4.8.1 INTRODUCTION

This resource section evaluates the potential environmental effects related to hydrology and water quality associated with implementation of PLAN Hermosa. The analysis includes a review of the watershed, surface water, groundwater, flooding, tsunami, wave run-up, sea level rise, stormwater, and surface water and groundwater quality. Water supply and wastewater treatment are discussed in Section 4.13, Public Services, Community Facilities, and Utilities. Topics including erosion and sedimentation are discussed in Section 4.5, Geology and Soils. Issues regarding wetlands and waters of the United States are discussed in Section 4.3, Biological Resources, and contamination from hazardous materials is discussed in Section 4.7, Hazards and Hazardous Materials. Policies and implementation actions from the PLAN Hermosa Infrastructure Element, Sustainability + Conservation Element, and Public Safety Element guide development and infrastructure practices to protect surface water and groundwater from degradation associated with runoff and pollution, reduce water consumption, and protect against flooding hazards.

NOP Comments: No comments were received in response to the Notice of Preparation (NOP) addressing hydrology and water quality concerns. Comments included written letters and oral comments provided at the NOP scoping meeting.

Reference Information: Information for this resource section is based on numerous sources, including the PLAN Hermosa Technical Background Report and other publicly available documents. The Technical Background Report prepared for the project is attached to this EIR as **Appendix C-11**.

4.8.2 ENVIRONMENTAL SETTING

Appendix C-11 describes in detail the regional and local hydrology as well as the groundwater hydrology of the planning area. Federal Emergency Management Agency (FEMA) flood zones are described and mapped. Surface water and groundwater quality are also discussed. Key findings from the Technical Background Report are summarized below.

HYDROLOGY

- **Watershed:** The planning area is located in the Santa Monica Bay Watershed, which overlies the West Coast subbasin of the Coastal Plain of the Los Angeles Basin. The West Coast subbasin is adjudicated and commonly referred to as the West Coast Basin. It is bounded on the north by the Ballona Escarpment, an abandoned erosional channel from the Los Angeles River. It is bounded on the east by the Newport-Inglewood fault zone and on the south and west by the Pacific Ocean and consolidated rocks of the Palos Verdes Hills (DWR 1999). The Los Angeles River crosses the southern surface of the subbasin through the Dominguez Gap, and the San Gabriel River crosses the subbasin through the Alamitos Gap. Both rivers then flow into San Pedro Bay (DWR 2004). Major hydrologic inputs to the basin include precipitation and flows from the South Lahontan Region and the Colorado River Region. The Santa Monica Bay Watershed flows into the Pacific Ocean. The watershed has an annual discharge of more than 30 billion gallons of stormwater and urban runoff each year through 200 outlets. Urban runoff is caused by precipitation falling on impermeable pavement.
- **Surface Water:** No freshwater waterways or surface water bodies are located in the city. Approximately 1.8 miles of the western edge of the planning area abuts the south end of Santa Monica Bay. This area includes a 400-foot-wide sandy beach between the Pacific Ocean and urban development. Urban runoff (stormwater) flows from inland locations through the city to the Pacific Ocean through a network of drainage lines identified in Figure 11-1 in **Appendix C-11,** and included below as **Figure 4.8-1 (Stormwater Drainage**

Map). The network is a mix of County-owned and City-owned lines that generally run east to west along major roads, including 16th Street, Pier Avenue, and 2nd Street. The lines generally terminate through one of 11 outfalls at the west end of the city on the beach or in the Pacific Ocean.

- **Groundwater:** The planning area is in the West Coast subbasin of the Coastal Plain of the Los Angeles Basin. The water in underlying aquifers is confined throughout most of the basin. Table 11-1 in **Appendix C-11** identifies the principal aquifers in the West Coast subbasin. The Silverado aquifer is confined, underlies most of the basin, and is the most productive aquifer in the basin. It ranges from 100 to 500 feet thick and yields 80 to 90 percent of the groundwater extracted annually from the basin. The storage capacity of the Silverado aquifer is estimated to be 6.5 million acre-feet (DWR 1961). Groundwater recharge in the planning area is limited because Hermosa Beach is generally built out with urban development, with the exception of open space areas such as parks, the Hermosa Valley Greenbelt, and the beach.
- **Floodplain:** Figure 11-2 in **Appendix C-11,** included below as **Figure 4.8-2 (FEMA Flood Zone Map)**, illustrates FEMA's (2008) 100-year flood zone areas for Hermosa Beach. The entirety of the city's sandy beaches (extending from offshore waters to The Strand) are identified as a 100-year flood zone with the designation of Zone A, which means no base flood elevations were determined. The remainder of the city is outside of the 100-year flood zone. Because of projected sea level rise, the area inundated by 100-year floods is expected to increase through the planning horizon; however, no regulatory maps currently identify floodplains under projected conditions.
- **Tsunami:** The probability of a tsunami in the planning area is low. However, if a tsunami should occur, the consequences would be great (City of Hermosa Beach 2005). As illustrated in Figure 11-3 in **Appendix C-11,** included below as **Figure 4.8-3 (Tsunami Inundation Zone)**, the tsunami inundation line runs parallel with Hermosa Avenue, except in the northern part of the planning area where it extends eastward as much as one city block.
- **Wave Run-Up:** The Hermosa Beach coastline is exposed to waves generated by winter and summer storms originating in the Pacific Ocean. It is not uncommon for these storms to cause 15-foot swells. The occurrence of such a storm event, in combination with high astronomical tides and strong winds, can cause a wave run-up and allow storm waves to come in higher than at normal elevations along the coastline. Hermosa Beach has large areas along the beachfront that are less than 15 feet above sea level. Normally, the very wide beach will buffer these areas from the surf. During heavy storm seasons, the beach can be eroded to such an extent that properties may be subject to wave run-up. This has occurred during past El Niño events and during astronomical high tides. Resulting damage has been primarily to private property, although the extent of the damage has not been documented (City of Hermosa Beach 2005).
- **Sea Level Rise:** For the Los Angeles region, sea level rise is expected with an increase of 0.3 inches to 2.0 feet from 2000 to 2050 and 1.3 to 5.6 feet from 2000 to 2100 (NRC 2012; Grifman et al. 2013). As noted above, coastal flooding is exacerbated by storm surge and high tides. Although there is variability in sea level rise projections, even a minor increase in sea level could lead to substantial increases in coastal flooding severity and frequency. These conditions could affect coastal infrastructure and increase the effect of flooding from coastal-related events in the planning area. The City is conducting a project to forecast how coastal shallow groundwater elevation and salinity may respond to project increases in sea level rise in the sandy, low-lying coastal soils to evaluate the vulnerability of existing storm drain outfalls that could be inundated at high tide and cause localized flooding.

WATER QUALITY

Surface Water

- There are no potable surface water resources in the city. However, Hermosa Beach and Santa Monica Bay are designated as "water quality–limited" for impairments under federal Clean Water Act Section 303(d), indicating that these water bodies are not reasonably expected to attain or maintain water quality standards due to impairments without additional regulation. Impairment is measured by Total Maximum Daily Load (TMDL), the maximum amount of a pollutant that a body of water can receive while still meeting water quality standards. Table 11-2 in the Technical Background Report (see **Appendix C-11**) identifies the listing category, pollutant, and pollutant type for Hermosa Beach and Santa Monica Bay.
- The Los Angeles Regional Water Quality Control Board (RWQCB) and the US Environmental Protection Agency (EPA) have developed two TMDLs for Hermosa Beach: the Santa Monica Bay Bacteria Dry Weather TMDL and the Santa Monica Bay Bacteria Wet Weather TMDL (Los Angeles RWQCB 2002a, 2002b). The Santa Monica Bay Bacteria Dry Weather TMDL (Resolution No. 02-004, Amendment to the Water Quality Control Plan–Los Angeles Region) notes that elevated bacterial indicator densities were causing impairment of water contact recreation beneficial uses at many Santa Monica Bay beaches. Dry weather bacteriological objectives identified in the Los Angeles Region Basin Plan include limits for total coliform density, fecal coliform density, and enterococcus density. The Santa Monica Bay Bacteria Dry Weather TMDL sets the number of days that can be in exceedance of the limits identified in the basin plan. Weekly shoreline monitoring is conducted at seven sites under the Coordinated Shoreline Monitoring Plan for the Santa Monica Bay beaches bacteria TMDL.
- The City of Hermosa Beach is not aware of any significant water quality degradation in the watershed during the latest reporting year (2014–15). Two shoreline monitoring sites predominantly influenced by runoff from the city have maintained consistently better water quality than the reference beach site monitoring location.[1] An open beach shoreline monitoring location at the extension of 26th Street in Hermosa Beach has historically exhibited a lower rate of exceedence than the reference beach. The nearest storm drain outfall ends approximately 300 feet from the shoreline. TMDL bacteria objectives for this site were not exceeded during the 2014–15 reporting year.
- The City has implemented several projects to reduce and minimize pollutants in stormwater runoff generated by land uses in the city to help protect water quality. The Hermosa Strand Infiltration Trench is a subsurface trench approximately 1,000 feet long along The Strand and diverts dry weather flows year-round from the 36-acre area of the Pier Avenue storm drain. Monitoring shows that the system effectively removes bacteria load from runoff diverted to the trench. The Pier Avenue Improvement Project is a "green" multi-benefit streetscape improvement that retrofitted the city's main street to capture and treat stormwater/urban runoff from residential areas and commercial development in the downtown corridor (36-acre drainage area). The project has reduced dry weather flows and wet weather low flows through infiltration in both subwatersheds. The City's Public Works Department implements green streets retrofits whenever the opportunity arises as part of capital improvement projects through installation of infiltration boxes within the public right-of-way. A section of Hermosa Avenue has been retrofitted with this system. The

[1] The reference beach is Leo Carillo Beach at the outlet of Arroyo Sequit Canyon, a freshwater creek draining 12 square miles of almost entirely undeveloped open space.

City has also installed trash filter/capture inserts on several catch basins. As part of the infrastructure vulnerability assessment noted above, the City is assessing how projected increases in sea level rise could affect existing and planned stormwater infiltration systems and low-flow diversions designed to meet stormwater quality standards.

- Two additional TMDLs were approved by the Los Angeles RWQCB and the EPA after the 303(d) list: Santa Monica Bay Total Maximum Daily Loads for DDTs and PCBs (2012) and Santa Monica Bay Nearshore and Offshore Debris TMDL (2010). As a co-permittee to the Los Angeles MS4 NPDES Permit (see below), the City of Hermosa Beach is responsible for meeting water quality–based effluent limitations that allow Santa Monica Bay to meet TMDL targets identified in the Santa Monica Bay Total Daily Maximum Loads for DDTs and PCBs and the Santa Monica Bay Nearshore and Offshore Debris TMDL.
- Stormwater runoff into Santa Monica Bay is regulated primarily through four National Pollutant Discharge Elimination System (NPDES) permits:
  - The municipal separate storm sewer system (MS4) NPDES permit issued to the municipalities in the urbanized area of Los Angeles County, except the City of Long Beach, which has its own MS4 NPDES permit.
  - A separate statewide stormwater permit specifically for the California Department of Transportation (Caltrans)
  - The statewide Construction Activities Stormwater General Permit
  - The statewide Industrial Activities Stormwater General Permit

  The Los Angeles MS4 permit was first issued in 1990 and includes 85 co-permittees, including Los Angeles County and the City of Hermosa Beach. The latest revision of the permit (Order No. R4-2012-0175) was issued on November 8, 2012, and amended by the State Water Resources Control Board (Order No. WQ 2015-0075) on June 16, 2015.

Groundwater

- In the Silverado zone, the character of water varies considerably. In the coastal region, the water is calcium chloride in character, transitioning into sodium bicarbonate moving inland. Data from 45 public supply wells shows average total dissolved solids content of 720 milligrams per liter and a range of 170 to 5,510 milligrams per liter (DWR 2004).

