4.8 HYDROLOGY AND WATER QUALITY

This section describes the environmental and regulatory setting of the proposed Belmont Pool Revitalization Project (proposed Project) site and vicinity with respect to surface and groundwater hydrology and quality. This analysis addresses potential impacts to hydrology and water quality resulting from implementation of the proposed Project and is based on information provided by various public agencies, including the Federal Emergency Management Agency (FEMA), Department of Water Resources (DWR), Los Angeles Regional Water Quality Control Board (RWQCB), the County of Los Angeles (County), and the City of Long Beach (City).

Scoping Process

The City of Long Beach distributed the first Notice of Preparation (NOP) for the Draft Environmental Impact Report (EIR) from April 18 to May 17, 2013. The City received three comment letters in response to the original NOP. The Los Angeles County Flood Control District (LACFCD) submitted two comments: (1) to disclose in the EIR and obtain a permit from LACFCD for any connections to LACFCD drains/facilities; and (2) to include a Hydrology Study/Water Quality Plan as part of the EIR. Due to the revisions in the Project Description, the City re-issued and circulated the NOP for the EIR between April 9, 2014, and May 8, 2014. The City received five comment letters in response to the re-issued NOP during the public review period. No comment letters were received regarding Hydrology and Water Quality.

4.8.1 Existing Setting

Regional Hydrology and Watershed. The Project site is located in the San Gabriel River watershed. The watershed drains 640 square miles (sq mi) from Los Angeles, Orange, and San Bernardino Counties and is bounded by the San Gabriel Mountains to the north, a large portion of San Bernardino and Orange Counties to the east, the Los Angeles River watershed to the west, and the Pacific Ocean to the south. The San Gabriel River's headwaters originate in the San Gabriel Mountains, while the lower part of the river flows through a concrete-lined channel before becoming a soft-bottom channel near its termination at the Pacific Ocean. The Project site is located within the Los Cerritos Channel and Alamitos Bay Water Management Area (WMA) of the San Gabriel River watershed (see Figure 4.8.1). The WMA is located between the Los Angeles and San Gabriel Rivers and drains to the same general area as the San Gabriel River into the Pacific Ocean. The Los Cerritos Channel and Alamitos Bay represent the main water bodies of the WMA.[1]

For planning purposes, the Los Angeles RWQCB uses a watershed classification system that divides surface waters into hydrologic units, areas, and subareas. As designated by the Los Angeles RWQCB, the Project site is located within the Los Angeles-San Gabriel Hydrologic Unit (HU), covering most of Los Angeles County, and drains a 1,608 sq mi area. The Los Angeles-San Gabriel HU is divided

[1] County of Los Angeles, Department of Public Works, San Gabriel River Watershed. Website: http://dpw.lacounty.gov/wmd/watershed/sg/ (accessed June 6, 2014); State Water Resources Control Board. Website: http://www.waterboards.ca.gov/losangeles/water_issues/programs/regional_program/Water_Quality_and_Watersheds/los_cerritos_channel/summary.shtml (accessed June 6, 2014).

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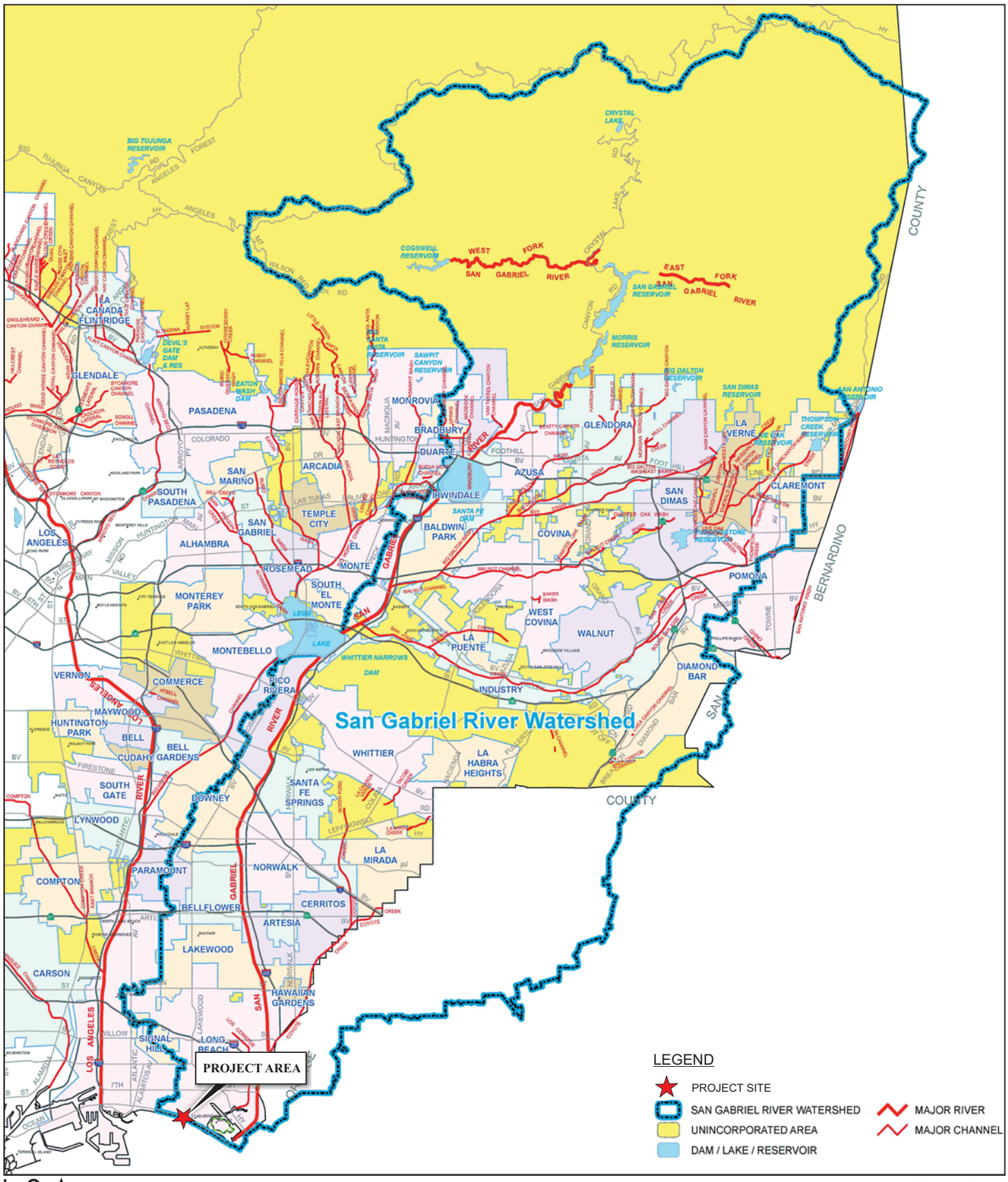

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FIGURE 4.8.1

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SOURCE: Los Angeles County Department of Public Works

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Belmont Pool Revitalization Project

San Gabriel River Watershed Map

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into Hydrologic Areas (HAs), which are then divided into Hydrologic Subareas (HSAs). The Project site is located in the Lower San Gabriel HA and in the Alamitos Bay HSA. [1]

The Los Angeles River and the San Gabriel River are the major drainage systems in the City of Long Beach. The San Gabriel River is located approximately 2 miles (mi) to the southeast of the Project site and the Los Angeles River is located approximately 3.5 mi to the west. There are no surface water bodies located on the Project site but the Pacific Ocean is adjacent to the Project site along the southern boundary.

Project Site Drainage Pattern. Most of the surface runoff from the Project site is generated on the site, with almost no surface flow entering the site from other areas. There are several storm drain lines (see Figure 4.8.2: Existing Site Storm Drain System) running through and surrounding the Project site that collect and transfer the surface flow from the Project site. The northern half of the site is a grassy open space area that allows for rainfall to filter into the ground. The remaining storm water runoff generated by the site flows over asphalt pavement and concrete gutters to curb opening inlets located at various points surrounding the property boundary. These inlets then convey the flow into the beach and untreated to the west at a storm drain outlet that empties onto the beach, immediately to the north of the Belmont Pier. The existing site contains approximately 2.1 acres (ac) of impervious surfaces with the pervious areas accounting for approximately 3.7 ac.

Surface Water Quality. Surface water quality in the San Gabriel River Watershed has been affected in a way that is consistent with the high level of surrounding urban development. Non-point-source pollution from urban impervious surfaces such as parking lots, roadways, sidewalks, and rooftops is a major contributor to impairment of streams and water bodies. Impervious surfaces direct runoff into water systems of grease, oil, antifreeze, and other vehicle emissions; heavy metals from brake dust; pathogens; and food waste, litter, and other debris. Landscaped areas contribute pesticides, fertilizers, animal droppings, and other landscape waste into the storm water system. Meteorology may affect surface water quality through the quantity and intensity of storm events, which determine to what extent pollutants are washed away by runoff. Geology and soils may affect surface water quality in that they determine infiltration and runoff velocity. The more infiltration of runoff into the soil, and the slower the runoff velocity, the less ability the runoff has to carry sediments and pollutants. These pollutants can have damaging effects on both human health and aquatic ecosystems.

Ocean Water Quality. Long Beach has approximately 7 mi of public beach and is visited by over 50,000 people during the summer months. In urban areas during dry weather, runoff can occur as a result of landscape irrigation, the draining of swimming pools, car washing, and various commercial activities. Along the coast of California, where summers are dry, dry-weather runoff is the most common cause of advisories issued due to elevated bacteria levels.[2] In order to protect the safety of the public, weekly water samples are collected and tested routinely to monitor bacterial levels.

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1 Los Angeles Regional Water Quality Control Board (RWQCB), Water Quality Control Plan-Los Angeles Region, 1995, updated 2011.

