and prevent adverse changes in the hydrology of coastal waters (i.e., hydromodification).
- C. Address runoff management early in site design planning and alternatives analysis, integrating existing site characteristics that affect runoff (such as topography, drainage patterns, vegetation, soil conditions, natural hydrologic features, and infiltration conditions) in the design of strategies that minimize post-development changes in the runoff flow regime, control pollutant sources, and, where necessary, remove pollutants.
- D. Give precedence to a Low Impact Development (LID) approach to stormwater management in all development. LID emphasizes preventive Site Design strategies integrated with small-scale, distributed BMPs to reduce polluted runoff and replicate the natural hydrologic balance onsite through infiltration, evapotranspiration, harvesting for later use, detention, or retention of stormwater close to the source.
- E. Plan, site, and design development to protect and, where feasible, restore hydrologic features such as stream corridors, drainage swales, topographical depressions, groundwater recharge areas, floodplains, and wetlands.

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- F. Plan, site, and design development to preserve or enhance non-invasive vegetation to achieve water quality benefits such as transpiration, interception of rainfall, pollutant uptake, shading of waterways to maintain water temperature, and erosion control.
- G. Plan, site, and design development to maintain or enhance on-site infiltration of runoff, where appropriate and feasible, to reduce runoff and recharge groundwater.
- H. Plan, site, and design development to minimize the installation of impervious surfaces, especially directly connected impervious areas, and, where feasible, increase the area of pervious surfaces in redevelopment, to reduce runoff.
- I. Use pollutant Source Control Best Management Practices (BMPs), which can be structural features or operational actions, in all development with 500 square feet of new or redeveloped impervious area, to minimize the transport of pollutants in runoff from the development.
- J. In areas in or adjacent to an Environmentally Sensitive Habitat Area (ESHA), plan, site, and design development to protect the ESHA from any significant disruption of habitat values resulting from the discharge of stormwater or dry weather runoff flows.
- K. Avoid construction of new stormwater outfalls, and direct stormwater to existing facilities with appropriate treatment and filtration, where feasible. Where new outfalls cannot be avoided, plan, site, and design outfalls to minimize adverse impacts to coastal resources from outfall discharges.
- L. Implement appropriate protocols to manage BMPs (including installation and removal, ongoing operation, maintenance, inspection, and staff training) in all development, to protect coastal water resources for the life of the development.
- M. Minimize water quality impacts during construction by minimizing erosion and runoff, minimizing the discharge of sediment and other pollutants resulting from construction activities, and minimizing land disturbance and soil compaction.
- N. For all Tier 3 project categories identified in the City's Storm Water Management Program Guidance Manual (dated July 2013, or any amendment to or re-issuance thereof), including non-residential development, mixed use development, residential development in the Hillside Design District with 500 square feet or more of new or replaced impervious area, residential development with greater than 4,000 square feet of new or replaced impervious area, parking lots of 10 or more spaces, and public works projects, the following additional requirements shall apply. The level of detail provided to address these requirements shall be commensurate with the type

and scale of the project, and the potential for adverse water quality or hydrologic impacts to coastal waters.

- i. Conduct a polluted runoff and hydrologic site characterization by a qualified licensed professional, early in the development planning and design stage, and document the expected effectiveness of the proposed BMPs.
- ii. If a proposed development will not reduce the site's net total impervious surface area, implement a Runoff Volume Reduction BMP (or suite of BMPs) sized to retain on-site the larger of the following two volumes from the entire project site:
 - a. The runoff volume generated by the 1-inch, 24-hour design storm.
 - b. The difference between the pre- and post-development runoff volume produced by the 25-year 24-hour design storm.
- iii. If a proposed development will not reduce the site's net total impervious surface area, implement a Peak Runoff Discharge Rate BMP (or suite of BMPs) to prevent the post-development peak runoff discharge rate from the site from exceeding the pre-development rate for the 2-, 5-, 10-, and 25-year 24-hour storm events, from the entire project site.
- iv. Implement a Water Quality Treatment BMP (or suite of BMPs) sized to infiltrate, retain, or treat, at a minimum, the runoff produced by the 1-inch, 24-hour design storm for volume-based BMPs, or a constant rainfall intensity of 0.25 inch/hour for four hours for flow-based BMPs, from the entire project site.
- v. Use an LID approach to stormwater management that gives priority to preventive Site Design strategies to minimize post-development changes in the site's stormwater flow regime, supplemented by structural BMPs to retain on-site (by means of infiltration, evapotranspiration, or harvesting for later use), at a minimum, the runoff produced by the 1-inch, 24-hour design storm, to the extent appropriate and feasible.
- vi. Conduct an alternatives analysis to demonstrate that there are no appropriate and feasible alternative project designs that would substantially improve runoff retention, if a proposed development will not retain on-site the runoff produced by the 1-inch, 24-hour design storm using an LID approach.
- vii. The runoff Volume Reduction requirement and the Water Quality Treatment requirement are not additive, and may be met simultaneously in many cases. A Water Quality Treatment BMP (or suite of BMPs) shall be implemented to remove pollutants of concern from any portion of the runoff produced by the 1-inch, 24-hour design storm that will not be retained

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on-site, or if additional pollutant removal is necessary to protect coastal waters.