FIGURE 4.8-1
STORMWATER DRAINAGE MAP

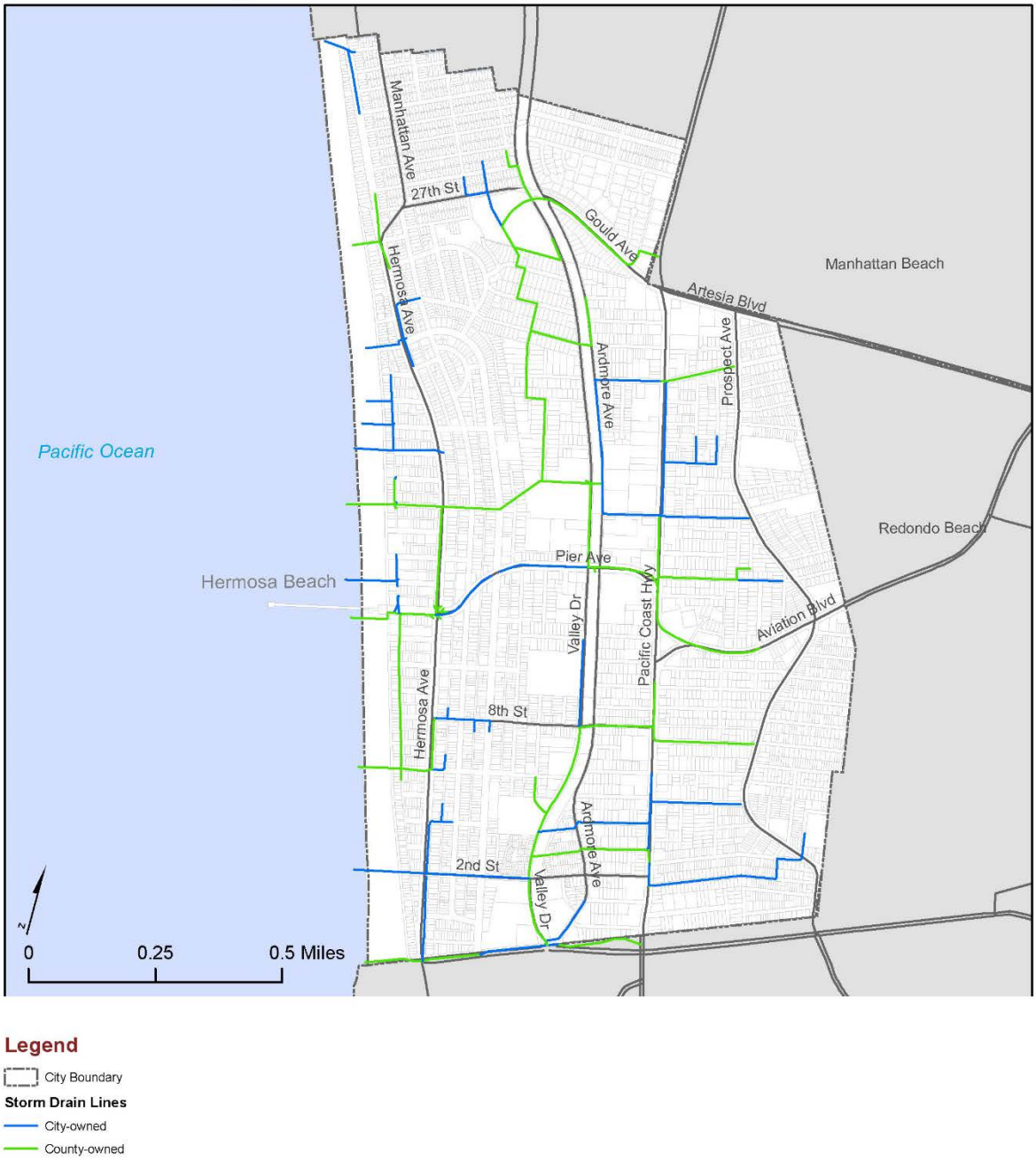

FIGURE 4.8-2
FEMA FLOOD ZONE MAP

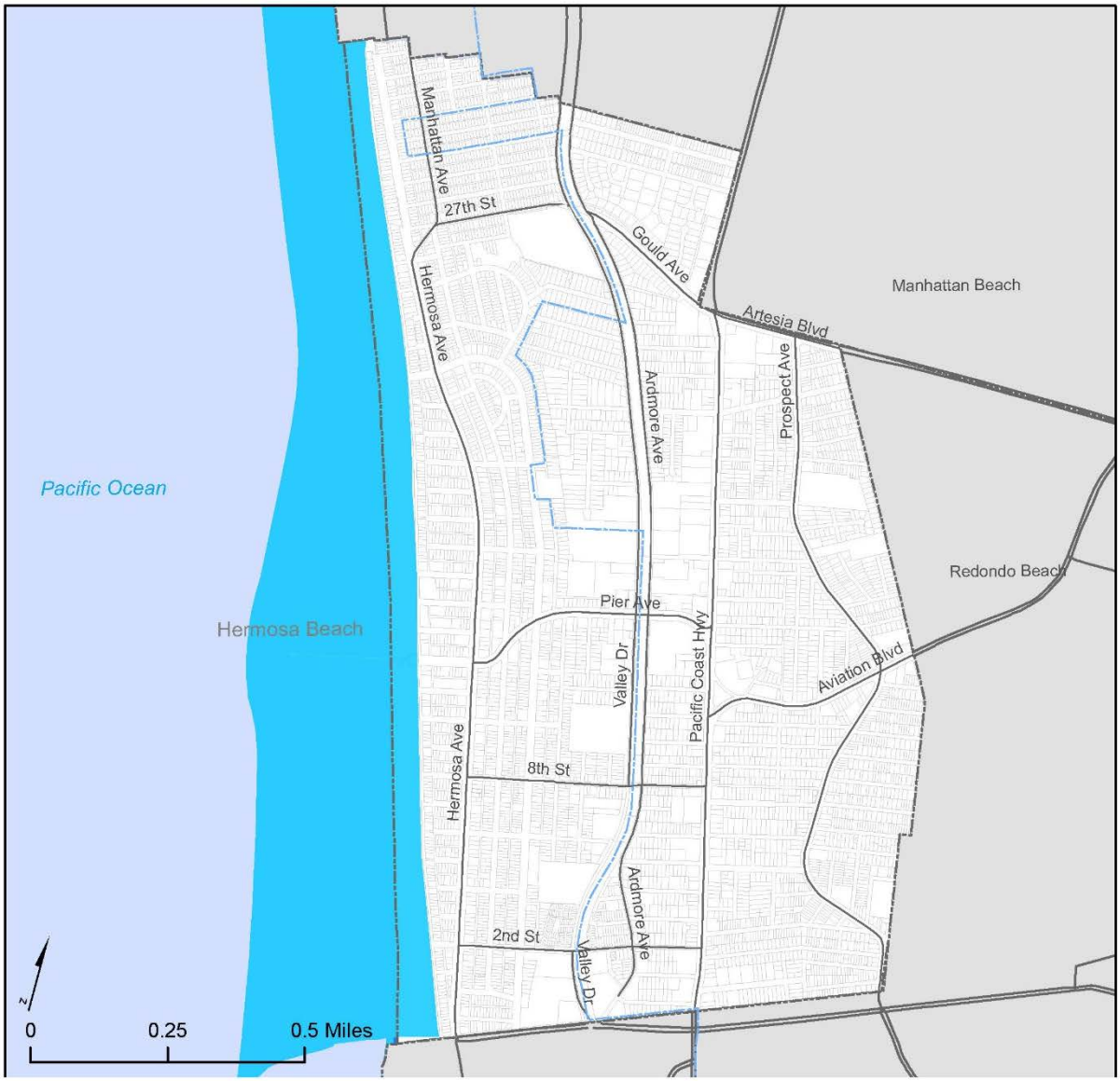

FIGURE 4.8-3
TSUNAMI INUNDATION ZONE

4.8.3 REGULATORY SETTING

Federal, state, and local laws, regulations, and policies pertain to hydrology and water quality in the planning area. They provide the regulatory framework for addressing all aspects of hydrology and water quality that would be affected by implementation of PLAN Hermosa. The regulatory setting for hydrology and water quality is discussed in detail in **Appendix C-11**. Key regulations used to reduce potential impacts of the proposed project are summarized below.

FEDERAL

- **Clean Water Act:** The Clean Water Act (CWA) of 1972 is the primary federal law that governs and authorizes the EPA and the states to implement activities to control water quality. The following sections outline the various water quality elements of the CWA that apply to PLAN Hermosa.
  - Water Quality Criteria and Standards. The EPA is the federal agency with primary authority for implementing regulations adopted under the Clean Water Act. The EPA has delegated to the State of California the authority to implement and oversee most of the programs authorized or adopted for CWA compliance through the State's Porter-Cologne Act, described below. Under federal law, the EPA has published water quality regulations under Volume 40 of the Code of Federal Regulations. Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of the designated beneficial uses of the water body in question and criteria that protect the designated uses. Section 304(a) requires the EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use.
  - National Pollutant Discharge Elimination System Permit Program. The CWA established the NPDES permit program to regulate municipal and industrial discharges to surface waters of the United States. A discharge from any point source is unlawful unless the discharge is in compliance with an NPDES permit. Federal NPDES permit regulations have been established for broad categories of point source discharges including industrial wastewater, municipal wastewater, and point sources of stormwater runoff, including municipal separate storm sewer systems and industrial stormwater which includes construction sites. NPDES permits generally establish effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge, prohibitions on discharges not specifically allowed under the permit, and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities. The City is regulated because its stormwater is managed as part of a large, interconnected flood control system operated by the Los Angeles County Flood Control District. Construction sites in the planning area that disturb 1 acre or more must obtain coverage under the statewide NPDES Construction General Permit. Currently there are no industrial facilities in the planning area that are subject to the statewide NPDES Industrial General Permit. The RWQCBs implement the NPDES permit system (see additional information under the State subsection below). The planning area is within the jurisdiction of the Los Angeles RWQCB.
  - Section 401 Water Quality Certification or Waiver. Under Section 401 of the CWA, an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the United States) must first obtain a certificate from the appropriate state agency

indicating that the fill is consistent with the state's water quality standards and criteria. In California, the nine Regional Water Quality Control Boards have the authority to grant water quality certification or waive requirements.

- Section 303(d) Impaired Waters List. Section 303(d) of the CWA requires states to develop lists of water bodies that would not attain water quality objectives after implementation of required levels of treatment by point-source dischargers (municipalities and industries). Section 303(d) requires that the state develop a TMDL for each of the listed pollutants. As noted previously, the TMDL is the amount of loading that the water body can receive and still be in compliance with water quality objectives. The TMDL can also act as a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. The state-prepared TMDL must include an allocation of allowable loadings to point and nonpoint sources, with consideration of background loadings (sources of naturally occurring pollutants) and a margin of safety. The TMDL must also include an analysis that shows links between loading reductions and the attainment of water quality objectives. NPDES permit limits for listed pollutants must be consistent with the waste load allocation prescribed in the TMDL. After implementation of a TMDL, it is intended that the problems which led to placement of a given pollutant on the Section 303(d) list would be remediated.

- **National Flood Insurance Program:** FEMA administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA also issues Flood Insurance Rate Maps (FIRMs) that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in communities. FEMA established the design standard for flood protection in areas covered by FIRMs, with the minimum level of flood protection for new development determined to be a 1-in-100 probability of annual exceedance (i.e., the 100-year flood event). As developments are proposed and constructed, FEMA is also responsible for issuing revisions to FIRMs, such as Conditional Letters of Map Revision and Letters of Map Revision through the local agencies that work with the National Flood Insurance Program.
- **US Army Corps of Engineers:** The US Army Corps of Engineers (USACE) is responsible for issuing permits for the placement of fill or discharge of material into waters of the United States. These permits are required under Clean Water Act Sections 401 and 404. Water supply projects that involve stream construction, such as dams or other types of diversion structures, trigger the need for these permits and related environmental reviews by the USACE. The USACE also is responsible for flood control planning and assisting state and local agencies with the design and funding of local flood control projects.