2 California State Water Resources Control Board (SWRCB), "California Beach Water Quality Background Information." Website: www.swrcb.ca.gov/water_issues/programs/beaches/beach_water_quality/background.shtml (June 6, 2014).

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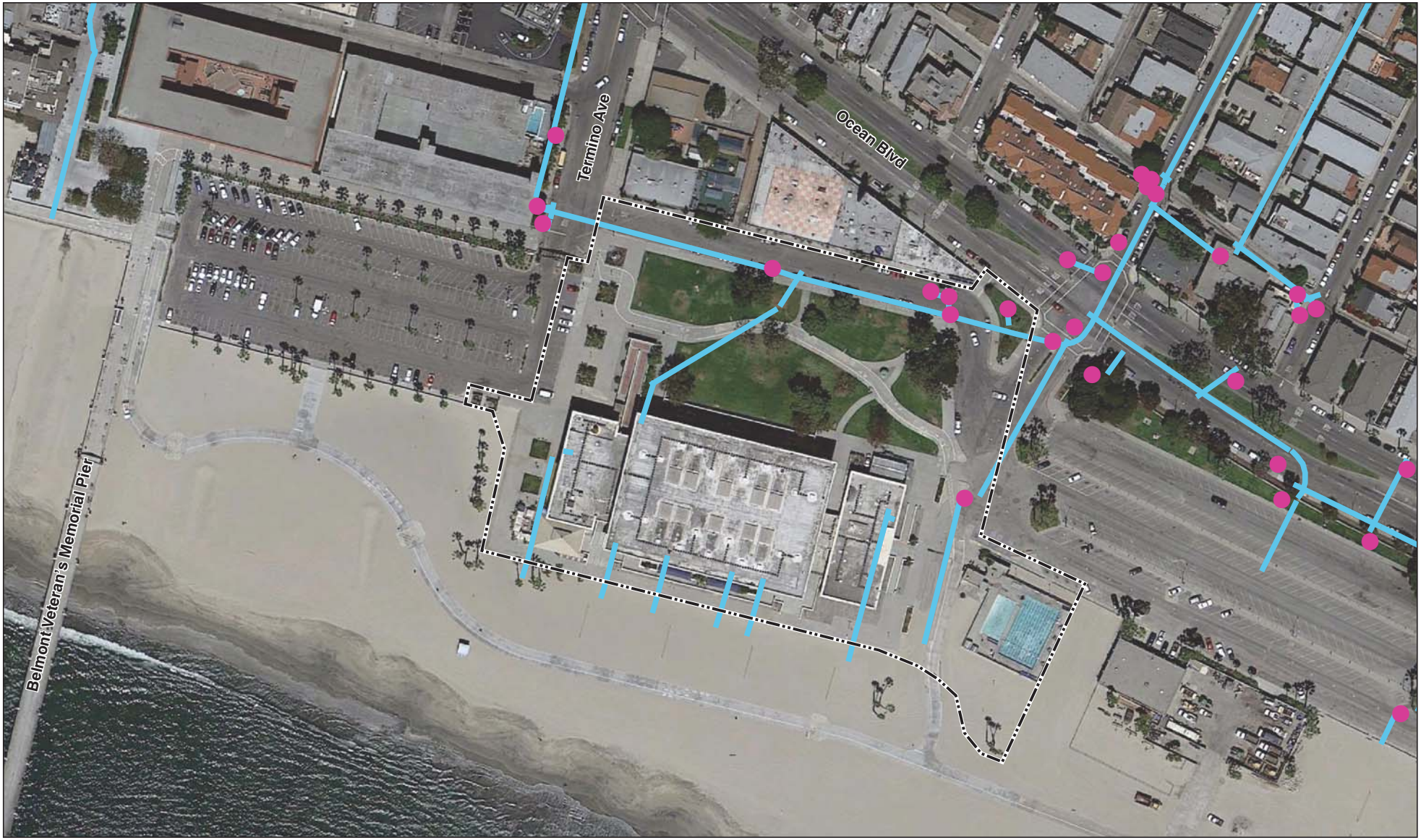

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FIGURE 4.8.2

LEGEND

- Project Site
- Existing Storm Drain Pipelines
- Storm Drain Device

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SOURCE: DigitalGlobe (4/08);City of Long Beach (2008, 1/09)

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Belmont Pool Revitalization Project

Existing Site Storm Drain System

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The City tests samples of ocean water for three types of bacteria (total coliform, fecal coliform, and enterococcus) and results are evaluated against standards established by the State. The thresholds to determine hazardous health conditions are:

- **Total Coliform:** 1,000 per 100 milliliters (mL) if Fecal/Total is >.1; 10,000 per 100 mL if Fecal/Total is <.1
- **Fecal Coliform:** 400 per 100 mL
- **Enteroccoccus:** 104 per 100 mL

Currently, the City tests the ocean water quality at 15 various locations along the coast. The West Side of Belmont Pier and Prospect Street Beach are two sampling sites located adjacent to the west and east of the Project site, respectively. In the 2013–2014 sampling year, summer dry weather A and B grades were up 10 percent from the previous year. Winter dry weather grades improved as well, with all locations earning A or B grades. However, all locations received F grades in wet weather. The City's wet weather 5-year average continues to be the worst in the State, with only 7 percent A or B grades.[1]

After substantial rainfall (0.10 inch or more), high levels of bacteria from storm drains, rivers, and polluted runoff enter the ocean, and the City issues an advisory for beach-goers to avoid all ocean water contact for at least 72 hours after rainfall, per the County's regulations for all beaches. When a closure is required, the City of Long Beach posts closure notices on the beach and on the City's website.

Groundwater

Groundwater Hydrology. The County of Los Angeles overlies 15 groundwater basins, as established by the Los Angeles RWQCB Water Quality Control Plan (Basin Plan) for the Los Angeles region (1995, updated 2011). The Project site is located in the Coastal Plain of Los Angeles Groundwater Basin and overlies the West Coast Subbasin (Basin No. 4-11.03).[2] The West Coast Subbasin covers an area of 142 sq mi and is bound by the Ballona Escarpment to the north, the Newport-Inglewood Fault Zone to the east, and the Pacific Ocean and Palos Verdes Hills to the south and west. Groundwater recharge occurs primarily as a result of underflow from the Central Subbasin. Water spread in the Central Subbasin percolates into aquifers and eventually crosses through and over the Newport-Inglewood Fault Zone, supplementing the groundwater supply in the West Coast Subbasin. The general regional groundwater flow pattern is southward and westward from the Central Coastal Plain toward the Ocean.[3]

According to the geotechnical report prepared for the Project site, groundwater was encountered in boring samples at depths of 6 to 9 feet (ft) below the existing grade.[4] However, fluctuations in

1 Heal the Bay, *2013–2014 Beach Report Card*. Website: http://www.healthebay.org/sites/default/files/pdf/BRC_2014_WEB_.pdf (accessed June 6, 2014).

2 California Department of Water Resources, *Groundwater Bulletin 118*, Coastal Plain of Los Angeles County Groundwater Basin, West Coast Subbasin, February 27, 2004.

3 Ibid.

4 MACTEC, *Report of Preliminary Geotechnical Investigation Proposed Belmont Plaza Olympic Pool Revitalization Project*. April 14, 2009.

groundwater levels may occur due to tidal fluctuations, variations in precipitation, ground surface topography, subsurface stratification, irrigation, and other factors that may not be easily identified.

Groundwater Quality. The West Coast Basin consists of recent alluvium that forms the semi-perched aquifer, the Bellflower aquitard, and the Gage aquifer. Regional groundwater beneath the Project site is believed to be affected by seawater intrusion. The first regional-occurring aquifer beneath the site is the Gage aquifer.

The general quality of groundwater within the Los Angeles Coastal Plain has been substantially degraded from background levels. The groundwater in the surrounding area has experienced seawater intrusion, which is currently under control in most areas. Groundwater in the lower aquifers of this basin is generally of good quality. However, the quality of groundwater in parts of the upper aquifers is degraded by seawater intrusion and organic pollutants from a variety of sources, such as leaking tanks and leaking crude oil pipelines.

The Basin Plan identifies the Central Basin of the Los Angeles Coastal Plain as having four existing beneficial uses listed below:

- MUN – Municipal and Domestic Supply;
- IND – Industrial Service Supply;
- PROC – Industrial Process Supply; and
- AGR – Agricultural Supply

Floodplains/Inundation Zones

According to the FEMA Federal Insurance Rate Map (FIRM) No. 06037C1970F (September 26, 2008), the eastern portion of the Project site is located within Zone A, Special Flood Hazard Area (SFHAs) subject to inundation by the 1-percent annual chance flood (see Figure 4.8.3). The western half of the Project site is located within Zone X, areas determined to be outside the 0.2-percent chance (500-year) floodplain.

Since the Project site abuts the beach and is adjacent to the Pacific Ocean, the Project site is located within the Tsunami Inundation Area, according to the Tsunami Inundation Map.[1] Damage from a tsunami wave generated from a large offshore earthquake also has the potential to occur in the Long Beach Harbor areas. To date, only the 1964 Alaska earthquake and a 1960 earthquake in Chile have caused tidal damage to the Long Beach area, which was limited to the impacts from tidal surges in the harbor areas.[2]

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1 California Emergency Management Agency, California Geological Survey, and University of Southern California. Tsunami Inundation Map. Website: http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Inundation_Maps/LosAngeles/Documents/Tsunami_Inundation_LongBeach_Quad_LosAngeles.pdf (accessed June 6, 2013).

2 City of Long Beach General Plan, Seismic Safety Element, 1988. Website: http://www.lbds.info/planning/advance_planning/general_plan.asp (accessed June 6, 2014).

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FIGURE 4.8.3

LEGEND

- Project Site

- SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A - No Base Flood Elevations determined.