Policy 4.2-11 Storm Water Management Program Revisions. The following minor revisions may occur to the standards in the City's Storm Water Management Program, including the City's Storm Water BMP Guidance Manual (dated July 2013), or any amendment to or re-issuance thereof, without an LCP amendment:

- A. Addition of new BMPs determined to be more protective of the water quality and/or hydrology of coastal waters than currently included BMPs, or removal of BMPs determined to be ineffective. This does not include removal of BMPs on the basis that the City finds them to be infeasible or impractical;
- B. Addition of new development categories as Tier 3 Projects; and
- C. Reductions in the area of impervious surfaces used as a threshold to designate a specific development category as a Tier 1, 2, or 3 Project.

Any minor changes made to the Storm Water Management Program pursuant to the above list shall be accompanied by a finding that the changes will improve protection of the water quality and/or hydrology of coastal waters.

Any changes made to the Storm Water Management Program not included in the above list, and that are more or equally as protective of coastal resources as the City's approved Storm Water Management Program, that do not change the kind, location, intensity, or density of uses within the City, and that are determined by the executive director of the Coastal Commission to be consistent with the certified Land Use Plan and Chapter 3 of the Coastal Act shall require a minor LCP amendment. All other changes to the City's Storm Water Management Program shall require a major LCP amendment.

Management of City Harbor and Marine Areas

Policy 4.2-12 Clean Marina Program. Continue to implement and support the Clean Marina Program.

Policy 4.2-13 Maintain Pump-Out Facilities. Continue to maintain pump-out facilities in the Harbor.

Policy 4.2-14 Prohibit Offshore Dumping. Prohibit offshore dumping of sediments near kelp beds or reefs.

Policy 4.2-15 Cruise Ships. Prohibit cruise ships visiting Santa Barbara from discharging garbage, sewage, oil, hazardous waste, and/or graywater within 12 nautical miles of the City of Santa Barbara.

Policy 4.2-16 Minimize Aquatic Invasive Species. Minimize the spread of aquatic invasive species through education, outreach, and signage.

Wastewater

Policy 4.2-17 Sewer Upgrades and Maintenance. Continue to maintain and upgrade the public sewer system throughout the City with the goal of reducing public sewer overflows.

Policy 4.2-18 Maintain an Effective and Efficient Wastewater Treatment Facility. Maintain, and as necessary improve, an effective and efficient wastewater treatment facility to protect public health and safety, meet increasingly higher state and federal standards for effluent quality and related environmental considerations, and prevent impacts (e.g., on water quality and slope stability) that can be associated with on-site wastewater treatment systems and other decentralized forms of wastewater treatment.

Policy 4.2-19 Wastewater Renovation and Reuse. Continue the City's commitment to wastewater renovation and reuse designed to provide an additional source of water supply.

Stormwater

Policy 4.2-20 Stormwater Drainage System Maintenance. Continue to maintain the public stormwater drainage system throughout the City.

DEVELOPMENT REVIEW POLICIES

General

Policy 4.2-21 Biological Productivity and Water Quality. As outlined in Coastal Act Section 30231, the biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and encouraging wastewater reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Storm Water Management

Policy 4.2-22 Storm Water Management. All development shall be planned, sited, and designed to protect the water quality and hydrology of coastal waters in accordance with the requirements of the City's Storm Water Management Program, approved by the Central Coast Regional Water Quality Control Board under California's statewide National Pollutant Discharge Elimination System (NPDES) Phase II Small Municipal Separate Storm Sewer System (MS4) Storm Water Permit (Order No. 2013-0001 DWQ, effective July 1, 2013, or any amendment to or re-issuance thereof).

Construction

Policy 4.2-23 Minimize Water Quality Impacts During Construction. Minimize water quality impacts during construction by:

- A. Minimizing the project footprint, including area required for road access and required fire protection for the proposed development;
- B. Minimizing land disturbance activities of construction (e.g., clearing, grading, and cut-and-fill), especially in erosive areas (including steep slopes, unstable areas, and erosive soils);
- C. Phasing grading activities;
- D. Preventing unnecessary soil compaction;
- E. Implementing an erosion and sediment control plan that includes BMPs to stabilize soil and prevent pollution through erosion prevention techniques and sediment control measures;
- F. Implementing BMPs to minimize the discharge of other pollutants resulting from construction activities (such as paints, solvents, vehicle fluids, asphalt and cement compounds, preservatives from treated wood, trash, and debris) into runoff or coastal waters; and
- G. Monitoring land disturbance activities to ensure conformance to approved plans.

Policy 4.2-24 Revegetation. Areas disturbed by development activity shall, to the extent feasible, be revegetated prior to the rainy season (November 1-April 15).

On-site Wastewater Treatment Systems

Policy 4.2-25 On-site Wastewater Treatment Systems (OWTS) Standards. Site and design new OWTS to minimize impacts to sensitive environmental resources (including impacts from grading, site disturbance, and the introduction of increased amounts of water). Adequate setbacks and/or buffers shall be required to (1) protect habitat areas and surface waters

from lateral seepage from sewage effluent dispersal systems, and (2) preclude the need for bulkheads, seawalls, or revetments on or adjacent to beaches to protect the OWTS from coastal erosion, flooding, and inundation, initially or as a result of sea level rise.

Animal Confinement

Policy 4.2-26 Animal Confinement Facility BMPs. Confined animal facilities, including those at the Santa Barbara Zoo, shall implement BMPs to minimize erosion, and to minimize the transport of sediment and other pollutants in runoff from the development into coastal waters.

Policy 4.2-27 Animal Confinement Facility Waste Management BMPs. Confined animal facilities shall be sited and designed to manage, contain, and dispose of animal waste using the most effective BMPs, to prevent waste from being introduced to runoff, surface waters, or groundwater.