STATE

- **California Coastal Act of 1976:** The California Coastal Act of 1976 and the California Coastal Commission, the state's coastal protection and planning agency, were established by voter initiative in 1972 to plan for and regulate new development and to protect public access to and along the shoreline. The Coastal Act considers water quality and water-related public safety concerns as issues of public importance.
- **State Water Resources Control Board:** In California, the State Water Resources Control Board (SWRCB) has broad authority over issues related to controlling water quality for the state. The SWRCB is responsible for developing statewide water quality policy and exercises the powers delegated to the state by the federal government under the Clean Water Act. Regional authority for planning, permitting, and enforcement is delegated to the nine Regional Water Quality Control Boards (RWQCBs). The regional boards are required to

formulate and adopt basin plans for all areas in the region and establish water quality objectives in the plans. California water quality objectives (or "criteria" under the CWA) are found in the basin plans adopted by the SWRCB and each of the nine regional boards. The Los Angeles RWQCB is responsible for the Hermosa Beach planning area and the surrounding region. In 2006, the SWRCB adopted Order Number 2006-003 establishing General Waste Discharge Requirements for all publicly owned or operated sanitary sewer systems in California. The Waste Discharge Requirements require owners and operators of sewer collection systems to report sanitary sewer overflows using the California Integrated Water Quality System and to develop and implement a Sewer System Management Plan. The Hermosa Beach Sanitary Sewer Master Plan, adopted in 2009 and updated in 2011, details sewer collection system operations, maintenance, repair, and funding. Section 4.13, Public Services, Community Facilities, and Utilities, of this EIR addresses wastewater treatment issues and the state regulations that apply to the demonstration of adequate water supply for the future water demands caused by implementation of PLAN Hermosa.

- **Title 22 Standards:** California's drinking water quality standards are contained in Title 22 of the California Code of Regulations. Water quality standards are enforceable limits composed of two parts: the designated beneficial uses of water and criteria (i.e., numeric or narrative limits) to protect those beneficial uses. Municipal and domestic supply is among the "beneficial uses" defined in Section 13050(f) of the Porter-Cologne Act as uses of surface water and groundwater that must be protected against water quality degradation. Drinking water maximum contaminant levels (MCLs) directly apply to water supply systems "at the tap" (i.e., at the point of use by consumers in, for example, their home and office) and are enforceable by the State and the Los Angeles County Department of Public Health. When fully health-protective, MCLs may also be used to interpret narrative water quality objectives prohibiting toxicity to humans in water designated as a source of drinking water in the basin plan.
- **Porter-Cologne Water Quality Control Act:** The Porter-Cologne Act is California's statutory authority for the protection of water quality. Under the act, the State must adopt water quality policies, plans, and objectives that protect the state's waters for the use and enjoyment of the people. The act sets forth the obligations of the SWRCB and the RWQCBs to adopt and periodically update basin plans. Basin plans are the regional water quality control plans required by both the Clean Water Act and the Porter-Cologne Act in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. The act also requires waste dischargers to notify the RWQCBs of their activities through the filing of reports of waste discharge and authorizes the SWRCB and the RWQCBs to issue and enforce waste discharge requirements (WDR), NPDES permits, Section 401 water quality certifications, or other approvals. The RWQCBs also have authority to issue waivers to reports of waste discharge and/or WDRs for broad categories of "low threat" discharge activities that have minimal potential for adverse water quality effects when implemented according to prescribed terms and conditions.
- **Los Angeles Regional Water Quality Control Board Basin Plan:** The planning area is in the jurisdiction of the Los Angeles RWQCB, which is responsible for the preparation and implementation of the water quality control plan for the Los Angeles region (Los Angeles RWQCB 1995). The basin plan defines the beneficial uses, water quality objectives, implementation programs, and surveillance and monitoring programs for waters of the coastal drainages in the Los Angeles region between Rincon Point on the coast of western Ventura County and the eastern Los Angeles County line. The basin plan contains specific numeric water quality objectives that apply to certain water bodies or portions of water bodies. Objectives have been established for bacteria, dissolved oxygen, pH, pesticides,

electrical conductivity, total dissolved solids, temperature, turbidity, and trace elements. Numerous narrative water quality objectives have also been established.

- **California Ocean Plan:** Section 13170.2 of the California Water Code directs the SWRCB to formulate and adopt a water quality control plan for California's ocean waters. The SWRCB first adopted this plan, known as the California Ocean Plan, in 1972. The California Water Code also requires a review of the California Ocean Plan at least every three years to guarantee that current standards are adequate and are not allowing degradation to indigenous marine species or posing a threat to human health. The current iteration of the California Ocean Plan (SWRCB 2012) establishes water quality objectives for California's ocean waters and provides the basis for regulation of wastes discharged into the state's coastal waters.
- **California State Nondegradation Policy:** In 1968, the SWRCB adopted a nondegradation policy aimed at maintaining high quality for waters in California. The nondegradation policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of California. The policy provides as follows:
  - Where the existing quality of water is better than required under existing water quality control plans, such quality would be maintained until it has been demonstrated that any change would be consistent with maximum benefit to the people of the state and would not unreasonably affect present and anticipated beneficial uses of such water.
  - Any activity which produces waste or increases the volume or concentration of waste and which discharges to existing high-quality waters would be required to meet waste discharge requirements, which would ensure (1) pollution or nuisance would not occur and (2) the highest water quality consistent with the maximum benefit to the people of the state would be maintained.
- **NPDES Permit System and Waste Discharge Requirements for Construction:** The SWRCB and the Los Angeles RWQCB have adopted specific NPDES permits for a variety of activities that have potential to discharge wastes to waters of the State. The SWRCB General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ) applies to all land-disturbing construction activities that would affect 1 acre or more. The Los Angeles Regional Water Quality Control Board has issued a general NPDES permit and general WDRs governing construction-related dewatering discharges in the Los Angeles RWQCB's jurisdictional area (Los Angeles RWQCB Order No. R4-2003-0111; NPDES No. CAG994004). The Los Angeles RWQCB may also issue site-specific WDRs, or waivers to WDRs, for certain waste discharges to land or waters of the State. Activities subject to the NPDES general permit for construction activity must develop and implement a stormwater pollution prevention plan (SWPPP). The SWPPP includes a site map and description of construction activities and identifies the best management practices that will be employed to prevent soil erosion and discharge of other construction-related pollutants, such as petroleum products, solvents, paints, and cement that could contaminate nearby water resources.
- **Municipal Stormwater Permit Program:** The SWRCB Municipal Storm Water Permitting Program regulates stormwater discharges from municipal separate storm sewer systems (MS4s). The current MS4 permit (Order No. R4-2012-0175 [NPDES Permit No. CAS004001, Waste Discharge Requirements for Municipal Separate Storm Sewer System [MS4] Discharges within the Coastal Watersheds of Los Angeles County], as amended by Order No. WQ 2015-0075) requires the discharger to develop and implement a stormwater

management plan/program with the goal of reducing the discharge of pollutants in stormwater to the maximum extent practicable (MEP). The MEP is the performance standard specified in federal Clean Water Act Section 402(p). The management programs specify what best management practices will be used to address certain program areas. The permit establishes new performance criteria for new development and redevelopment projects in the Coastal Zone, including low impact development (LID). The City of Hermosa Beach is a co-permittee under the MS4 permit. As a co-permittee, the City is required to maintain adequate legal authority within its respective jurisdiction to control pollutant discharges and to require the use of control measures to prevent or reduce the discharge of pollutants into the MS4 to achieve water quality standards.

- **Recycled Wastewater Requirements:** Wastewater recycling in California is regulated under California Code of Regulations Title 22, Division 4, under the jurisdiction of the California Department of Public Health. The intent of these regulations is to ensure protection of public health associated with the use of recycled water. The regulations establish acceptable levels of constituents in recycled water for a range of uses and prescribe means for ensuring reliability in the production of recycled water. Using recycled water for nonpotable uses is common throughout the state and is an effective means of maximizing use of water resources. The Los Angeles RWQCB establishes water reclamation requirements under the Title 22 regulations and is responsible for implementing wastewater recycling projects.

REGIONAL

- **Enhanced Watershed Management Plan for Beach Cities:** Following adoption of the MS4 permit, the Cities of Hermosa Beach, Manhattan Beach, Redondo Beach, and Torrance, together with the Los Angeles County Flood Control District (LACFCD), collectively referred to as the Beach Cities Watershed Management Group (Beach Cities WMG) agreed to collaborate on the development of an Enhanced Watershed Management Program (EWMP) for the Santa Monica Bay and Dominguez Channel Watershed areas within their jurisdictions (referred to as the Beach Cities EWMP Area). Under Part IV.C of the MS4 permit (Watershed Management Program), the permittees are afforded the flexibility to develop watershed management programs to implement the requirements of the permit on a watershed scale through customized strategies, control measures, and best management practices. The Beach Cities EWMP summarizes watershed-specific water quality priorities identified by the Beach Cities WMG; outlines the program plan, including specific strategies, control measures, and best management practices to achieve water quality targets; and describes the quantitative analysis completed to support target achievement and permit compliance. A reasonable assurance analysis was prepared in conjunction with the EWMP to demonstrate on a quantitative basis that the EWMP will achieve the requirements of the MS4 permit for the members of the Beach Cities Watershed Management Group. A timeline, estimated costs, and potential funding sources are also described in the EWMP.

  Currently, regional best management practices have been constructed within the Beach Cities EWMP planning area, including two in Hermosa Beach (Pier Avenue Improvement project and Hermosa Strand Infiltration Trench project). Future projects proposed in Hermosa Beach are the Hermosa Beach Infiltration Beach project, the Hermosa Beach Greenbelt Infiltration project, and two green street projects. The projects in Hermosa Beach have not been funded, and a schedule for implementation has not yet been developed.

  The Beach Cities EWMP was approved by the Los Angeles RWQCB on April 18, 2016, under its authority to administer the MS4 permit. The EWMP does not establish policies or regulations that the participating cities must impose on new development or

redevelopment, nor does the program require the construction of the specific features identified in the EWMP. However, the approach described in the EWMP, in combination with the required LID-based best management practices that each participating city must impose on development, is anticipated to protect and potentially improve water quality in Santa Monica Bay from pollutants in stormwater runoff.

LOCAL

- **Stormwater and Urban Runoff Pollution Control Regulations:** Chapter 8.44 of the Hermosa Beach Municipal Code ensures consistency with the requirements of the federal Clean Water Act and the California Porter-Cologne Water Quality Control Act, and acts amendatory thereof or supplementary thereto, applicable implementing regulations, and the Municipal NPDES Permit, and any amendment, revision, or reissuance thereof.
- **Low Impact Development Ordinance:** The City has been requiring LID best management practices for certain residential and commercial projects since 2015, when it adopted a customized amendment to the California Green Building Code. As required by the current MS4 permit, Hermosa Beach Municipal Code Section 8.44.095 (LID Ordinance) sets forth low impact development requirements for new development and redevelopment (Ordinance No. 15-1351). All new development or new building construction in Hermosa Beach will be required to comply with the LID requirements regardless of the area of impervious surface or acreage disturbed, which exceeds the minimum applicability requirements of the MS4 permit. Consistent with the MS4 permit, redevelopment projects of any type that add or replace more than 5,000 square feet of impervious surface area will also be required to comply with the LID requirements, with the further proviso that redevelopment projects located directly adjacent to a significant ecological area will be subject to LID requirements if they propose addition or replacement of more than 2,500 square feet of impervious surface area.[2] The City has been implementing the LID Ordinance requirements since 2015.
- **Green Street Policy:** The City adopted a policy (Resolution No. 15-0013) in 2015 to implement green street best management practices as elements of street and roadway projects, including public works capital improvement projects, to the maximum extent practicable. This policy is intended to demonstrate compliance with the MS4 permit. Water quality improvement and groundwater replenishment benefits are achieved through designs that minimize impervious area and incorporate bioretention elements (e.g., vegetated swales) to facilitate natural pollutant removal while allowing stormwater retention and/or infiltration.
- **Floodplain Management Regulations:** Hermosa Beach Municipal Code Chapter 8.52 regulates development in floodplains to minimize public and private losses due to flood conditions through provisions designed to protect human life and health; minimize expenditure of public money for costly flood control projects; minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; minimize prolonged business interruptions; and minimize damage to public facilities and utilities. To accomplish these purposes, this chapter includes regulations to restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities; require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction; control the alteration of natural floodplains, stream channels, and natural protective barriers which

[2] The complete text of the LID Ordinance may be found at: http://www.codepublishing.com/CA/HermosaBeach/#!/hermosabeach08/HermosaBeach0844.html#8.44.095

help accommodate or channel floodwaters; control filling, grading, dredging, and other development which may increase flood damage; and prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.