ZONE X - Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than1foot or with drainage areas less than 1 square mile; and areas protected by levees from1% annual chance flood.

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Belmont Pool Revitalization Project

Floodplain Map

SOURCE: Bing (c. 2010) and Federal Emergency Management Agency. Map Service Center Website, "Current FEMA Issued Flood Maps". http://1.usa.gov/IEYQjB Accessed 5/20/2013.

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4.8.2 Regulatory Setting

Federal Policies and Regulations.

Clean Water Act. In 1972, the Federal Water Pollution Control Act (later referred to as the Clean Water Act [CWA]) was amended to require that the discharge of pollutants into waters of the United States from any point source be effectively prohibited unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. In 1987, the CWA was again amended to require that the United States Environmental Protection Agency (EPA) establish regulations for the permitting of storm water discharges (as a point source) by municipal and industrial facilities and construction activities under the NPDES permit program. The regulations require that Municipal Separate Storm Sewer System (MS4) discharges to surface waters be regulated by an NPDES permit.

The CWA requires states to adopt water quality standards for water bodies and have those standards approved by the EPA. Water quality standards consist of designated beneficial uses for a particular water body (e.g., wildlife habitat, agricultural supply, or fishing), along with water quality criteria necessary to support those uses. Water quality criteria are set concentrations or levels of constituents—such as lead, suspended sediment, and fecal coliform bacteria—or narrative statements that represent the quality of water that supports a particular use. Because California had not established a complete list of acceptable water quality criteria for toxic pollutants, EPA Region IX established numeric water quality criteria for toxic constituents in the form of the California Toxics Rule (CTR).

When designated beneficial uses of a particular water body are being compromised by water quality, Section 303(d) of the CWA requires identifying and listing that water body as impaired. Once a water body has been deemed impaired, a Total Maximum Daily Load (TMDL) must be developed for each impairing water quality constituent. A TMDL is an estimate of the total load of pollutants from point, nonpoint, and natural sources that a water body may receive without exceeding applicable water quality standards (often with a “factor of safety” included, which limits the total load of pollutants to a level well below that which could cause the standard to be exceeded). Once established, the TMDL is allocated among current and future dischargers into the water body.

National Flood Insurance Program. The National Flood Insurance Act of 1968 established the National Flood Insurance Program, which is based on the minimum requirements for floodplain management in the Federal Code of Regulations 44, Section 59-77, and is designed to minimize flood damage within SFHAs. FEMA is the agency that administrates the National Flood Insurance Program. SFHAs are defined as areas that have a 1-percent chance of flooding within a given year, also referred to as a 100-year flood. FIRMs were developed to identify areas of flood hazards within a community.

State Regulations.

Porter-Cologne Water Quality Control Act. The federal CWA places the primary responsibility for the control of water pollution and for planning the development and use of water resources with the states, although it does establish certain guidelines for the states to follow in developing their programs.

California's primary statute governing water quality and water pollution is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs) broad powers to protect water quality and is the primary vehicle for implementation of California's responsibility under the federal CWA. The Porter-Cologne Act grants the SWRCB and RWQCBs the authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites, and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, oil, or petroleum product.

Each RWQCB must formulate and adopt a water quality plan for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that an RWQCB may include in its region a regional plan with water discharge prohibitions applicable to particular conditions, areas, or types of waste.

California Coastal Act. The California Coastal Commission (Coastal Commission) is responsible for protecting water quality in coastal environments as defined under Sections 30230 and 30231 of the California Coastal Act (Coastal Act). The water quality provisions provide a broad basis for protecting coastal waters, habitats, and biodiversity associated with new development and redevelopment projects. To meet the objectives of Sections 30230 and 30231, the Coastal Commission supports a three-pronged approach to water quality management, which includes implementing site design, source control, and treatment control Best Management Practices (BMPs). New development projects that are within the Coastal Zone are required to apply for a Coastal Development Permit (CDP) through the Coastal Commission prior to construction. As part of the CDP process, projects must demonstrate water quality protection with the implementation of site design, source control, and treatment control BMPs.

Los Angeles Water Quality Control Plan (Basin Plan). The Los Angeles RWQCB has adopted a Basin Plan for its region of responsibility, which includes the City. The agency has delineated water resource area boundaries based on hydrological features. For purposes of achieving and maintaining water quality protection, specific beneficial uses have been identified for each of the hydrologic areas described in the Basin Plan. The Basin Plan also establishes implementation programs to achieve water quality objectives to protect beneficial uses and requires monitoring to evaluate the effectiveness of the programs. These objectives must comply with the State antidegradation policy (State Board Resolution No. 68-16), which is designed to

maintain high-quality waters while allowing some flexibility if beneficial uses are not unreasonably affected.

Beneficial uses of water are defined in the Basin Plan as those necessary for the survival or well-being of humans, plants, and wildlife. Examples of beneficial uses include drinking water supplies; swimming, industrial and agricultural water supply; and the support of freshwater and marine habitats and their organisms.

The Project site is located adjacent to, and runoff from the Project site ultimately flows into, the beach of Long Beach. The following list summarizes the beneficial uses for the beach of Long Beach as designated by the Los Angeles RWQCB:

- **Water Contact Recreation (REC-1):** Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, waterskiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.
- **Noncontact Water Recreation (REC-2):** Uses of water for recreational activities involving proximity to water but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, and aesthetic enjoyment in conjunction with the above activities.
- **Migration of Aquatic Organisms (MIGR):** Uses of water that support habitats necessary for migration, acclimatization between fresh and saltwater, or other temporary activities by aquatic organisms, such as anadromous fish.
- **Wildlife Habitat (WILD):** Uses of water that support terrestrial ecosystems, including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (i.e., mammals, birds, reptiles, amphibians, invertebrates), and wildlife water and food sources.
- **Spawning, Reproduction, and/or Early Development (SPWN)** Uses of water that support high-quality aquatic habitats suitable for reproduction and early development of fish, most frequently for grunion species.
- **Commercial and Sport Fishing (COMM):** Uses of water for commercial or recreation collection of fish, shellfish, or other aquatic organisms.
- **Navigation (NAV):** Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.
- **Marine Habitat (MAR):** Uses of water that support marine ecosystems, including but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).
- **Shellfish Harvesting (SHELL):** Uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sports purposes.

The Los Angeles RWQCB has designated narrative or numerical water quality objectives for all of its inland surface waters and enclosed bays and estuaries for the following parameters: ammonia; bacteria (coliform); bioaccumulation; biochemical oxygen demand (BOD);

biostimulatory substances; chemical constituents; chlorine; color; exotic vegetation; floating material; methylene blue activated substances (MBASs); mineral quality; nitrogen (nitrate, nitrite); oil and grease; dissolved oxygen; pesticides; pH; polychlorinated biphenyls (PCBs); radioactive substances; solid, suspended, or settable solids; taste and odor; temperature; toxicity; and turbidity. These objectives are listed in Table 4.8.A. If these objectives are exceeded, the Los Angeles RWQCB can use its regulatory authority to require municipalities to reduce pollutant loads to the affected receiving waters. The Los Angeles RWQCB utilizes water quality criteria, in the form of "scientific information developed by the EPA regarding the effect a constituent concentration has on human health, aquatic life, or other uses of water," to develop its water quality objectives.[1]

The Los Angeles RWQCB employs water quality standards from the California Toxics Rule (40 Code of Federal Regulations [CFR] §131.38) for potentially toxic constituents, primarily trace (heavy) metals and organic compounds, to determine whether beneficial uses are affected by storm and dry weather runoff. The values represent the numeric limits in receiving waters that will protect the "presence of, as well as the uses of, both fresh and salt water organisms."

That is, these values represent concentrations within a water body. The State has developed bacteriological standards to monitor water quality at public beaches. These are based on legislation adopted in 1999 (Assembly Bill 411) and are promulgated in the California Health and Safety Code, Section 115880. In the "Guidance for Beaches and Recreational Waters," the bacteriological standards are defined in Appendix A, Article 4, Healthfulness. Table 4.8.A, Water Quality Standards and Benchmarks, provides a comparison of standards and benchmarks for concentrations of constituents in runoff or in receiving waters.

California Ocean Plan. The SWRCB has adopted a Water Quality Control Plan for point source discharges to ocean waters of California called the California Ocean Plan (Ocean Plan). With the exception of wildlife habitat, the Ocean Plan identifies the same beneficial uses as the Los Angeles Basin Plan (Basin Plan). The Ocean Plan also incorporates general requirements for the management of wastes discharged directly into the ocean, effluent quality requirements for waste discharges directly into the ocean, discharge prohibitions, and general provisions. The Ocean Plan is incorporated by reference into the Basin Plan.

The Ocean Plan identifies beneficial uses for the Pacific Ocean. The Project site is located adjacent to, and runoff from the Project site eventually flows into, the Pacific Ocean. The following list summarizes the beneficial uses for ocean waters of the State as designated by the Ocean Plan:

- **Industrial Service Supply (IND)**: Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.

[1] Los Angeles RWQCB. Water Quality Control Plan, Los Angeles Region, 1995, updated 2011.

Table 4.8.A: Water Quality Standards and Benchmarks

Constituent	Basin Plan Objectives	California Toxics Rule (mg/L)[1]	Assembly Bill 411[2]
Ammonia	Numeric objectives have only been established for COLD and WARM beneficial uses. Shall not be present at levels that, when oxidized to nitrate, pose a threat to groundwater.	N/A[3]	N/A
Bacterial, Coliform	REC-1: Fecal coliform concentration shall not exceed a log mean of 200/100 milliliters (mL) (based on a minimum of not less than four samples for any 30-day period), nor shall more than 10 percent of samples collected during any 30-day period exceed 4,000/ 100 mL. SHELL: The median total coliform concentration throughout the water column for any 30-day period shall not exceed 70/100 mL, nor shall more than 10 percent of the samples collected during any 30-day period exceed 230/100 mL for a five-tube decimal dilution test or 330/100 mL when a three-tube decimal test is used.	N/A	Fecal coliform: 200/100 mL Total coliform: 1,000/100 mL
Bioaccumulation	Toxic pollutants shall not be present at levels that will bioaccumulate in aquatic life to levels that are harmful to aquatic life or human health.	See levels for metals	N/A
Biological Oxygen Demand (BOD)	Waters shall be free of substances that result in increases in the BOD, which adversely affect beneficial uses.	N/A	N/A
Biostimulatory Substances	Waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.	N/A	N/A
Chemical Constituents	Surface waters shall not contain concentrations of chemical constituents in amounts that adversely affect any designated beneficial use.	Includes pesticides and PCBs	N/A
Chemical Oxygen Demand (COD)	N/A	N/A	N/A
Chlorine, Total Residual	Chlorine residual shall not be present in surface water discharges at concentrations that exceed 0.1 mg/L and shall not persist in receiving waters at any concentration that causes impairment of beneficial uses.	N/A	N/A
Color	Waters shall be free of coloration that causes nuisance or adversely affects beneficial uses.	N/A	N/A
Total Copper	N/A	0.009	
Exotic Vegetation	Exotic vegetation shall not be introduced around stream courses to the extent that such growth causes nuisance or adversely affects beneficial uses.	N/A	N/A
Floating Material	Waters shall not contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.	N/A	N/A

Table 4.8.A: Water Quality Standards and Benchmarks

Constituent	Basin Plan Objectives	California Toxics Rule (mg/L)[1]	Assembly Bill 411[2]
Total Lead	N/A	0.025	N/A
Methylene Blue Activated Substances (MBASs)	Waters shall not have MBAS concentrations greater than 0.5 mg/L in waters designated MUN.	N/A	N/A
Mineral Quality	No waterbody specific objectives	N/A	N/A
Nitrogen (Nitrate, Nitrite)	Waters shall not exceed 10 mg/L nitrogen as nitrate-nitrogen plus nitrite-nitrogen, 45 mg/L as nitrate, 10 mg/L as nitrate-nitrogen, or 1 mg/L as nitrite-nitrogen.		
Oil and Grease	Waters shall not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water that cause nuisance or adversely affect beneficial uses.	N/A	N/A
Oxygen, Dissolved	SPWN: Waters shall not be depressed below 7 mg/L as a result of waste discharges.	N/A	N/A
Pesticides	No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. There shall be no increase in pesticide concentrations found in bottom sediments or aquatic life.	Chlordane: maximum concentrations, 2.4; continuous concentrations, 0.0043	N/A
pH	Inland water shall not be depressed below 6.5 or raised above 8.5 as a result of waste discharges. Ambient pH levels shall not be changed more than 0.5 units from natural conditions as a result of waste discharge.	N/A	N/A
Total Phosphorus	N/A	N/A	N/A
Polychlorinated Biphenyls (PCBs)	Pass-through or uncontrollable discharges to waters, or at locations where the waste can subsequently reach waters, are limited to 70 pg/L (30-day average) for protection of human health and 14 ng/L (daily average) to protect aquatic life in inland fresh waters.	N/A	N/A
Radioactive Substances	Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.	N/A	N/A
Solid, Suspended, or Settleable Materials	Waters shall not contain suspended or settleable material in concentrations that cause nuisance or adversely affect beneficial uses.	N/A	N/A
Total Suspended Solids (TSS)	N/A	N/A	N/A

Table 4.8.A: Water Quality Standards and Benchmarks

Constituent	Basin Plan Objectives	California Toxics Rule (mg/L)[1]	Assembly Bill 411[2]
Total Dissolved Solids (TDS)	N/A	N/A	N/A
Tastes and Odors	Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible aquatic resources, cause nuisance, or adversely affect beneficial uses.	N/A	N/A
Temperature	The natural receiving water temperature of all waters shall not be altered unless it can be demonstrated that such alteration in temperature does not adversely affect beneficial uses.	N/A	N/A
Toxicity	All waters shall be free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in, human, plant, animal, or aquatic life.	N/A	N/A
Turbidity	Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in natural turbidity attributable to controllable water quality factors shall not exceed the following limits: • Where natural turbidity is between 0 and 50 National Turbidity Units (NTU), increases shall not exceed 20 percent. • Where natural turbidity is greater than 50 NTU, increases shall not exceed 10 percent.	N/A	N/A
Total Zinc	N/A	0.12	N/A

Source: Los Angeles Regional Water Quality Control Board. Water Quality Control Plan, Los Angeles Region, 1995, updated 2011.
[1] Chronic toxicity values (over a 4-day period) in water with a hardness of 100 mg/L.
[2] Values are based on the log mean of at least five weekly samples during any 30-day sampling period.
[3] Not applicable. No standard or benchmark listed.
mg/L = milligrams per liter
N/A = not applicable
pH = percentage of hydrogen (acidity level)
ng//L = nanograms per liter
pg/L = picograms per liter

- **Water Contact Recreation (REC-1):** Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, waterskiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.
- **Noncontact Water Recreation (REC-2):** Uses of water for recreational activities involving proximity to water but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, and aesthetic enjoyment in conjunction with the above activities.
- **Navigation (NAV)**: Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.
- **Commercial and Sport Fishing (COMM):** Uses of water for commercial or recreation collection of fish, shellfish, or other aquatic organisms.
- **Preservation of Biological Habitats (BIOL)**: Uses of water that support designated areas or habitats, such as Areas of Special Biological Significance (ASBS), established refuges, parks, sanctuaries, ecological reserves, or other areas where the preservation or enhancement of natural resources requires special protection.
- **Rare, Threatened, or Endangered Species (RARE)**: Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under State or federal law as rare, threatened, or endangered.

The Ocean Plan sets forth limits of water quality characteristics for ocean waters to ensure the reasonable protection of beneficial uses and the prevention of nuisance. Similar to the Basin Plan, the Ocean Plan has established water quality objectives for bacteriological, physical, chemical, radioactive, and biological characteristics. These objectives are listed in Table 4.8.B.

Clean Water Act, Section 303, List of Water Quality Limited Segments. Section 303(d) specifically requires the State to develop a list of impaired water bodies and subsequent numeric TMDLs for whichever constituents impair a particular water body. These constituents include inorganic and organic chemical compounds, metals, sediments, and biological agents. The TMDL is the total amount of a constituent that can be discharged while meeting water quality objectives and protecting beneficial uses. It is the sum of the individual load allocations for point-source inputs (e.g., an industrial plant), load allocations for nonpoint-source inputs (e.g., runoff from urban areas), and natural background, with a margin of safety.[1]

[1] Los Angeles RWQCB. Water Quality Control Plan, 1995, updated 2011.

Table 4.8B: Water Quality Objectives

Constituent	Ocean Plan Objectives
Bacterial Characteristics	REC-1: Total coliform density shall not exceed 1,000/100 mL; Fecal coliform density shall not exceed 200/100 mL; Enterococcus density shall not exceed 35/100 mL (based on geometric mean of the five most recent samples for any 30-day period). SHELL: The median total coliform density shall not exceed 70/100 mL, nor shall more than 10 percent of the samples collected during any 30-day period exceed 23/100 mL.
Physical Characteristics	1. Floating particulates and grease and oil shall not be visible. 2. The discharge of waste shall not cause aesthetically undesirable discoloration of the ocean surface. 3. Natural light shall not be significantly reduced at any point outside the initial dilution zone as the result of the discharge of waste. 4. The rate of deposition of inert solids and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded.
Chemical Characteristics	1. The dissolved oxygen concentrations shall not at any time be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen-demanding waste materials. 2. The pH shall not be changed at any time more than 0.2 units from that which occurs naturally. 3. The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions. 4. The concentration of substances set forth in Table 1, Water Quality Objectives, in the Ocean Plan, in marine sediments shall not be increased to levels that would degrade indigenous biota. 5. The concentration of organic materials in marine sediments shall not be increased to levels that would degrade marine life. 6. Nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota. 7. Numerical Water Quality Objectives: Refer to Table 1, Water Quality Objectives, in the Ocean Plan, for specific numerical water quality objectives related to chemical constituents.

Source: State Water Resources Control Board and California Environmental Protection Agency. 2012. California Ocean Plan.
mL = milliliters

On November 12, 2010, the EPA approved California's 2008–2010 Section 303(d) list of impaired waters and disapproved the omission of several water bodies and associated pollutants that meet federal listing requirements. The EPA identified additional water bodies and pollutants for inclusion on the State's 303(d) list. The EPA provided public notice and the opportunity for public comment on our proposed additions that ended December 23, 2010. On October 11, 2011, the EPA issued its final decision regarding the waters, which the EPA added to the State's 303(d) list.

The City of Long Beach City Beach is on the list of waters added to the 2010 303(d) list. This location is placed in the Category 5 criteria, which means that it is a water segment where standards

are not met and a TMDL is required, but not yet completed, for at least one of the listed pollutants. Long Beach City Beach is listed as impaired for indicator bacteria on the 2010 303(d) list of impaired waters.[1]

TMDL Requirements. The Long Beach City Beaches were identified on the 2006 and 2010 303 (d) list of impaired waters as requiring a TMDL due to exceedances in concentrations of indicator bacteria. As such, the EPA approved the *Long Beach City Beaches and Los Angeles River Estuary Total Maximum Daily Loads for Indicator Bacteria* on March 26, 2012. This TMDL sets water quality standards for select indicator bacteria (e.g., E. coli, enterococci, total coliform, and fecal coliform). Concentrations of indicator bacteria are used to indicate the risk associated with the presence of fecal material and associated pathogens.[2] The anticipated TMDL completion date is 2019.