4.8.4 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

For the purposes of this EIR, impacts on hydrology and water quality are considered significant if implementation of PLAN Hermosa would:

1) Violate any water quality standards or waste discharge requirements.
2) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted).
3) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation.
4) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding.
5) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
6) Otherwise substantially degrade water quality.
7) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
8) Place within a 100-year flood hazard area structures that would impede or redirect flood flows.
9) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.
10) Result in inundation by seiche, tsunami, or mudflow.

ANALYSIS APPROACH

The analysis of impacts is based on the likely consequences of implementation of PLAN Hermosa compared to existing conditions. The following analysis of impacts on hydrology and water quality is qualitative and based on available hydrologic and water quality information for the planning area, along with a review of regional information. The analysis assumes that all future and existing development in the planning area complies with applicable laws, regulations, and plans. An analysis of cumulative impacts uses qualitative information for the planning area, Santa Monica Bay, and the West Coast subbasin of the Coastal Plain of the Los Angeles Basin.

DRAFT PLAN HERMOSA POLICIES AND IMPLEMENTATION ACTIONS

PLAN Hermosa policies and implementation actions that address hydrology and water quality include the following:

Policies

Public Safety Element

- **1.1 Evaluate risks.** New buildings and infrastructure will evaluate seismic, fire, flood, and coastal storm hazard risks and comply with California Building Code standards to minimize risk.
- **1.3 Tsunami Playbook.** Utilize the Los Angeles County Tsunami Playbook in the evaluation and response of tsunami risk.
- **1.5 Minimize coastal flooding.** Natural interventions, green infrastructure, and infiltration systems will be utilized to minimize damage from coastal flooding.
- **1.6 Minimize coastal hazards.** Injuries and loss of life are prevented, and property loss and damage from coastal hazards are minimized.
- **1.7 Reduce flood vulnerability.** Encourage existing structures, critical facilities, and infrastructure to reduce flood vulnerability.
- **1.8 Reduce stormwater runoff.** Reduce stormwater runoff consistent with local stormwater permits.
- **1.11 Secure funds.** Establish centralized internal procedures to coordinate efforts for securing funds that support risk reduction measures.
- **2.1 Integrate resilience.** Integrate resilience to anticipated sea level rise impacts into project designs when repairing and replacing aging infrastructure.
- **2.2 Mitigate impacts.** Require new development and redevelopment projects to consider and mitigate relevant sea level rise impacts.
- **2.3 Enhance awareness.** Enhance local understanding of sea level rise and keep decision-makers and the community aware of potential impacts based on best available science.
- **2.4 Provide public information.** Provide public information describing new flooding risks under a 55-inch sea level rise scenario in areas previously not affected by flooding.
- **2.5 Maintain beach widths.** Current beach widths are maintained under changing sea level conditions.
- **2.6 Consider sea level rise.** Consider the combined effects of sea level rise when evaluating potential tsunami and storm surge impacts.
- **2.7 Support regional approaches.** Support regional approaches to sediment management, beach replenishment, and adaptive shoreline protection to allow Hermosa Beach to voice its needs, allow for coordination with neighboring jurisdictions, and identify creative finance mechanisms to continue the replenishment program.
- **2.8 Identify erosion problems.** Continue to monitor beach width and elevations to identify potential erosion problems.
- **4.1 Public awareness.** Increase public awareness of hazards, emergency response, and recovery.

- **4.2 Promote community-based programs.** Promote community-based programs in fire safety and emergency preparedness, including neighborhood-level programs and programs with businesses.
- **4.3 SEMS and NIMS training.** Increase City employee capacity through the Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS) compliant training and Emergency Operations Center (EOC) drills to identify hazards, and assist in emergency preparedness, response, and recovery.
- **4.4 Utilize City media resources.** Establish communication protocols and utilize City media resources to provide information prior to, during, or after events posing risk to community health safety, and welfare.
- **4.5 Responsive neighborhood groups.** Encourage neighborhood groups to identify, consider, and prepare for the needs of neighbors with access and functional needs to adequately respond to disasters.
- **4.6 Vulnerable populations.** Establish an emergency plan to take care of vulnerable populations such as children, the elderly, and tourists during hazardous events.
- **6.1 Regularly update plans.** Regularly update disaster preparedness and emergency response plans.
- **6.2 Coastal incidents.** Collaborate and maintain communication between the City, LA County Lifeguards, and the United States Coast Guard concerning incidents on or near the coast.
- **6.3 Invest in critical facilities.** Invest in public and critical facilities to make them more resilient to the potential impacts of natural disasters.

Infrastructure Element

- **4.8 Holistic systems planning.** Develop a comprehensive approach to water infrastructure that integrates sewer system planning with potable and recycled water systems, stormwater systems, and increased conservation awareness.
- **5.1 Integration of stormwater best practices.** Integrate stormwater infiltration best practices when initiating streetscape redevelopment or public facility improvement projects.
- **5.2 Green infrastructure.** Naturalize flood channels that enhance flood protection capacity before employing other management solutions.
- **5.3 Natural features.** Integrate natural features, such as topography, drainage, and trees, into the design of streets and rights-of-way.
- **5.4 Conservation behavior.** Encourage community behavior changes to reduce urban runoff pollution.
- **5.5 Stormwater system maintenance.** Maintain, fund, and regularly monitor the City's stormwater infrastructure.
- **5.6 Stormwater system repairs.** Ensure that stormwater system repairs are included in maintenance plans for other City infrastructure and that repairs and maintenance are completed in a timely manner to prevent additional repair costs.
- **5.7 Stormwater permits.** Strictly implement, enforce, and monitor MS4 NPDES Permit requirements through stormwater ordinances.

- **5.8 Low impact development.** Require new development and redevelopment projects to incorporate low impact development (LID) techniques in project designs, including but not limited to on-site drainage improvements using native vegetation to capture and clean stormwater runoff.

Sustainability + Conservation Element

- **5.2 Rainwater collection.** Encourage innovative water recycling techniques such as rainwater capture, use of cisterns, and installation of greywater.
- **7.1 Permeable pavement.** Require the use of permeable pavement in parking lots, sidewalks, plazas, and other low-intensity paved areas.
- **7.2 Soil erosion.** Minimize soil erosion by ensuring best practices are used in grading and construction.

Implementation Actions

- SUSTAINABILITY-9. Maintain and periodically update the Water Efficient Landscape Ordinance and Water Conservation and Drought Management Plan sections of the Municipal Code to facilitate the use of new technologies or practices to conserve water.
- SAFETY-5. Evaluate tsunami preparation, evacuation, and response policies/practices to reflect current inundation maps and design standards. Include updated information in the periodically updated hazard mitigation plan.
- SAFETY-9. Continue working with regional partners to develop a local sea level rise model that evaluates erosion potential, provides detailed inundation maps, and provides combined sea level rise and tsunami maps.
- SAFETY-10. When the mean high water level exceeds 1 foot above the baseline level, partner with FEMA as a cooperating technical partner to conduct a Hydrologic and Hydraulic Study, and facilitate necessary revisions to applicable Flood Insurance Rate Maps.
- SAFETY-11. Prepare for changing shoreline conditions by establishing and applying the following development review requirements:
  - Require new development or redevelopment project proposals within the designated area subject to flooding, inundation, or erosion due to sea level rise to describe and illustrate in site plans how the proposed project considers and mitigates potential flood hazards during the economic lifespan of the structure. Potential flood mitigation measures include, but are not limited to, flood proofing; increased ground floor elevation (a minimum of 1-foot freeboard); ground-floor, flood-resistant exterior materials; and restricting fencing or yard enclosures that cause water to pond.
  - Require new development or redevelopment projects to assure stability and structural integrity and neither create nor contribute significantly to erosion, geologic instability, or destruction of the project site or surrounding area.
  - As local flood, erosion, and tsunami data becomes more precise, amend the General Plan and Zoning Code to establish more specific development standards and conditions.
- SAFETY-12. Amend the Municipal Code to establish a definition of "economic lifespan" for structural development as between 75 to 100 years, unless otherwise specified, and provide restrictions for specific development proposals.

- SAFETY-13. Amend the Municipal Code to require flood risk disclosure and active acknowledgment of expanded flood risk when properties subject to inundation or flooding are developed or redeveloped.
- SAFETY-14. Continue to participate in regional sediment management planning.
- SAFETY-15. Develop a long-term adaptive shoreline management program with a strong preference for beach replenishment over shoreline protective structures.
- INFRASTRUCTURE-1. Create a comprehensive, long-range (20-year) infrastructure plan integrating roadway, water, wastewater, stormwater, waste disposal, and utility infrastructure systems.
  - Consider the best available science describing potential climate change impacts as a basis for preparing the infrastructure plan.
  - Use the infrastructure plan as a resource when preparing five-year Capital Improvement Plans (CIPs) and setting and enforcing discretionary development requirements.
  - Incrementally update the infrastructure plan following the preparation of each CIP to ensure it remains consistent with changes in growth, traffic, funding sources, climate change impacts, and state and regional regulation.
- INFRASTRUCTURE-9. Consult with Cal Water to estimate and evaluate water supplies, provide public information and incentives for water conservation best practices.
- INFRASTRUCTURE-10. Install greywater systems and rainwater collection cisterns in parks and community facilities.
- INFRASTRUCTURE-11. Support efforts by Cal Water to construct necessary pump and storage facilities to ensure adequate water supply and proper water system balance.
- INFRASTRUCTURE-12. Amend the Municipal Code to require the installation of dual water plumbing hookups for landscaping irrigation, grading, and other non-contact uses in new development and redevelopment projects where recycled water is available or expected to be available.
- INFRASTRUCTURE-13. Continue to implement the Water Conservation and Drought Management Plan and any implementing ordinances, including imposition of fines and other appropriate enforcement tools, for violations of water conservation rules.
- INFRASTRUCTURE-18. Continue to implement and incorporate revisions to the Clean Bay Restaurant Program and Grease Control Ordinance.
- INFRASTRUCTURE-19. Update program requirements to integrate the latest available Best Management Practices into the City Stormwater Management and Discharge Control Ordinance, Low Impact Development (LID) Ordinance, and Green Street Policy and regularly monitor results.
- INFRASTRUCTURE-20. Complete municipal demonstration projects showing residential and business property best practices in urban runoff, green streets, and LID.
- INFRASTRUCTURE-21. Continue to require new development and redevelopment projects to incorporate green street BMPs that address stormwater runoff from the project area using the Green Street BMP Selection Guidelines identified in Attachment A of the City's Green Street Policy.
- INFRASTRUCTURE-22. Continue to install educational signs or symbols on major public storm drains.