Clean Water Act, Section 402, National Pollutant Discharge Elimination System. Direct discharges of pollutants into waters of the United States are not allowed, except in accordance with the NPDES program established in Section 402 of the CWA.

General Construction Activity Storm Water Permit. The *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities*, Order No. 2009-0009-DWQ, National Pollutant Discharge Elimination System No. CAS000002, as amended by Order Nos. 2010-0004-DWQ and 2012-0006-DWQ (Construction General Permit), adopted by the SWRCB, regulates construction activity that includes clearing, grading, and excavation resulting in soil disturbance of at least 1 ac of total land area. The Construction General Permit authorizes the discharge of storm water to surface waters from construction activities. It prohibits the discharge of materials other than storm water and authorized nonstorm-water discharges and all discharges that contain a hazardous substance in excess of reportable quantities established at 40 CFR 117.3 or 40 CFR 302.4, unless a separate NPDES Permit has been issued to regulate those discharges.

The Construction General Permit requires that all project designers for projects where construction activities will occur over more than 1 ac do the following:

- Complete a Risk Assessment to determine pollution prevention requirements pursuant to the three risk levels established in the General Permit;
- Eliminate or reduce nonstorm-water discharges to storm sewer systems and other waters of the nation;

[1] United States Environmental Protection Agency (EPA), Region 9 Water Program, 2010 Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report) - Statewide. Website: http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml (accessed February 6, 2015).

[2] Los Angeles RWQCB. Long Beach City Beaches and Los Angeles River Estuary TMDLs for Indicator Bacteria. Website: http://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/Established/Longbeach/finalTMDLs-LongBeachCityBeaches-LARiverEstuaryBacteria.pdf. (accessed February 9, 2015).

- Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) that specifies BMPs to reduce pollution in storm water discharges to the Best Available Technology Economically Achievable/Best Conventional Pollutant Control Technology (BACT/BCPCT) standards; and
- Perform inspections and maintenance of all BMPs.

In order to obtain coverage under the Construction General Permit, a project contractor must electronically file all Permit Registration Documents with the SWRCB prior to the start of construction. Permit Registration Documents must include:

- Notice of Intent (NOI)
- Risk Assessment
- Site map
- SWPPP
- Annual fee
- Signed certification statement

Typical BMPs contained in SWPPPs are designed to minimize erosion during construction, stabilize construction areas, control sediment, control pollutants from construction materials, and address post construction runoff quantity (volume) and quality (treatment). The SWPPP must also include a discussion of the program to inspect and maintain all BMPs.

Local Requirements

Construction and operation of the proposed Project is subject to requirements of the following local permits and regulations.

Groundwater Discharge Permit. On July 6, 2013, the Los Angeles RWQCB issued the *Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties* (Order No. R4-2013-0095, Permit No. CAG994004) (Groundwater Discharge Permit). This permit regulates discharges of treated and untreated groundwater generated from permanent or temporary project dewatering operations or other applicable wastewater discharges not specifically covered in other general or individual NPDES permits. It specifies the discharge prohibitions, effluent limitations and discharge specifications, receiving water limitations, and general provisions and compliance determination criteria for groundwater generated from permanent or temporary dewatering operations or other wastewater discharge not covered in other general or individual NPDES permits. Dischargers are required to collect and analyze representative groundwater samples for all constituents listed in the Groundwater Discharge Permit. Based on the results, dischargers would be required to provide treatment for any toxic compounds detected above the applicable screening levels. To obtain coverage under the Groundwater Discharge Permit, each permittee must submit an NOI to begin the application process.

Municipal NPDES Permit. The City of Long Beach is subject to the *Waste Discharge Requirements for Municipal Separate Storm Sewer System Discharges from the City of Long Beach* (Permit No. R4-2014-0024, NPDES No. CAS004003) (MS4 Permit), which was approved February 6, 2014, and became effective on March 28, 2014. This MS4 Permit supersedes Order No. 99-060 issued in 1999. To implement the requirements of the 1999 MS4 Permit, the City developed the Long Beach Storm Water Management Program (LBSWMP), a comprehensive program of practices and activities aimed at reducing or eliminating storm water pollutants from new development to the maximum extent practicable.

The 2014 MS4 Permit requires that the City develop a Watershed Management Program (WMP) to implement the requirements of the MS4 Permit on a watershed scale that will include customized strategies, control measures, and BMPs. WMPs shall be developed using the Los Angeles RWQCB's Watershed Management Areas (WMAs). The City can elect to collaborate with other MS4 permittees on the development of an Enhanced Watershed Management Program (EWMP) that will evaluate the multibenefits of regional projects and implement regional control measures and BMPs. The WMP or EWMP will include an evaluation of existing water quality conditions, identify water quality priorities within each WMA, select watershed control measures, and incorporate compliance schedules. The draft WMPs are due to the Los Angeles RWQCB by June 28, 2015, and will then be implemented upon final approval. In the interim period between the approvals of the WMPs, the LBSWMP will be in effect.

Currently, the MS4 permit requires that the project designer and/or contractor of all new development and redevelopment projects that fall under specific "priority" project categories must develop a Standard Urban Stormwater Mitigation Plan (SUSMP). Certain categories of development are considered "priority" because the Los Angeles RWQCB determined that they have the greatest potential to degrade water quality. The three categories of "priority" projects include: (1) 10 or more home subdivisions; (2) 100,000-square-foot (sf) or larger commercial developments; and (3) projects located adjacent to or directly discharging to environmentally sensitive areas. Because the proposed Project includes more than 100,000 sf of commercial development, it is considered a "priority" project. As stated above, the guidance documents from the previous MS4 Permit will be in effect until the approval of the final WMPs. Therefore, a SUSMP is required to be developed for the proposed Project.

Municipal Code Section 18.61. Section 18.61, NPDES and SUSMP Regulations, of the City Municipal Code provides regulations and gives legal effect to certain requirements of the MS4 Permit and the subsequent requirements of the SUSMP, mandated by the Los Angeles RWQCB. The intent of these regulations is to prohibit non-storm water discharges into the storm drain systems or receiving waters and to implement source control BMPs to prevent or reduce the discharge of pollutants into the storm water to the maximum extent practicable. Chapter 18.61.040 of the Municipal Code states that:

> *New development projects and redevelopment projects in the City subject to the design and implementation of post-construction controls to mitigate storm water pollution, prior to completion of the projects, shall apply if required in the NPDES and SUSMP Regulations Manual.*

Municipal Code Section 18.74. Section 18.74, Low Impact Development Standards, of the City's Municipal Code requires the use of low impact development (LID) standards in the planning and construction of development projects contained in the *LID Best Management Practices Manual*. Compliance with the LID standards is determined through a LID Plan review. The LID Plan must demonstrate compliance with the requirements for infiltration, capture and reuse, evapotranspiration, and/or treatment on site through the use of BMPs. The on-site storm water management techniques must be properly sized, at a minimum, to infiltrate, evapotranspire, and/or store for use without any storm water runoff leaving the site to the maximum extent feasible, for at least the volume of water produced by a 0.75-inch storm event, the 85th percentile 24-hour storm event, or the 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area using a 48- to 72-hour draw down time, or the volume of annual runoff based on unit basin storage water quality volume to achieve 80 percent or more volume treatment. Section 18.74.050 of the Municipal Code requires that new development or redevelopment projects that do not demonstrate compliance with the LID requirements pay an off-site runoff mitigation fee.

4.8.3 Impact Significance Criteria

The impact significance criteria used for this analysis are based primarily on Appendix G of the *State California Environmental Quality Act (CEQA) Guidelines* and the City's CEQA Checklist. The proposed Project may be considered to have a significant effect related to water quality if implementation would:

Threshold 4.8.1: **Violate any water quality standards or waste discharge requirements;**

Threshold 4.8.2: **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 level (e.g., the production rate of preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted);**

Threshold 4.8.3: **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 that would result in substantial erosion or siltation on or off site;**

Threshold 4.8.4: **Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or a substantial increase in the rate or amount of surface runoff in a manner that would result in flooding on or off site;**

Threshold 4.8.5: **Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;**

Threshold 4.8.6: **Otherwise substantially degrade water quality;**

Threshold 4.8.7: **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;**

Threshold 4.8.8: **Place within a 100-year flood hazard area structures which would impede or redirect flood flows;**

Threshold 4.8.9: **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; or**

Threshold 4.8.10: **Expose the same due to inundation by seiche, tsunami, or mudflow.**

The Initial Study previously prepared for the proposed Project determined that the proposed Project would not have a significant impact with respect to Threshold 4.8.7, the placement of housing within a 100-year flood zone because the proposed Project does not include any residential components. Therefore, Threshold 4.8.7 is not addressed further in this Draft EIR.

CEQA Baseline. At the time the NOP was issued, the Project site contained both the Belmont Pool facilities and the outdoor temporary pool (opened in December 2013 to provide swimming facilities while the permanent facility was under construction). Although the site contained the former Belmont Pool building at the time of the NOP, the facility was subsequently demolished in February 2015 to alleviate an imminent public safety threat due to the seismically unsafe condition of the building.

The inclusion of the former building in the assessment of hydrology and water quality impacts is appropriate because the former facility was present on the site for approximately 45 years and represents the historic use of the site, and the historic drainage conditions for the site. The substantial evidence of recent historical use supports the determination that the Belmont Pool building as the baseline for hydrology and water quality impacts is appropriate.

4.8.4 Project Impacts

Threshold 4.8.1: **Would the project violate any water quality standards or waste discharge requirements?**

and

Threshold 4.8.6: **Would the project otherwise substantially degrade water quality?**

Less than Significant Impact with Mitigation Incorporated.

Construction. Pollutants of concern during construction include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. During construction activities, it is anticipated that the Project site would be graded and/or excavated resulting in exposed soil. Consequently, there would be an increased potential for soil erosion compared to existing conditions. In addition, chemicals, liquid products, petroleum products (such as paints,

solvents, and fuels), and concrete-related waste may be spilled or leaked and have the potential to be transported via storm runoff into downstream receiving waters (i.e., beach in Long Beach and, ultimately, the Pacific Ocean).