IMPACTS AND MITIGATION MEASURES

IMPACT 4.8-1 ***Would PLAN Hermosa Adversely Affect Water Quality Standards and Waste Discharge Requirements?*** *Implementation of PLAN Hermosa would provide for future development and reuse projects that could alter existing stormwater runoff and associated pollutants. However, the potential for stormwater flows to affect water quality would be controlled through implementation of Municipal Code Chapter 8.44 (Stormwater and Urban Runoff Pollution Control Regulations), which includes the City's Low-Impact Development (LID) Ordinance (Municipal Code Section 8.44.095), and the City's Green Street Policy. Construction activities resulting from implementation of PLAN Hermosa would also temporarily increase the amount of sediments and pollutants in stormwater runoff. However, implementation of PLAN Hermosa policies and implementation actions and enforcement of existing grading and erosion regulations (Municipal Code Section 8.44.090 and NPDES Construction General Permit SWPPP requirements) would result in a* ***less than significant*** *impact.*

Water quality standards and waste discharge requirements that are applicable to PLAN Hermosa are set forth in the Basin Plan and various NPDES permits, which are described in the Regulatory Setting subsection. From a hydrologic perspective, the primary way in which PLAN Hermosa would result in water quality impacts is a function of pollutants contained in stormwater runoff, which could occur during construction and/or occupancy of projects. Hermosa Beach is generally built out with urban development, with the exception of open space areas such as parks, vacant parcels, the Hermosa Valley Greenbelt, and the beach. Urbanized land in Hermosa Beach is not anticipated to substantially increase with the implementation of PLAN Hermosa because the city is largely built out, with new development limited to infill and redevelopment where existing impervious surfaces and developed conditions already exist. Therefore, the potential for future development and reuse projects consistent with PLAN Hermosa to result in a substantial alteration in existing city water quality impacts is limited.

Construction activities such as grading, excavation, and trenching may result from development associated with implementation of PLAN Hermosa. These types of land-disturbing construction activities result in the potential for increased soil erosion and sedimentation in stormwater runoff. In addition, general construction activities would contribute pollutants such as construction waste, diesel and oil from equipment, solvents, and lubricants. Sediment and contaminants could enter the stormwater drainage system and eventually enter Santa Monica Bay. The potential increase in soil erosion, siltation, and construction-related pollutants could degrade downstream surface water or groundwater. However, future projects would be required to comply with NPDES requirements. Construction activities disturbing 1 acre or more would be subject to the NPDES Construction Activities Stormwater General Permit and would be required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters and consider the use of post-construction permanent best management practices. Projects over 1 acre would also be required to develop and implement a stormwater pollution prevention plan with best management practices that would be employed to prevent soil erosion and discharge of other construction related pollutants, as well as a monitoring program to ensure that best management practices are implemented appropriately and are effective at controlling discharges of pollutants related to stormwater. Hermosa Beach Municipal Code Title 8, Chapter 8.44, Section 8.44.090 describes requirements for sediment and erosion control best management practices and SWPPPs. Best management practices may consist of a wide variety of measures appropriate to reduce pollutants in stormwater.

PLAN Hermosa includes several policies and implementing actions that would apply to new development and redevelopment. Public Safety Element Policy 1.8 directs the City to reduce stormwater runoff consistent with local stormwater permits. Infrastructure Element Policy 4.8 directs the City to develop a comprehensive approach to water infrastructure that integrates sewer system planning with potable and recycled water systems, stormwater systems, and increased conservation awareness.

The Infrastructure Element contains Policies 5.1, 5.3, 5.4, 5.5, 5.6, 5.7, and 5.8 that would further reduce impacts to water quality. Policy 5.1 integrates stormwater infiltration best practices when initiating streetscape redevelopment or public facility improvement projects. Policy 5.3 directs the City to integrate natural features, such as topography, drainage, and trees, into the design of streets and rights-of-way. Policy 5.4 encourages community behavior changes to reduce urban runoff pollution. Policy 5.5 directs the City to maintain, fund, and regularly monitor the city's stormwater infrastructure. Policy 5.6 ensures that stormwater system repairs are included in maintenance plans for other city infrastructure and that repairs and maintenance are completed in a timely manner to prevent additional repair costs. Policy 5.7 directs the City to strictly implement, enforce, and monitor MS4 NPDES permit requirements. Policy 5.8 requires new development and redevelopment projects to incorporate LID techniques in project designs, including but not limited to on-site drainage improvements using native vegetation to capture and clean stormwater runoff.

Sustainability + Conservation Element Policy 5.2 encourages innovative water recycling techniques such as rainwater capture, use of cisterns, and installation of greywater systems. Additionally, Policy 7.1 requires the use of permeable pavement in parking lots, sidewalks, plazas, and other low-intensity paved areas, while Policy 7.2 would seek to minimize soil erosion by ensuring best practices are used in grading and construction.

Infrastructure Element implementation action INFRASTRUCTURE-12 would amend the Municipal Code to require the installation of dual plumbing to facilitate use of recycled water for landscaping irrigation, grading, and other non-contact uses in new development and redevelopment projects where recycled water is available or expected to be available. INFRASTRUCTURE-18 directs the City to continue to fully implement and expand the Clean Bay Restaurant Program and the Grease Control Ordinance. INFRASTRUCTURE-1 directs the City to incorporate stormwater infrastructure improvements in a comprehensive, long-range (20-year) infrastructure plan. INFRASTRUCTURE-19 updates program requirements in the City's Storm Water Management and Discharge Control Ordinance and regularly monitors results. INFRASTRUCTURE-20 directs the City to continue to implement the Low Impact Development Ordinance and monitor ordinance effectiveness. INFRASTRUCTURE-21 requires new development and redevelopment projects to incorporate green street best management practices that address stormwater runoff from the project area using the Green Street BMP Selection Guidelines identified in Attachment A of the City's Green Street Policy.

Implementation of these policies, in combination with continued implementation of Municipal Code Chapter 8.44 (Stormwater and Urban Runoff Pollution Control Regulations), Municipal Code Section 8.44.095 (Low-Impact Development (LID) Ordinance), and the City's Green Street Policy would ensure projects developed under PLAN Hermosa would be in compliance with applicable water quality standards (e.g., the Basin Plan) and waste discharge requirements (e.g., NPDES MS4 permit) and would offset any new development impacts to water quality. Since 2010, the City has required LID best management practices in certain projects, and beginning in 2015–16, all projects have been required to comply with the City's LID Ordinance, which provides greater stormwater protection than required by the MS4 permit by requiring projects to maintain stormwater runoff on-site, among other requirements. The City also has implemented several projects to control pollutants in stormwater runoff that have been demonstrated to provide effective pollutant

removal and meet water quality objectives and has identified additional projects in the Beach Cities EWMP to help further improve water quality. This EWMP is based on a Reasonable Assurance Analysis to ensure the requirements of the MS4 permit will be met, and will be implemented during the life of the PLAN Hermosa. The proposed PLAN Hermosa policies and implementation actions related to hydrology and water quality are consistent with and support applicable plans and regulations. Therefore, adoption and implementation of PLAN Hermosa would not violate water quality standards or waste discharge requirements, and impacts would be **less than significant**.

Mitigation Measures

None required.

IMPACT 4.8-2 ***Would PLAN Hermosa Deplete Groundwater Supplies or Substantially Interfere with Groundwater Recharge?*** *Implementation of PLAN Hermosa would provide for future development and reuse projects that would minimally affect groundwater recharge because existing areas of open space would be preserved, and implementation of the City's LID Ordinance, Green Street Policy, and PLAN Hermosa policies and implementation actions would require permeable area in new development, redevelopment, and infrastructure improvements, resulting in a* ***less than significant*** *impact.*

Hermosa Beach is generally built out with urban land uses and has minimal areas of vacant, developable permeable land. Proposed PLAN Hermosa land use policies promote the redevelopment of existing urbanized areas, and the overall net area of urbanized land is not anticipated to substantially increase. Redevelopment would generally occur in underutilized areas that are currently covered with impervious surfaces. Site redevelopment may provide opportunities to create new permeable surfaces through new landscaping and use of porous pavements, potentially reducing the amount of runoff and associated pollutants. Thus, very small amounts of new impervious surface would result from development associated with implementation of the plan, which would not significantly affect infiltration of water into the ground. With incorporation of the LID requirements, development that occurs as the result of PLAN Hermosa would have lower runoff and higher permeability than observed in baseline conditions.

The potential for groundwater recharge impacts would be further reduced through implementation of PLAN Hermosa policies. Infrastructure Element contains policies Policy 5.1, 5.2, 5.3, 5.8, that would address potential impacts to groundwater recharge. Policy 5.1 that integrates stormwater infiltration best practices when initiating streetscape redevelopment or public facility improvement projects. Policy 5.2 directs the City to naturalize flood channels that enhance flood protection capacity before employing other management solutions. Policy 5.3 directs the City to integrate natural features, such as topography, drainage, and trees, into the design of streets and rights-of-way. Policy 5.8 requires new development and redevelopment projects to incorporate low impact development techniques in project designs, including but not limited to on-site drainage improvements using native vegetation to capture and clean stormwater runoff. Sustainability + Conservation Element Policy 5.2 encourages innovative water recycling techniques such as rainwater capture, use of cisterns, and installation of greywater systems. Policy 7.1 requires the use of permeable pavement in parking lots, sidewalks, plazas, and other low-intensity paved areas. Each of these policies individually and in combination would maintain and possibly improve recharge opportunities in the subbasin.

In addition to the policies listed above, Infrastructure Element Policy 4.8 directs the City to develop a comprehensive approach to water infrastructure that integrates sewer system planning with potable and recycled water systems, stormwater systems, and increased conservation awareness. PLAN Hermosa also contains implementation actions intended to increase groundwater recharge over baseline conditions. INFRASTRUCTURE-19 directs the City to continue

to implement the Low Impact Development Ordinance and to monitor ordinance effectiveness. INFRASTRUCTURE-21 requires new development and redevelopment projects to incorporate green street best management practices that address stormwater runoff from the project area using the Green Street BMP Selection Guidelines identified in Attachment A of the City's Green Street Policy.

Because of the minimal amount of new impervious surface that would result with implementation of PLAN Hermosa, the rate of infiltration needed to support groundwater recharge would not be substantially decreased. Additionally, implementation of PLAN Hermosa policies and actions, in combination with the City's LID Ordinance, Green Street Policy, and projects anticipated in the Beach Cities EWMP, would help maintain and protect groundwater recharge resources by ensuring infiltration potential is not reduced and that pollutants as specified in the management plan are removed to the maximum extent practicable. Therefore, this impact would be **less than significant**.

Mitigation Measures

None required.

IMPACT 4.8-3 ***Would PLAN Hermosa Alter the Existing Drainage Pattern of the Site or Area so as to Result in Substantial On- or Off-Site Erosion or Siltation?*** *Implementation of PLAN Hermosa would provide for future development and reuse projects that would minimally alter drainage patterns and the amount of stormwater runoff, which would minimize the potential for erosion or siltation. Continued implementation and enforcement of existing grading, erosion, and flood control regulations, in combination with the City's LID Ordinance, Green Street Policy, and PLAN Hermosa policies and implementation actions, would result in a* ***less than significant*** *impact.*

As described above in Impact 4.8-1, Hermosa Beach is generally built out with urban development and has minimal areas of vacant permeable land, with the exception of parkland, the Hermosa Valley Greenbelt, and the beach. The city has no natural drainage features. With only a few vacant parcels that are small and generally not contiguous, new development would not be of such scale that drainage patterns would be substantially altered, which would limit the potential for increased erosion or sedimentation. For example, most recent development in the city has included demolition and reconstruction of single-family homes, small commercial redevelopment, or two-unit condominium projects. Development along shoreline areas, which could be susceptible to erosion from wave and tidal action and/or sea level rise effects, would be limited under PLAN Hermosa.

The potential for erosion or siltation impacts would be further reduced through implementation of PLAN Hermosa policies and implementation actions. Public Safety Element Policy 1.5 directs the City to use natural interventions, green infrastructure, and infiltration systems to minimize damage from coastal flooding. Policy 1.8 reduces stormwater runoff consistent with local stormwater permits. Policy 2.8 directs the City to continue to monitor beach width and elevations to identify potential erosion problems. Infrastructure Element Policy 4.8 directs the City to develop a comprehensive approach to water infrastructure that integrates sewer system planning with potable and recycled water systems, stormwater systems, and increased conservation awareness. Policy 5.1 integrates stormwater infiltration best practices when initiating streetscape redevelopment or public facility improvement projects. Policy 5.2 directs the City to naturalize flood channels that enhance flood protection capacity before employing other management solutions. Policy 5.3 directs the City to integrate natural features, such as topography, drainage, and trees, into the design of streets and rights-of-way. Policy 5.5 directs the City to maintain, fund, and regularly monitor stormwater infrastructure. Policy 5.8 requires new development and

redevelopment projects to incorporate LID techniques in project designs, including but not limited to on-site drainage improvements using native vegetation to capture and clean stormwater runoff. Sustainability + Conservation Element Policy 7.1 requires the use of permeable pavement in parking lots, sidewalks, plazas, and other low-intensity paved areas. Policy 7.2 would minimize soil erosion by ensuring best practices are used in grading and construction.