As specified in Mitigation Measure 4.8.1, the proposed Project would comply with the requirements of the Construction General Permit. Under the Construction General Permit, the proposed Project would be required to prepare a SWPPP and implement Construction BMPs detailed in the SWPPP during construction activities to minimize erosion and prevent spills. Construction BMPs would include, but not be limited to, Erosion Control and Sediment Control BMPs designed to minimize erosion and retain sediment on site and Good Housekeeping BMPs to prevent spills, leaks, and discharge of construction debris and waste into receiving waters. The SWPPPs would be developed, and Construction BMPs selected and implemented, to target pollutants of concern during construction. The Construction BMPs would be designed to retain sediment and other pollutants on site, so they would not reach receiving waters.

Construction activities on the Project site could require excavation of up to 13 ft below the existing grade during the removal of the existing wooden piles and construction of the pools. Groundwater depths ranged from approximately 6 to 9 ft below existing grades. Due to the anticipated depth of excavation and the depth of groundwater, it is anticipated that groundwater would be encountered during excavation, which would require groundwater dewatering.

Groundwater may contain high levels of total dissolved solids and other constituents that could be introduced to surface waters. As specified in Mitigation Measure 4.8.2, any groundwater dewatering during excavation would be conducted in accordance with the Los Angeles RWQCB's Groundwater Discharge Permit, which would require testing and treatment (as necessary) of groundwater encountered during groundwater dewatering prior to release to the storm drain system. If dewatered groundwater cannot meet the discharge limitations specified in the Groundwater Discharge Permit, groundwater would be disposed of in the sewer system and would have to meet Los Angeles County Sanitation District (LACSD) discharges limits per the requirements set forth in LACSD's Wastewater Ordinance.[1]

Implementation of Mitigation Measures 4.8.1 and 4.8.2, which require compliance with the General Construction Permit and the Groundwater Discharge Permit, including implementation of BMPs to target pollutants of concern, would reduce potential construction impacts related to violation of water quality standards or waste discharge requirements and degradation of water quality to less than significant levels.

Operation. Pollutants of concern during operation of the proposed on-site uses could potentially include pathogens, metals, nutrients, pesticides, organic compounds, sediment, trash and debris, oxygen-demanding substances, and oil and grease. In the existing condition, the Project site consists of approximately 2.1 ac of impervious surface area and approximately 3.7 ac of pervious surface. In the proposed Project condition, the Project site would consist of approximately 1.6 ac of impervious surface area and approximately 4.2 ac of pervious surface. The proposed Project

[1] Los Angeles County Sanitation District (LACSD). Wastewater Ordinance. April 1, 1972 amended July 1, 1998. Website: http://www.lacsd.org/wastewater/industrial_waste/iwordinances/wastewater_ordinance.asp (accessed February 10, 2015).

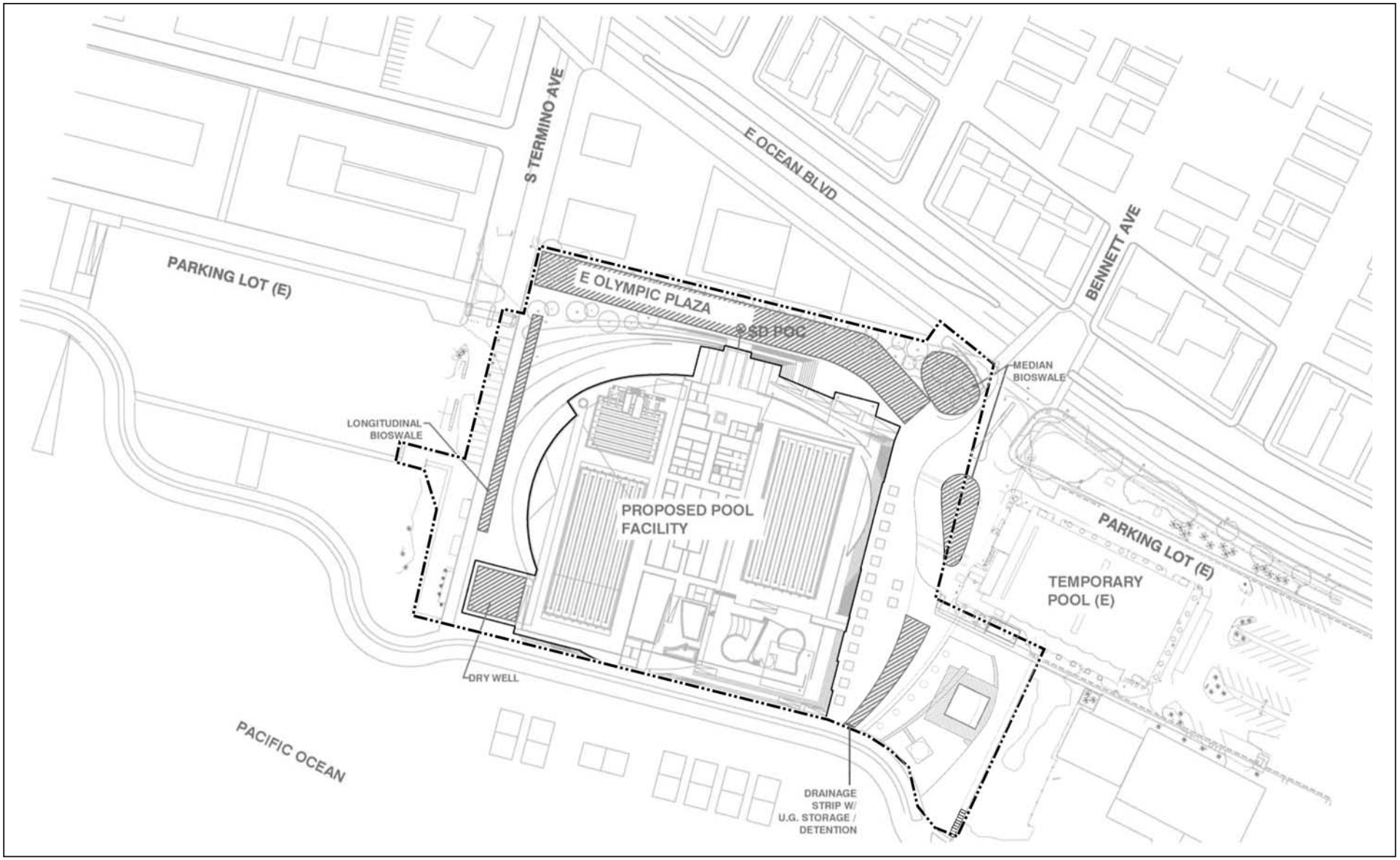
would, therefore, result in a permanent decrease in impervious surface area of approximately 0.5 ac and an increase in pervious area of approximately 0.5 ac. A decrease in impervious area would decrease the volume of runoff during a storm.

In accordance with the requirements of the LBSWMP and the MS4 Permit, new development and significant redevelopment projects must incorporate site design and source control BMPs to address post-construction storm water runoff management. In addition, new developments and redevelopment projects meeting one of the three categories (designated "Priority Projects") must implement applicable source control BMPs and treatment control BMPs on the site. Selection of treatment control BMPs is based on the pollutants of concern for the specific Project site and the BMP's ability to effectively treat those pollutants, in consideration of the site conditions and constraints. Further, new development and redevelopment projects must develop a project-specific SUSMP that describes the type of BMPs chosen for the Project site, as well as include operation and maintenance requirements for all structural treatment control BMPs.

As specified in Mitigation Measure 4.8.3, an SUSMP would be prepared for the proposed Project. The Site Design, Source Control, and Treatment BMPs specified in the Final SUSMP would be incorporated into the design of the proposed Project to treat pollutants of concern in storm water runoff prior to discharge into the storm drain system. Site Design BMPs are BMPs that reduce runoff or pollutants at the source through intentional use of landforms and materials. Source Control BMPs are measures that focus on reducing or eliminating runoff and controlling sources of pollutants during operation of the Proposed Project. Treatment BMPs utilize treatment mechanisms to remove pollutants that have entered storm water runoff. The BMPs would be incorporated into the design of the proposed Project and would treat storm water runoff from the Project site.

As shown in Figure 4.8.4, the proposed treatment BMPs are anticipated to include biofiltration swales (bioswales), filtration strip, an underground detention basin, and a drywell. Bioswales are vegetated channels that convey storm water and remove pollutants by filtration through the grass, sedimentation, adsorption to soil particles, and infiltration through the soil. Filtration strips are channels that convey storm water and remove pollutants by sedimentation and adsorption to soil particles, and infiltration through the soil. Detention basins are designed to reduce sediment and particulate loading in storm water runoff. Water is temporarily detained in the basin to allow sediment and particulates to settle out before the runoff is discharged to receiving waters. A drywell is an underground structure designed specifically for infiltration of stormwater.

As specified in Mitigation Measure 4.8.3, an SUSMP would be developed for the proposed Project, which would include the BMPs that would be consistent with the requirements of the City's *Low Impact Development (LID) Best Management Practices (BMP) Design Manual* and would target pollutants of concern from the Project site. In addition, the SUSMP would include an operations and maintenance plan for the bioswales, drywell, filtration strip, and an underground detention basin to ensure their long-term performance. Implementation of BMPs that target pollutants of concern in runoff from the Project site, as required by Mitigation Measure 4.8.3, would reduce potential operational impacts related to violation of water quality standards or waste discharge requirements and degradation of water quality to less than significant levels.



LSA

FIGURE 4.8.4

- Project Site

N

0 120 240
FEET

SOURCE: Hastings+Chivetta

Belmont Pool Revitalization Project

Water Quality Best Management Practices

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Threshold 4.8.2: **Would the project 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 level (e.g., the production rate of preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?**

Less than Significant Impact.