PLAN Hermosa contains implementation actions intended to mitigate erosion and sedimentation impacts. INFRASTRUCTURE-1 incorporates stormwater infrastructure improvements in a comprehensive, long-range infrastructure plan. INFRASTRUCTURE-19 updates program requirements in the City's Storm Water Management and Discharge Control Ordinance and directs the City to regularly monitor results, as well as directs the City to continue to implement the LID Ordinance and monitor its effectiveness, which is also required under the applicable NPDES Permit. INFRASTRUCTURE-21 requires new development and redevelopment projects to incorporate green street best management practices that address stormwater runoff from the project area using the Green Street BMP Selection Guidelines identified in Attachment A of the City's Green Street Policy.

Existing requirements and regulations, as well as PLAN Hermosa policies and implementation actions, would reduce the amount of surface water runoff in the planning area through measures such as compliance with the NPDES permit requirements, flood control measures, water conservation measures, and maintenance of pervious surfaces and through implementation of the Enhanced Watershed Management Program. Compliance with these regulations and the minimal amount of new surface runoff that would result from implementation of PLAN Hermosa would minimize the potential for existing drainage patterns to be altered in a manner that could cause increased erosion or sedimentation. Therefore, this impact would be **less than significant**.

Mitigation Measures

None required.

IMPACT 4.8-4 ***Would PLAN Hermosa Substantially Alter the Existing Drainage Pattern of the Site or Area so as to Result in On- or Off-Site Flooding?*** *Implementation of PLAN Hermosa would provide for future development and reuse projects that would minimally alter drainage patterns and the amount of stormwater runoff, which would minimize the potential for on- and off-site flooding. Continued implementation and enforcement of existing grading, erosion, and flood control regulations, in combination with the City's LID Ordinance, Green Street Policy, and PLAN Hermosa policies and implementation actions, would result in a* ***less than significant*** *impact.*

Impact 4.8-3 described the potential for PLAN Hermosa to alter drainage systems or patterns. The area's drainage systems and patterns are not anticipated to be substantially altered due to the existing built-out conditions of the city, plans for new development to focus on infill locations, and programs to require on-site retention and infiltration of stormwater. Because drainage patterns would be minimally affected and the rate and amount of stormwater would be controlled through implementation of LID requirements (see Impact 4.8-1), surface runoff would not substantially add to an increased risk of flooding.

Existing requirements and regulations, as well as PLAN Hermosa policies and implementation actions described in Impact 4.8-3, would reduce the amount of surface water runoff through measures such as compliance with the NPDES permit requirements, flood control measures, LID development standards, retention and infiltration-focused infrastructure improvements, water conservation measures, and maintenance of pervious surfaces. Compliance with these regulations and the minimal amount of new surface runoff that would result from implementation

of PLAN Hermosa would minimize the potential for existing drainage patterns to be altered in a manner that could cause increased on- or off-site flooding. Therefore, this impact would be **less than significant**.

Mitigation Measures

None required.

IMPACT 4.8-5 ***Would PLAN Hermosa Create or Contribute Runoff Water Exceeding the Capacity of Existing or Planned Stormwater Drainage Systems or Providing Substantial Additional Sources of Polluted Runoff?*** *Implementation of PLAN Hermosa would provide for future development and reuse projects that would generate stormwater runoff that would be discharged to the storm drain system and would contain urban pollutants. Continued implementation and enforcement of existing grading and erosion regulations, in combination with the City's LID Ordinance and Green Street Policy, the Beach Cities EWMP, and PLAN Hermosa policies and implementation actions, would result in a* ***less than significant*** *impact.*

Given the built-out nature of the planning area, most new development that would occur as the result of PLAN Hermosa would be redevelopment. As a conservative estimate, assuming 33 acres of vacant land are entirely converted to urban uses with impervious surfaces, the increase in newly developed land would be approximately 5 percent. With a small change in impervious surface, the rate and amount of stormwater runoff generated would not be expected to increase to levels that would affect the capacity of storm drainage systems (see Impact 4.13.6-3 in Section 4.13, Public Services, Community Facilities, and Utilities, of this EIR).

The potential for storm drainage capacity impacts would be further reduced through implementation of several PLAN Hermosa policies. Sustainability + Conservation Element Policy 7.1 would require the use of permeable pavement in parking lots, sidewalks, plazas, and other low-intensity paved areas. Infrastructure Element Policy 4.8 would develop a comprehensive approach to water infrastructure that integrates sewer system planning with potable and recycled water systems, stormwater systems, and increased conservation awareness. Policy 5.1 would integrate stormwater infiltration best practices when initiating streetscape redevelopment or public facility improvement projects. Policy 5.3 would integrate natural features, such as topography, drainage, and trees, into the design of streets and rights-of-way. Policy 5.4 would encourage community behavior changes to reduce urban runoff pollution. Policy 5.5 would maintain, fund, and regularly monitor the city's stormwater infrastructure. Policy 5.6 would ensure that stormwater system repairs are included in maintenance plans for other city infrastructure and that repairs and maintenance are completed in a timely manner to prevent additional repair costs. Policy 5.7 would strictly implement, enforce, and monitor MS4 NPDES Permit requirements. Policy 5.8 would require new development and redevelopment projects to incorporate low impact development techniques in project designs, including but not limited to on-site drainage improvements using native vegetation to capture and clean stormwater runoff.

Construction activities may result from development associated with implementation of PLAN Hermosa and generate the potential for increased pollutants in runoff or provide substantial additional sources of polluted runoff, as described in Impact 4.8-1. However, adherence to the regulatory requirements described in Impact 4.8-1 would serve to reduce the amount of stormwater runoff and pollutants generated during construction. Specifically, projects would be required to comply with NPDES requirements, prepare a stormwater pollution prevention plan, and comply with Hermosa Beach Municipal Code Section 8.44.090. Mandatory compliance with these requirements would control construction activities and minimize, to the greatest extent practicable, the degradation of water quality. These requirements would include best

management practices appropriate to reduce the overall discharge volume and amount of pollutants in stormwater.

There would not be a substantial increase in pollutants in stormwater runoff as a result of PLAN Hermosa. This would be primarily accomplished through the City's LID Ordinance. The LID Ordinance requires new development and redevelopment projects to control pollutants and runoff volume from the project site by minimizing the impervious surface area through effective design and use of water-permeable surfaces to the extent technically feasible on not less than 50 percent of exterior surface areas, excluding building footprints, and controlling runoff through infiltration, bioretention, and/or rainfall harvest and use. A stormwater management plan (SWMP) that includes necessary best management practices to control pollution would be required for each project. Prior to issuing a discretionary permit, the City must ensure the project plans include LID features and other design requirements, and prior to issuing a certificate of occupancy, the City must verify that the features have been constructed. The LID Ordinance also requires projects to have an operation and maintenance plan. Implementation of PLAN Hermosa policies and implementation actions listed in Impact 4.8-1 above, which also address water quality, would further reduce impacts on stormwater runoff. On a citywide scale, the City would continue to implement its Green Street Policy and further its efforts toward implementing the improvements proposed in the Beach Cities EWMP, which would help reduce pollutant loads in stormwater.

Because only small areas of new impervious surface would result from development associated with implementation of the plan, the increased volumes or rates of discharge and associated pollutants in runoff would be minimal. Additionally, adherence to applicable water quality regulations and implementation of PLAN Hermosa policies and implementation actions would minimize the potential to create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Therefore, this impact would be **less than significant**.

Mitigation Measures

None required.

IMPACT 4.8-6 ***Would PLAN Hermosa Substantially Degrade Water Quality?*** *Implementation of PLAN Hermosa would provide for future development and reuse projects that would not result in substantial degradation of water quality with continued implementation of Municipal Code Chapter 8.44 (Stormwater and Urban Runoff Pollution Control Regulations), which includes the City's Low-Impact Design (LID) Ordinance (Municipal Code Section 8.44.095), the City's Green Street Policy, existing grading and erosion regulations (Municipal Code Section 8.44.090 and NPDES Construction General Permit SWPPP requirements), participation in the Beach Cities EWMP, and implementation of PLAN Hermosa policies and implementation actions. This would be a* ***less than significant*** *impact.*

Impacts 4.8-1, 4.8-3, and 4.8-5 analyze in detail the potential water quality impacts and applicable permits, regulations, plans, and PLAN Hermosa policies and implementation actions that would ensure no significant adverse water quality impacts would occur as a result of the plan. No additional water quality impacts beyond those described in Impacts 4.8-1, 4.8-3, and 4.8-5 have been identified. Therefore, this impact would be **less than significant**.

Mitigation Measures

None required.

IMPACT 4.8-7 ***Would PLAN Hermosa Place Housing Within a 100-Year Flood Hazard Area?*** *Implementation of PLAN Hermosa would not place housing within a 100-year flood hazard area. Additionally, PLAN Hermosa includes policies and implementation actions to decrease exposure to and impacts from flood hazards throughout the city. Therefore, this impact would be* ***less than significant****.*

Though most surface water is controlled by storm drainage infrastructure in the city, flooding may occur in Hermosa Beach as a result of excessive precipitation, storm runoff, coastal flooding, or inadequate, undersized, or unmaintained storm drainage infrastructure. As identified in **Figure 4.8-2**, the delineated 100-year flood hazard area is limited to the beach on the city's western edge and does not include any housing, nor does PLAN Hermosa allow housing to be placed on the beach.

Flooding can occur outside of delineated flood zones, typically as the result of combined heavy precipitation, storm surge, and high tide events. PLAN Hermosa does not allow development, residential or otherwise, in an existing 100-year flood hazard area. However, PLAN Hermosa does include numerous policies and implementation actions to mitigate the impacts of flooding, in addition to the stormwater management policies and programs mentioned above. Public Safety Element Policy 1.1 requires new buildings and infrastructure to evaluate seismic, fire, flood, and coastal storm hazard risks and comply with California Building Code standards to minimize risk. Policy 1.5 directs the City to use natural interventions, green infrastructure, and infiltration systems to minimize damage from coastal flooding. Policy 1.7 encourages existing structures, critical facilities, and infrastructure to reduce flood vulnerability. Policy 2.8 directs the City to continue to monitor beach width and elevations to identify potential erosion problems. Policy 6.3 directs the City to invest in public and critical facilities to make them more resilient to the potential impacts of natural disasters.

Because Hermosa Beach is a built-out community and PLAN Hermosa land use policies would not place areas of residential development in flood hazard areas, and because all future development would be required to comply with flood hazard development regulations and requirements, the plan would not create risk due to the placement of housing in flood hazard areas. Additionally, implementation of PLAN Hermosa policies and implementation actions would minimize flooding potential and flood hazards throughout the city. Therefore, this impact would be **less than significant**.

Mitigation Measures

None required.

IMPACT 4.8-8 ***Would PLAN Hermosa Place Within a 100-Year Flood Hazard Area Structures That Would Impede or Redirect Flood Flows?*** *Implementation of PLAN Hermosa would allow development or expansion of facilities to support coastal access in the 100-year flood hazard area. However, adoption and implementation of PLAN Hermosa policies and implementation actions and adherence to development regulations specific to flood hazard areas would result in a* ***less than significant*** *impact.*

As identified in **Figure 4.8-2**, the delineated 100-year flood hazard area is limited to the beach on the city's western edge. Existing development in this area is limited to coastal recreational buildings and enhancements including the pier, restrooms, and playgrounds.