Construction. Due to the depth of groundwater (6 to 9 ft below existing grades) and the anticipated depth of excavation (up to 13 ft below existing grade), it is anticipated that groundwater dewatering would be required during removal of the existing wooden piles and construction of the pools. However, groundwater dewatering activities would be temporary, and the volume of groundwater removed would not be substantial. In addition, grading and construction activities would compact soil, which can decrease infiltration during construction. However, construction activities would be temporary, and the reduction in infiltration would not be substantial. Therefore, construction of the proposed Project would not substantially deplete groundwater or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. Construction impacts related to groundwater supplies would be less than significant, and no mitigation is required.

Operation. Operation of the proposed Project would not require groundwater extraction. The proposed Project would not directly utilize local groundwater but continue to use water from the local municipal supply. Additionally, the proposed Project would replace the existing facility with a similar facility. As discussed previously, the proposed Project would decrease impervious surface by 0.5 ac, which would increase infiltration. As a result, the proposed Project would not constitute interference with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. Operational impacts related to groundwater supplies would be less than significant, and no mitigation is required.

Threshold 4.8.3: **Would the project 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 that would result in substantial erosion or siltation on or off site?**

and

Threshold 4.8.4: **Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or a substantial increase in the rate or amount of surface runoff in a manner that would result in flooding on or off site?**

Less than Significant Impact with Mitigation Incorporated.

Construction. During construction activities on the Project site, there is the potential for the drainage pattern to be altered temporarily. As previously described, the Project site would be

graded and excavated soil would be exposed, and there would be an increased potential for soil erosion and flooding compared to existing conditions. During a storm event, soil erosion and sedimentation could occur at an accelerated rate. In addition, grading and construction activities would compact soil, which can increase runoff during construction. There are no on-site streams or rivers; therefore, the proposed Project would not alter the course of a stream or river.

Mitigation Measure 4.8.1 requires preparation of a SWPPP to identify Construction BMPs to be implemented as part of the proposed Project to reduce impacts to water quality and drainage during construction, including those impacts associated with soil erosion, siltation, and increased runoff. Construction BMPs would include, but not be limited to, Erosion Control and Sediment Control BMPs designed to minimize erosion sedimentation. The SWPPP would be developed, and Construction BMPs selected and implemented, to target pollutants of concern during construction. Implementation of Mitigation Measure 4.8.1, which requires compliance with the requirements of the Construction General Permit and implementation of BMPs during construction, would reduce potential construction impacts related to erosion, siltation, and flooding to less than significant levels.

Operation. The proposed Project would change on-site drainage patterns by adding impervious surface areas and structures. However, flows from the Project site would continue to discharge to the existing off-site storm drain system. There are no on-site streams or rivers; therefore, the proposed Project would not alter the course of a stream or river.

The proposed Project would decrease the overall impervious area by 0.5 ac and increase the pervious area by 0.5 ac, resulting in an increase in filtration. The proposed Project would also include a comprehensive drainage system to convey on-site storm flows, including on-site detention and infiltration BMPs. A detailed hydrology report would be prepared for the proposed Project to ensure that the on-site storm drain facilities are appropriately sized to prevent on-site or off-site flooding (refer to Mitigation Measure 4.8.4). In the proposed condition, the impervious surface areas would not be prone to erosion or siltation. Treatment BMPs, including biofiltration swales (bioswales), filtration strip, an underground detention basin, and a drywell, are anticipated to be incorporated into the proposed Project design to convey storm water and minimize on-site erosion and siltation that could reach downstream receiving waters (refer to Mitigation Measure 4.8.3).

Therefore, with implementation of Mitigation Measure 4.8.3, which requires the implementation of Treatment BMPs to control runoff, and Mitigation Measure 4.8.4, which requires the development of a hydrology report to ensure flows would not exceed existing storm drain facilities, the proposed Project would not contribute to an increase in downstream erosion, siltation, or flooding.

Threshold 4.8.5: Would the project create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

Less than Significant Impact with Mitigation Incorporated.

Construction. As discussed above, construction of the proposed Project has the potential to introduce pollutants into the storm water drainage system from erosion, siltation, and accidental spills. In addition, grading and construction activities would compact soil, which can increase runoff during construction. However, as specified in Mitigation Measure 4.8.1, the Construction General Permit requires preparation of a SWPPP to identify Construction BMPs to be implemented during the proposed Project construction to reduce impacts to water quality, including those impacts associated with soil erosion, siltation, spills, and increased runoff.

Due to the depth of groundwater (6 to 9 ft below existing grades) and the anticipated depth of excavation (up to 13 ft below existing grade), it is anticipated that groundwater dewatering would be required during the removal of the existing wooden piles and construction of the pools. However, groundwater dewatering activities would be temporary, and the volume of groundwater removed would not be substantial. As specified in Mitigation Measure 4.8.2, any groundwater dewatering during excavation would be conducted in accordance with the Los Angeles RWQCB's Groundwater Discharge Permit, which would require testing and treatment (as necessary) of groundwater encountered during groundwater dewatering prior to release to the storm drain system. If dewatered groundwater cannot meet the discharge limitations specified in the Ground Water Discharge Permit, groundwater would be disposed of in the sewer and would have to meet the LACSD discharge limits.

With implementation of Mitigation Measures 4.8.1 and 4.8.2, which require compliance with the General Construction Permit and the Groundwater Discharge Permit, construction impacts related to exceeding the capacity of, and providing additional sources of polluted runoff to, storm water drainage systems would be reduced to less than significant levels.

Operation. As discussed above, the proposed Project would decrease impervious surface area by 0.5 ac and increase the pervious area by approximately 0.5 ac, which would decrease the volume and velocity of runoff on the site. The proposed Project would also include a comprehensive drainage system to convey on-site storm flows. During design of the proposed Project, a detailed hydrology report would be prepared to ensure that the on-site storm drain facilities are appropriately sized to prevent on-site flooding (Mitigation Measure 4.8.4). In addition, the proposed Project would include Treatment BMPs, including biofiltration swales (bioswales), filtration strip, an underground detention basin, and a drywell to convey storm water and reduce potential pollutants and the volume of runoff reaching downstream receiving waters (refer to Mitigation Measure 4.8.3).

Therefore, with implementation of Mitigation Measures 4.8.3 which requires the implementation of Treatment BMPs to control runoff, and Mitigation Measure 4.8.4, which requires the development of a hydrology report to ensure flows would not exceed existing storm drain facilities, operational impacts related to exceedance of the capacity of, and providing additional

sources of polluted runoff to, storm water drainage systems would be reduced to a less than significant level.

Threshold 4.8.8: Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Less than Significant with Mitigation Incorporated. According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) No. 06037C1970F (September 26, 2008), the eastern half of the Project site is located within Zone A, a Special Flood Hazard Area (SFHA) subject to inundation by the 1-percent annual chance flood, and the western half of the Project site is located within Zone X, areas determined to be outside the 0.2-percent chance (500-year) floodplain (see Figure 4.8.3). The City is a participant in the National Flood Insurance Program (NFIP), which allows City property owners to obtain federally backed flood insurance.[1] FEMA requires that all projects within Zone A enforce NFIP floodplain management regulations and purchase mandatory flood insurance. The regulations require that a project not increase the base flood elevation of a 100-year floodplain more than 1 ft. During subsequent engineering and design phase of the proposed Project, detailed analysis would be conducted to ensure that the design specifically addresses floodplain issues. In addition, implementation of Mitigation Measure 4.8.5 would require a floodplain report to be prepared in order to reduce impacts to the floodplain. Compliance with City and FEMA regulations and implementation of Mitigation Measure 4.8.5 would ensure that the proposed Project would not expose people or structures to the risk of flooding, create floodplains, or result in an increase in the base flood elevation. Therefore, impacts associated with flood hazard areas would be less than significant.

Threshold 4.8.9: Would the project 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?

Less than Significant Impact. Dam failure is defined as the structural collapse of a dam that releases the water stored in a reservoir behind the dam. A dam failure is usually the result of the age of the structure, inadequate spillway capacity, or structural damage caused by an earthquake or flood. Three flood control dams lie upstream of the City: Sepulveda Basin, Hansen Basin, and Whittier Narrows Basin. Sepulveda and Hansen Basins lie more than 30 mi upstream from where the Los Angeles River passes through the City, which is north of the Project site. According to the Sepulveda and Hansen Dam Failure Inundation Maps, [2] the Project site is not located within the dam inundation area. In addition, flood waters from these dam failures are expected to dissipate before reaching the City, due to low and flat ground and their distances from the City.

[1] City of Long Beach, Public Works. 2015. Flood Hazards/Flood Zone Information. Website: http://www.longbeach.gov/pw/engineering/floodzone.asp#Building in a Flood Zone (accessed February 10, 2015).

[2] City of Long Beach. 2004. City of Long Beach Natural Hazards Mitigation Plan.

The Project site is located within the dam inundation area for the Whittier Narrows Dam. [1] According to the U.S. Army Corps of Engineers, Dam Safety Program[2] (Corps 2015), Whittier Narrows Dam received a Dam Safety Action Class II rating in December 2008. This rating is assigned to dams where failure could begin during normal operations or be initiated as the consequence of a natural event, such as an earthquake. This classification indicates that the likelihood of failure, prior to remediation, is too high to assure public safety, or that the combination of life or economic consequences with probability of failure is very high. However, because of the project site's location at the furthest point away from the Whittier Narrows Dam within the inundation area, most of the flooding would dissipate by the time it reaches the Project site. In addition, the City would have ample time to notify onsite users to evacuate and onsite users would have ample time to evacuate before waters reached the project site. Additionally, the Project does not propose the development of habitable structures onsite, thereby further minimizing the risk to life and property in the event of a dam failure. Furthermore, the United States Army Corps of Engineers has implemented the following Interim Risk Reduction Measures to reduce impacts to life and property in the event of dam failure: remote monitoring, inspection and monitoring, flood mapping, updating the Emergency Action Plan annually, inspecting toe drain and gallery, and initiating a Dam Safety Modification Study. The City has also developed emergency preparedness plans that would help the public be prepared for these types of emergency situations. In addition, the County of Los Angeles has regional catastrophic preparedness planning and regional evacuation routes. Therefore, because the City and County have implemented mitigation plans, emergency preparedness plans, and evacuation routes, impacts associated with the failure of a dam or levee would be less than significant, and no mitigation is required.

Threshold 4.8.10: Would the project result in inundation by seiche, tsunami, or mudflow?

Less than Significant Impact. Seiching is a phenomenon that occurs when seismic groundshaking induces standing waves (seiches) inside enclosed bodies of water, including lakes and reservoirs. Such waves can flood adjacent properties. According to the *Geotechnical Evaluations* (Appendix E) prepared for the proposed Project, the site is not located in the vicinity of any large bodies of water that could adversely affect the site in the event of earthquake-induced seiches. Therefore, the risk associated with possible seiche waves is not considered a potential constraint or a potentially significant impact of the proposed Project, and no mitigation is necessary.

Tsunamis are generated wave trains generally caused by tectonic displacement of the sea floor associated with shallow earthquakes, sea floor landslides, rock falls, and exploding volcanic islands. The proposed Project is located adjacent to the beach and the Pacific Ocean and is within a tsunami inundation zone.[3] Up to 900 patrons are anticipated as part of typical daily operation of the Belmont Pool. Although there could be an increase in visitors to the site during special events, the proposed Project is replacing an existing use and would not create a new risk. Additionally, the proposed

1 City of Long Beach. 2015. City of Long Beach Natural Hazards Mitigation Plan.

2 United States Army Corps of Engineers Los Angeles District. 2015. Website: http://www.spl.usace.army.mil/Media/FactSheets/tabid/1321/Article/477341/dam-safety-program.aspx; (accessed August 13, 2015).

3 California Emergency Management Agency, California Geological Survey, and University of Southern California. 2009. Tsunami Inundation Map for Emergency Planning Long Beach Quadrangle. Website: http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Inundation_Maps/LosAngeles/Documents/Tsunami_Inundation_LongBeach_Quad_LosAngeles.pdf (accessed February 10, 2015).

Project would not increase the risk of a tsunami occurring. Furthermore, as stated above, the City has implemented the 2015 Natural Hazards Mitigation Plan for the purpose of protecting the lives, property, and facilities of citizens, employees, businesses, industry, infrastructure, and the environment from natural hazards. In addition, the County of Los Angeles has developed regional catastrophic preparedness planning and regional evacuation routes. Therefore, because the proposed Project is not introducing a new risk to tsunami exposure and with the implementation of the Natural Hazards Mitigation Plan, emergency preparedness plans, and the County of Los Angeles regional catastrophic plans, the risks associated with tsunamis are considered less than significant, and no mitigation is required.

Mudslides and mudflows are described as a shallower type of slope failure, usually affecting the upper soil mantle or weathered bedrock underlying natural slopes and triggered by surface or shallow subsurface saturation. A typical mudslide or mudflow is a failure of the upper 4 ft of saturated hillside material. As stated in the *Geotechnical Evaluations*, the Project site is relatively level and the absence of nearby slopes precludes any slope stability hazards. Furthermore, the site is not in a state of California Earthquake-Induced Landslide Hazard Zone. Therefore, the proposed Project would result in less than significant impacts related to exposure of people or structures to risk of loss, injury, or death involving flooding as a result of inundation by mudflow, and no mitigation is required.

4.8.5 Cumulative Impacts

The cumulative study area for hydrology and water quality is the Los Cerritos Channel and Alamitos Bay WMA. This is considered the cumulative study area because it includes drainage from all the areas that lead to Alamitos Bay. This area is essentially built out; therefore, future development would involve redevelopment of existing properties. Each of the cumulative projects, individually and cumulatively, could potentially increase the volume of storm water runoff and contribute to pollutant loading in storm water runoff reaching both the City's storm drain system and the San Gabriel River, and ultimately the Pacific Ocean, resulting in cumulative impacts to hydrology and surface water quality. However, as with the proposed Project, each of the cumulative projects would be subject to NPDES and MS4 Permit requirements for both construction and operation. Each project would be required to develop a SWPPP and SUSMP that target site-specific pollutants of concern and would be evaluated individually to determine appropriate BMPs to minimize impacts to surface water quality. Furthermore, since the Los Cerritos Channel and Alamitos Bay WMA is along the Pacific Ocean, there is the potential for cumulative projects, individually and cumulatively, to result in an encroachment into the 100-year flood zone, similar to the proposed Project. However, as with the proposed Project, each of the cumulative projects would be required to comply with City and FEMA regulations and prepare a Floodplain Report during final design to address any potential impacts to the floodplain, and if required, reduce those impacts. In addition, the City Development Services Director reviews all development projects on a case-by-case basis to ensure that sufficient local and regional drainage capacity is available. Thus, the proposed Project's contribution to cumulative impacts to hydrology and water quality would be less than significant.

4.8.6 Level of Significance Prior to Mitigation

Construction and operational impacts related to groundwater recharge and flooding due to failure of a dam or levee would be less than significant. There would be no potential construction or operational

impacts related to placement inundation by seiche, tsunami, or mudflow. In addition, cumulative impacts to hydrology and water quality would be less than significant.

Construction and operational impacts related to violation of water quality standards and waste discharge requirements; degradation of water quality; on- or off-site erosion, siltation, and flooding; exceeding the capacity of or providing additional sources of polluted runoff to the storm water drainage system; and placement of structures within a 100-year floodplain would be potentially significant prior to mitigation.

4.8.7 Mitigation Measures

The following measures are required actions of the proposed Project that would reduce impacts to hydrology and water quality below levels of significance.

Mitigation Measure 4.8.1: **Construction General Permit.** Prior to issuance of a grading permit, the City of Long Beach (City) shall obtain coverage for the proposed Project under the State Water Resources Control Board National Pollutant Discharge Elimination System *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Order No. 2009-0009-DWQ, Permit No. CAS000002), as amended by Order Nos. 2010-0004-DWQ and 2012-0006-DWQ (Construction General Permit), or subsequent issuance. For projects with a disturbed area of 5 or more acres, a Storm Water Pollution Prevention Plan (SWPPP) with construction Best Management Plans (BMPs) is required to be submitted to both the Los Angeles Regional Water Quality Control Board (RWQCB) and the City.

The City shall provide the Waste Discharge Identification Numbers to the Development Services Director to demonstrate proof of coverage under the Construction General Permit. A SWPPP shall be prepared and implemented for the proposed Project in compliance with the requirements of the Construction General Permit. The SWPPP shall identify construction BMPs to be implemented to ensure that the potential for soil erosion and sedimentation is minimized and to control the discharge of pollutants in storm water runoff as a result of construction activities.

Mitigation Measure 4.8.2: **Dewatering During Construction Activities.** During project construction, the City of Long Beach Development Services Director, or designee, shall ensure that any dewatering activities during construction shall comply with the requirements of the *Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties* (Order No. R4-2013-0095, Permit No. CAG994004) (Groundwater Discharge Permit) or subsequent permit. This Groundwater Discharge Permit

shall include submission of a Notice of Intent (NOI) for coverage under the permit to the Los Angeles RWQCB at least 45 days prior to the start of dewatering and compliance with all applicable provisions in the permit, including water sampling, analysis, and reporting of dewatering-related discharges. If dewatered groundwater cannot meet the discharge limitations specified in the Groundwater Discharge Permit, a permit shall be obtained from the Los Angeles County Sanitation District (LACSD) to discharge groundwater to the sewer per LACSD's Wastewater Ordinance.

Mitigation Measure 4.8.3 **Standard Urban Stormwater Mitigation Plan.** Prior to issuance of grading permits, the City shall submit a Final Standard Urban Stormwater Mitigation Plan (SUSMP) for the proposed Project to the Development Services Director for review and approval. Project-specific site Design, Source Control, and Treatment Control BMPs contained in the Final SUSMP shall be incorporated into final design. The BMPs shall be consistent with the requirements of the *Low Impact Development (LID) Best Management Practices (BMP) Design Manual*. Additionally, the BMPS shall be designed and maintained to target pollutants of concern and reduce runoff from the Project site. The SUSMP shall include an operations and maintenance plan for the prescribed Treatment Control BMPs to ensure their long-term performance.

Mitigation Measure 4.8.4 **Hydrology Reports.** Prior to issuance of grading permits, the City shall submit a final hydrology report for the proposed Project to the City Development Services Director, or designee, for review and approval. The hydrology report shall demonstrate, based on hydrologic calculations, that the proposed Project's on-site storm conveyance and detention and infiltration facilities are designed in accordance with the requirement of the Los Angeles County Department of Public Works Hydrology Manual.

Mitigation Measure 4.8.5 **Floodplain Report.** During final design, the Project engineer shall prepare and submit a floodplain/hydrology report to the City Development Services Director, or designee, to address any potential impacts to the floodplain and, if required, reduce those impacts. The report shall comply with City and Federal Emergency Management Agency (FEMA) regulations and shall not increase the base flood elevation by more than 1 foot. Detailed analysis shall be conducted to ensure that the Project design specifically addresses floodplain issues so that the proposed Project complies with local and FEMA regulations on floodplains.

4.8.8 Significant Unavoidable Adverse Impacts

With implementation of the mitigation measures identified above, the proposed Project would not result in significant unavoidable adverse impacts related to Hydrology and Water Quality.

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