Policies and implementation actions in PLAN Hermosa could lead to the development of new or enhanced coastal facilities, including accessible walkways onto the beach. As noted in the Land Use + Design Element, infrastructure or amenities such as restrooms, playgrounds, and stormwater drainages are allowed, provided they do not create visual obstructions or impede recreational

activities. New or enhanced infrastructure or amenities could impede or redirect flood flows. However, the uses allowed by PLAN Hermosa are consistent with existing land uses and are not expected to significantly increase the number or size of structures in the 100-year flood hazard area.

Because PLAN Hermosa would continue existing land use patterns and any new development would be required to comply with flood hazard development regulations and requirements, implementation of the plan would not substantially redirect or impede flood flows due to placement of structures in flood hazard areas. Additionally, PLAN Hermosa policies and implementation actions would minimize flooding potential and flood hazards. Therefore, this impact would be **less than significant**.

Mitigation Measures

None required.

IMPACT 4.8-9 ***Would PLAN Hermosa Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Flooding?*** *Implementation of PLAN Hermosa would not allow habitable development in locations currently designated as 100-year flood hazard areas, which generally precludes loss, injury, or death from flooding, including flooding from the failure of a dam or levee. However, sea level rise is more likely than not to expand the area exposed to flooding conditions in the future. Adoption and implementation of PLAN Hermosa policies and implementation actions that prepare the city for sea level rise and adherence to development regulations specific to flood hazard areas would result in a* ***less than significant*** *impact.*

As described in Impact 4.8-7, implementation of PLAN Hermosa would not allow habitable development in flood hazard areas, although, as previously mentioned, coastal recreational supportive structures would continue to be allowed in the 100-year flood hazard area, which could expose people or structures to the risk of loss, injury, or death involving flooding. However, these potential impacts were found to be less than significant. Because PLAN Hermosa continues existing land use allowances, any new development would be required to comply with applicable regulations and building standards in flood hazard areas. Flooding hazards and risks are also minimized through PLAN Hermosa policies and implementation actions, as previously described in Impact 4.8-7. Thus, increased exposure to flooding hazards that might result in significant loss, injury, or death would be minimal with implementation of the plan.

The analysis above focuses on flood exposure under current conditions. However, sea level rise will likely expand the area of the city exposed to flooding through the planning horizon and beyond. In Hermosa Beach, the area where a 100-year flood could cause inundation is projected to increase by about 300 percent under a scenario of 55 inches of sea level rise (from 0.034 square miles at present to 0.1 square miles). The projected flood zone extends beyond the sandy beach into developed portions of the Coastal Zone (see PLAN Hermosa Figure 6.4). PLAN Hermosa policies and implementation actions could result in development that is in a 100-year flood zone under likely future climate conditions, which means the risk of loss, injury, or death is possible in expanded areas of the city. However, in addition to general flood mitigation regulations, development standards, policies, and implementation actions mentioned in Impacts 4.8-7 and 4.8-8, PLAN Hermosa contains policies and implementation actions to assess, prepare for, and respond to the risk of loss, injury, or death involving flooding related to sea level rise. Public Safety Element Policy 2.1 directs the City to integrate resilience to anticipated sea level rise impacts into project designs when repairing and replacing aging infrastructure. Policy 2.2 requires new development and redevelopment projects to consider and mitigate relevant sea level rise impacts. Policy 2.3 directs the City to enhance local understanding of sea level rise and keep decision-makers and the community aware of potential impacts based on best available science.

Policy 2.4 directs the City to provide public information describing new flooding risks under a 55-inch sea level rise scenario in areas previously not affected by flooding. Policy 2.5 directs the City to maintain current beach widths under changing sea level conditions. Policy 2.6 directs the City to consider the combined effects of sea level rise when evaluating potential tsunami and storm surge impacts. Policy 2.7 directs the City to support regional approaches to sediment management, beach replenishment, and adaptive shoreline protection to allow Hermosa Beach to voice its needs, allow for coordination with neighboring jurisdictions, and identify creative finance mechanisms to continue the replenishment program. Policy 2.8 directs the City to continue to monitor beach width and elevations to identify potential erosion problems. Implementation action SAFETY-13 directs the City to amend the Municipal Code to require flood risk disclosure and active acknowledgment of expanded flood risk in property purchases/turnovers. SAFETY-11 directs the City to prepare for changing shoreline conditions by establishing and applying specific development review listed in the implementation action.

Hermosa Beach is not in a location that could be subject to flood hazards resulting from the structural failure of a levee or dam and therefore has no risk of loss, injury, or death involving flooding as a result of such a structure.

Adherence to applicable development requirements and regulations in flood hazard areas and implementation of PLAN Hermosa policies related to stormwater management, flood hazard mitigation, and sea level rise would reduce the potential for loss, injury, or death from flooding. Therefore, this impact would be **less than significant**.

Mitigation Measures

None required.

IMPACT 4.8-10 ***Would PLAN Hermosa Expose People or Structures to Inundation by Seiche, Tsunami, or Mudflow?*** *Implementation of PLAN Hermosa would provide for future development and reuse projects that would be in locations that may be subject to inundation by tsunami or mudflow. However, adoption and implementation of PLAN Hermosa policies and implementation actions would result in a* ***less than significant*** *impact.*

Some areas of California are exposed to seismically induced waves known as seiches that can overtop dams and cause flooding. Because the city does not contain any surface waters, other than the Pacific Ocean, Hermosa Beach would not be subject to inundation from a seiche.

Coastal areas of California are subject to seismically induced ocean waves known as tsunamis. **Figure 4.8-3** displays the tsunami inundation zones in the city. PLAN Hermosa would continue to provide for development in locations that may be subject to inundation by tsunami. As mentioned in Impacts 4.8-7, 4.8-8, and 4.8-9, development that would occur as the result of PLAN Hermosa would be subject to building and development standards intended to mitigate general flood hazards. Also mentioned above, PLAN Hermosa includes numerous policies and implementation actions that would reduce or mitigate flood impacts. In addition, PLAN Hermosa includes policies and actions related to tsunamis. Public Safety Element Policy 1.3 directs the City to utilize the Los Angeles County Tsunami Playbook in the evaluation of and response to tsunami risk. Policy 2.6 directs the City to consider the combined effects of sea level rise when evaluating potential tsunami and storm surge impacts. Implementation action SAFETY-5 directs the City to evaluate tsunami preparation, evacuation, and response policies/practices to reflect current inundation maps and design standards and include updated information in the periodically updated hazard mitigation plan.

A mudflow can develop when water accumulates in the ground during periods of heavy rainfall and results in a flowing river of mud, rock, and other materials. There is no known risk of mudflow in Hermosa Beach.

PLAN Hermosa would continue to allow development in tsunami inundation zones, which could lead to inundation. Because PLAN Hermosa policies and implementation actions provide a comprehensive framework for addressing inundation, including preparation for and response to a tsunami, and because all future development would be required to comply with flood hazard development regulations and requirements, the risk of inundation above baseline conditions as a result of adoption and implementation of PLAN Hermosa is **less than significant**.

Mitigation Measures

None required.

CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

Water quality and hydrology are not confined by jurisdictional boundaries; rather, they are dependent on the regional watershed and hydrologic conditions in surrounding areas. As described in the Environmental Setting subsection, the planning area is located in the Santa Monica Bay Watershed and the West Coast subbasin of the Coastal Plain, Los Angeles Basin. When analyzing cumulative impacts to water quality and hydrology, it is necessary to consider upstream and downstream areas and water bodies that could influence or be influenced by actions within the planning area. Thus, the watershed and the subbasin are the general areas of influence used in analysis of cumulative impacts for this topic.

IMPACT 4.8-11 ***Would PLAN Hermosa Contribute to Cumulative Effects on Water Quality, Water Quality Standards, or Waste Discharge Requirements?*** *Anticipated regional growth in the Santa Monica Bay Watershed could increase the amount of impervious surface in the watershed, thereby potentially increasing the total volume, peak discharge rate of stormwater runoff, and associated pollutants. Additionally, construction activities resulting from regional growth could increase the amount of sediments and pollutants in stormwater runoff and could lead to water quality degradation. PLAN Hermosa's contribution would be less than cumulatively considerable because it would result in minimal changes in stormwater flows and pollutants with implementation of PLAN Hermosa policies and implementation actions, the City's LID Ordinance and Green Street Policy, participation in regional plans such as the Beach Cities EWMP, and compliance with existing regulations. This impact would be* ***less than cumulatively considerable****.*

Planned development or redevelopment under PLAN Hermosa, in addition to other cumulative development in the watershed, could result in an increase in the amount of impervious surfaces and increased runoff. Surface water runoff could carry increased levels of sediment and urban contaminants from both construction and long-term operation that could affect receiving water quality in Santa Monica Bay and other receiving water bodies. Additionally, construction and operational activities in the region could result in impacts to water quality, water quality standards, and waste discharge requirements.

Development in all jurisdictions whose stormwater flows to Santa Monica Bay is subject to policies and regulations to improve water quality and minimize potential to degrade water quality, as described in the Regulatory Setting subsection above. Federal, state, and local laws, regulations, and permitting processes, such as the Clean Water Act, NPDES permitting requirements, and the Porter-Cologne Water Quality Control Act, apply to all development within the watershed. Various

programs and requirements are specific to the maintenance and improvement of regional water quality, including the Los Angeles RWQCB Basin Plan, the NPDES General Permits administered by the SWRCB and the Los Angeles RWQCB, and the Los Angeles County Standard Urban Stormwater Mitigation Plan. These regulations apply to all development that would take place in the city as well as in neighboring jurisdictions.

Additionally, the Cities of Hermosa Beach, Manhattan Beach, Redondo Beach, and Torrance, together with the Los Angeles County Flood Control District, collectively referred to as the Beach Cities WMG, agreed to collaborate on the development of an Enhanced Watershed Management Program (EWMP) for the Santa Monica Bay and Dominguez Channel Watershed areas within their jurisdictions (referred to as the Beach Cities EWMP Area). The Beach Cities EWMP summarizes watershed-specific water quality priorities identified by the Beach Cities WMG; outlines the program plan, including specific strategies, control measures, and best management practices to achieve water quality targets; and describes the quantitative analysis completed to support target achievement and permit compliance. The approach described in the EWMP, in combination with the required LID-based best management practices that each participating city must impose on development, is anticipated to protect and potentially improve water quality in Santa Monica Bay from pollutants in stormwater runoff.

Because development projects whose stormwater would flow into Santa Monica Bay must comply with federal, state, and local regulations and requirements, the cumulative potential for increased pollutants or runoff would be minimized. Additionally, implementation of PLAN Hermosa is anticipated to result in minimal, and potentially positive, effects to water quality or wastewater discharge, as described in Impacts 4.8-1, 4.8-5, and 4.8-6. Policies and implementation actions in the plan have been developed to improve overall water quality in Hermosa Beach. For these reasons, PLAN Hermosa's contribution to cumulative water quality violations or waste discharge requirements would not be considerable, and the impact is considered **less than cumulatively considerable.**

Mitigation Measures

None required.

IMPACT 4.8-12 ***Would PLAN Hermosa Contribute to Cumulative Effects on Groundwater Supply and Recharge?*** *Anticipated regional growth overlying the West Coast subbasin of the Coastal Plain, Los Angeles Basin, could increase the amount of impervious surface, thereby potentially decreasing the area available for groundwater recharge. PLAN Hermosa's contribution would be less than cumulatively considerable because new areas of impervious surface as a result of implementing PLAN Hermosa would be minimal, and new development, redevelopment, and infrastructure improvements would be required to include more permeable surfaces than under baseline conditions. With implementation of PLAN Hermosa policies and implementation actions, the City's LID Ordinance and Green Street Policy, participation in regional plans such as the Beach Cities EWMP, and compliance with existing regulations, this impact would be* ***less than cumulatively considerable.***

Per the California Department of Water Resources, natural replenishment of the West Coast Basin's groundwater supply is largely limited to underflow from the Central Basin through and over the Newport-Inglewood fault zone. Water spread in the Central Basin percolates into aquifers there, and eventually some crosses the Newport-Inglewood fault to supplement the groundwater supply in the West Coast Basin. The West Coast Basin covers approximately 140 square miles and is bounded on the north by the Baldwin Hills and the Ballona Escarpment (a bluff just south of the Ballona Creek), on the east by the Newport-Inglewood fault zone, to the south by San Pedro Bay

and the Palos Verdes Hills, and to the west by Santa Monica Bay. Aquifers in the West Coast Basin are generally confined and receive the majority of their natural recharge from adjacent groundwater basins or from the Pacific Ocean (seawater intrusion) (WRD 2005). As such, groundwater recharge opportunities are minimal in Hermosa Beach and surrounding jurisdictions.

Proposed development or redevelopment under PLAN Hermosa, in addition to other cumulative development in the Santa Monica Bay Watershed, could increase the amount of impervious surfaces and result in less pervious surface to serve as groundwater recharge areas. Nonetheless, most of the watershed is highly urbanized. Development that would take place under PLAN Hermosa would generally be small and located on infill sites, similar to the jurisdictions surrounding the city. As such, future development in the watershed would likely be in existing urbanized areas, with only small areas of infringement into currently undeveloped lands.

As described under Impact 4.8-2, implementation of PLAN Hermosa is not anticipated to create substantial new areas of impervious surfaces, as the city is mostly built out. PLAN Hermosa policies and implementation actions described in the discussion of Impact 4.8-2 would minimize the amount of new impervious surface in the planning area, direct the use of more natural pervious drainage features to absorb stormwater, and implement water conservation measures to reduce water consumption. For these reasons, PLAN Hermosa's contribution to cumulative groundwater recharge or supply impacts would not be considerable. The impact is considered **less than cumulatively considerable.**

Mitigation Measures

None required.

IMPACT 4.8-13 ***Would PLAN Hermosa Contribute to Cumulative Alteration of Stormwater Drainage Systems and Patterns Resulting in Erosion and Flooding?*** *Anticipated regional growth throughout the Santa Monica Bay Watershed could increase the amount of impervious surface in the watershed, thereby potentially increasing the total volume and peak discharge rate of stormwater runoff and the potential for erosion and sedimentation. PLAN Hermosa's contribution would be less than cumulatively considerable because the planning area is generally built out, which would result in minimal changes in drainage patterns and therefore erosion potential with implementation of PLAN Hermosa policies and implementation actions, the City's LID Ordinance and Green Street Policy, participation in regional plans such as the Beach Cities EWMP, and compliance with existing regulations. This impact would be* ***less than cumulatively considerable.***

As described in Impact 4.8-1, Hermosa Beach is generally built out with urban land uses. The Santa Monica Bay Watershed area is generally built out and mirrors Hermosa Beach in terms of available developable land. Drainages are formalized in the watershed via culverts, stormwater drains, gutters, channels, etc. Additionally, there is a countywide drainage system, which, due to the built-out nature of the county and the watershed area, would not be greatly modified by new development. Because of the developed nature of the area, new development would be mainly infill and would be already served by adequate drainage facilities. Drainage modifications would include increased capacity and new connections if needed.

Cumulative development in the Santa Monica Bay Watershed would be subject to regulatory requirements designed to minimize potential erosion and flooding that may result during construction and operational conditions. Compliance with best management practices as part of the NPDES permit process, SWPPP and SWMP requirements (as applicable), any site-specific waste discharge requirements issued by the Los Angeles RWQCB, and compliance with the Los Angeles Region Basin Plan would minimize cumulative stormwater drainage effects. These

requirements are applicable to all jurisdictions in the watershed. Additionally, as discussed above, the Beach Cities Watershed Management Group has an adopted and approved Enhanced Watershed Management Program that would further reduce runoff, thus minimizing the possibility of erosion and flooding from modification of drainage patterns.

PLAN Hermosa policies and implementation actions would reduce the amount of surface water runoff through measures such as compliance with NPDES permit requirements, flood control measures, and water conservation measures. These measures would minimize the potential for erosion and flooding from modification of drainage patterns. Therefore, PLAN Hermosa's contribution to cumulative impacts related to alteration of stormwater drainage that could result in increased erosion or flooding would not be considerable. The impact is **less than cumulatively considerable**.

Mitigation Measures

None required.

IMPACT 4.8-14 ***Would PLAN Hermosa Contribute to Cumulative Exposure of People or Structures to a Significant Risk of Loss, Injury, or Death Involving Flooding?*** *Anticipated regional growth throughout the Santa Monica Bay Watershed, in combination with PLAN Hermosa, could result in development in locations designated as 100-year flood hazard areas, which could result in loss, injury, or death from flooding, including flooding from the failure of a dam or levee. Impacts would be site-specific and would generally not combine to create a cumulative impact. However, with implementation of PLAN Hermosa policies and implementation actions and compliance with existing regulations, PLAN Hermosa's contribution would be* ***less than cumulatively considerable****.*

Flooding may occur throughout the Santa Monica Bay Watershed when streams and channels overflow as a result of excessive precipitation, storm runoff, or inadequate, undersized, or unmaintained storm drainage infrastructure. As described previously, FEMA mapping delineates areas located in flood hazard zones. New development in the watershed could potentially result in housing located within 100-year flood hazard areas, or new or redeveloped housing may continue to be allowed in flood hazard areas in other jurisdictions. Future development throughout the watershed could place structures that would impede or redirect flood flows within a 100-year flood hazard area. Generally, development is not possible in a major flood control channel; however, development could occur in other locations designated as 100-year flood hazard areas that may carry surface water flows during flood conditions.

However, all future projects, regardless of jurisdiction, would be required to comply with regulatory requirements related to floodplain development. FEMA has established the design standard for flood protection in areas covered by Flood Insurance Rate Maps, with the minimum level of flood protection for new development determined to be within a 100-year flood hazard area. The California Building Code also contains requirements for constructing structures in flood hazard zones. Required compliance with these regulations and building codes would minimize risk due to the placement of housing in flood hazard zones, thereby reducing the potential cumulative impact.

Additionally, as described under Impact 4.8-7, PLAN Hermosa does not allow residential development in an existing 100-year flood hazard area. Multiple PLAN Hermosa policies and implementation actions would minimize flooding potential and reduce hazards associated with flooding, and future development would be required to comply with flood hazard development regulations and requirements. Therefore, PLAN Hermosa's contribution to cumulative impacts

related to the placement of housing in flood hazard areas would not be considerable, and the impact would be **less than cumulatively considerable**.

Mitigation Measures

None required

IMPACT 4.8-15 ***Would PLAN Hermosa Contribute to Cumulative Impacts Related to Inundation by Seiche, Tsunami, or Mudflow?*** *Anticipated regional growth throughout the Santa Monica Bay Watershed, in combination with PLAN Hermosa, could result in development in locations that may be subject to inundation by tsunami or mudflow. Impacts would be site-specific. PLAN Hermosa would not place new land uses in locations that could be subject to inundation by a tsunami, but existing uses could be at risk of tsunami. However, with implementation of PLAN Hermosa policies and implementation actions and compliance with existing regulations, PLAN Hermosa's contribution would be* ***less than cumulatively considerable****.*

Impact 4.8-10 discusses the potential for a seismically induced wave, known as a seiche, that can overtop a dam and cause flooding. Coastal areas of California are subject to seismically induced ocean waves known as tsunamis. In the Santa Monica Bay Watershed, all coastal communities could be exposed to a tsunami. Mudflows can develop when water accumulates in the ground during periods of heavy rainfall and results in a flowing river of mud, rock, and other materials. The risk of mudflow inundation is a relatively site-specific impact and is generally dependent on the immediate development in the area and on the specific hillside. Regional growth anticipated in the watershed could increase inundation risk associated with seiches, tsunamis, and mudflows.

However, Hermosa Beach is not located adjacent to any surface water bodies that could experience a seiche and has no known mudslide hazards. As described above, Hermosa Beach is exposed to tsunamis, but the land use pattern promoted by PLAN Hermosa would not place new land uses in locations that could be subject to inundation by a tsunami. PLAN Hermosa includes policies and implementation actions to mitigate, prepare for, and respond to tsunami-related inundation. Therefore, PLAN Hermosa's contribution to cumulative inundation impacts from seiches, tsunamis, and mudflows would not be considerable, and the impact would be **less than cumulatively considerable.**

Mitigation Measures

None required.

4.8.5 REFERENCES

Beach Cities Watershed Management Group. 2016. *Enhanced Watershed Management Program for the Beach Cities Watershed Management Area (Santa Monica Bay and Dominguez Channel Watersheds)*. Submitted to Los Angeles Regional Water Quality Control Board. http://www.swrcb.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/beach_cities/BeachCities_EWMP_February2016.pdf.

City of Hermosa Beach. 2005. *Natural Hazards Mitigation Plan*.

———. 2011. *City of Hermosa Beach Sanitary Sewer Master Plan*. http://www.hermosabch.org/modules/showdocument.aspx?documentid=1765.

DWR (California Department of Water Resources). 1961. *Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County.* Bulletin No. 104.

———. 1999. *Watermaster Service in the West Coast Basin, Los Angeles County, July 1, 1998–June 30, 1999.*

———. 2004. "Coastal Plain of Los Angeles County Groundwater Basin West Coast Subbasin." *California's Groundwater Bulletin 118.* Accessed January 2014. http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/4-11.03.pdf.

FEMA (Federal Emergency Management Agency). 2008. Flood Insurance Map: Los Angeles County California and Incorporated Areas. Map number 06037C1907F. Accessed January 2014. https://msc.fema.gov/webapp/wcs/stores/servlet/MapSearchResult?storeId=10001&catalogId=10001&langId=-1&panelIDs=06037C1907F$&Type=pbp&nonprinted=&unmapped.

Grifman, P. M., J. F. Hart, J. Ladwig, A. G. Newton Mann, and M. Schulhof. 2013. *Sea Level Rise Vulnerability Study for the City of Los Angeles*. USCSG-TR-05-2013. Accessed February 2014. https://www.usc.edu/org/seagrant/research/SeaLevelRise_docs/hires_pdfs/City%20of%20LA%20SLR%20Vulnerability%20Study%20FINAL%20Summary%20Report%20Online%20Hyperlinks.pdf.

Los Angeles RWQCB (Regional Water Quality Control Board). 1995. *Water Quality Control Plan, Los Angeles Region*. Accessed February 2014. http://www.waterboards.ca.gov/rwqcb4/water_issues/programs/basin_plan/electronics_documents/bp1_introduction.pdf.

———. 2002a. *Attachment A to Resolution No. 02-004: Proposed Amendment to the Water Quality Control Plan – Los Angeles Region to Incorporate the Santa Monica Bay Beaches Bacteria TMDL.* Accessed February 2014. http://63.199.216.6/larwqcb_new/bpa/docs/2002-004/2002-004_RB_BPA.pdf.

———. 2002b. *Attachment A to Resolution No. 2002-022: Amendment to the Water Quality Control Plan – Los Angeles Region to Incorporate Implementation Provisions for the Region's Bacteria Objectives and to Incorporate the Santa Monica Bay Beaches Wet-Weather Bacteria TMDL.* Accessed February 2014. http://63.199.216.6/larwqcb_new/bpa/docs/2002-022/2002-022_RB_BPA.pdf.

———. 2012. MS4 Discharges within the Coastal Watersheds of Los Angeles County. http://www.swrcb.ca.gov/losangeles/water_issues/programs/stormwater/municipal/la_ms4/2012/Order%20R4-2012-0175%20-%20A%20Final%20Order%20revised.pdf.

NRC (National Research Council). 2012. *Sea-Level Rise for the Coasts of California, Oregon, and Washington*: *Past, Present, and Future*. Accessed January 2014. www.nap.edu/catalog.php?record_id=13389.

SWRCB (State Water Resources Control Board). 2012. *California Ocean Plan*. http://www.swrcb.ca.gov/water_issues/programs/ocean/docs/cop2012.pdf.

WRD (Water Replenishment District of Southern California). 2005. Technical Bulletin Volume 4, Summer 2005. Accessed August 2016. http://www.wrd.org/engineering/introduction-groundwater-basins-los-angeles.php.

This page intentionally left blank.