4.8 HYDROLOGY AND WATER QUALITY

4.8.1 INTRODUCTION

This section addresses potential impacts to hydrology and water quality resulting from implementation of the proposed project. Documents reviewed and incorporated as part of this analysis include the *Hydrogeological Evaluation Report* (MACTEC Engineering and Consulting, Inc., January 26, 2009), the *Addendum to the Hydrogeological Evaluation Report* (AMEC Environment & Infrastructure, Inc., April 5, 2012), the *Draft Addendum to the Hydrogeological Evaluation Report* (AMEC Environment & Infrastructure, Inc., July 2, 2012) and the *Impacts from Temporary Dewatering Memo, Proposed Melrose Triangle Mixed-Use Project* (AMEC Environment & Infrastructure, Inc., July 10, 2012) (Appendix H). The following analysis also relied on information contained in the *Report of Geotechnical Consultation Proposed Melrose Triangle Mixed-Use* Project (MACTEC Engineering and Consulting, Inc., April 27, 2010) and the *Revised Supplemental Geotechnical Consultation, Proposed Melrose Triangle Mixed-Use Project* (MACTEC Engineering and Consulting, Inc., April 16, 2012) (Appendix H).

4.8.2 METHODOLOGY

Project impacts to hydrology and water quality were evaluated based on the proposed project's adherence to local, State, and federal standards, proposed land use, site design, and proposed Best Management Practices (BMPs) for control of surface runoff and reduction of pollutants in runoff. Because of the proposed change in land use, the multiple beneficial uses designated for receiving waters, and the listed impairments of the receiving waters, quantitative assessments for both hydrology and water quality impacts were conducted.

4.8.3 EXISTING ENVIRONMENTAL SETTING

4.8.3.1 Groundwater

Subsurface Hydrology. The project site is located in the Hollywood (groundwater) Subbasin of the Coastal Plain of the Los Angeles Groundwater Basin. The Hollywood Subbasin underlies the northeastern part of the Coastal Plain of the Los Angeles Groundwater Bain. The subbasin is bound on the north by the Santa Monica Mountains and the Hollywood fault, on the east by the Elysian Hills, on the west by the Newport-Inglewood fault, and on the south by the La Brea High (an area of shallow bedrock). Groundwater in the Hollywood Subbasin is replenished by percolation of precipitation and stream flow from the Santa Monica Mountains to the north. Groundwater flow is generally westward through the Hollywood Subbasin toward the Newport-Inglewood fault.[1]

[1] Department of Water Resources. California's Groundwater Bulletin 118. Coastal Plain of Los Angeles GroundwaterBasin, Hollywood Subbasin.

The project area is underlain by numerous water-bearing zones (aquifers) separated by zones of low permeability (aquicludes). The following summarizes geotechnical testing conducted to characterize the on-site groundwater conditions.

Historically, high groundwater in the City of West Hollywood (City) and the area known as La Cienega is a result of surface seeps and springs, which created marshland and swamps. Current groundwater levels remain high in the City and on the project site. Hydroquip Pump and Dewatering Corporation (Hydroquip) conducted a preliminary test of the groundwater in February 2003. The main objective of the testing was to determine whether or not an artesian condition was present, wherein subsurface water encountered below the existing ground surface connects with pressurized stratas, causing water to rise to higher than anticipated levels, or even to levels above the ground surface. As part of the investigation, two wells were installed at the east end of the project site; testing concluded that groundwater is static at 30 feet below ground surface (bgs); and no artesian characteristics were observed.

In 2008, four additional groundwater wells were installed to obtain a detailed description of site-specific groundwater conditions. Depth to groundwater varied from approximately 7 to 20 feet bgs; the variation in depth to groundwater is related to changes in topographic surface elevation across the project site. Groundwater elevation at the project site was measured at approximately 205 feet above mean sea level (MSL). Groundwater flow beneath the project site is directed toward the southeast at a gradient of about 0.025 feet per foot. Three water-bearing zones were encountered beneath the site: Younger Alluvium (from ground surface to depths of about 40 feet bgs), Older Alluvium (from about 40 to 70 feet bgs), and the Exposition Aquifer (from about 70 to >125 feet bgs). The depth to groundwater was also measured at the four groundwater wells on June 27, 2012 to assess changes in groundwater flow conditions since 2008. Depth to groundwater ranged from approximately 7 to 20 feet bgs and groundwater elevation was approximately 205 feet MSL, which was consistent with the groundwater elevations measured in 2008. Additional water level measurements were also collected on June 27, 2012 at two additional shallow monitoring wells located in the parking lot at the northern corner of the project site. Depth to groundwater was measured as 30.0 and 25.6 feet bgs at these two monitoring wells.

Groundwater Quality. Hydroquip conducted testing of the groundwater beneath the site in February 2003. A groundwater sample was analyzed for heavy metals, total petroleum hydrocarbons (TPH), total nonfilterable residue, oil and grease, ammonia, sulfide, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and diesel-range organics. A preliminary review of the analytical data suggests that the groundwater beneath the project site is not impacted by the above-referenced contaminants. There was a slightly elevated total suspended solid (TSS) concentration, which may be attributed to the sampling method or hydrogeologic factors.

On April 25, 2005, the two groundwater test wells installed by Hydroquip were sampled by The Source Group to determine the chemical condition of groundwater underlying the project area. The samples were analyzed for a number of chemical constituents. The samples showed most concentrations were below detection limits for the respective chemical constituents. The chemicals that were detected included biological oxygen demand (BOD) (29 mg/L), sulfate (53

mg/L), total dissolved solids (TDS) (400 mg/L), chloride (50 mg/L), TPHg (660 µg/L), cadmium (1.3 µg/L), copper (13 µg/L), zinc (96 µg/L), boron (0.20 mg/L), turbidity (2.0 NTU), and tetrahydrofuran [THF] (9,800 µg/L, which was estimated due to limitations in the test procedures and analytical equipment). Two grab well samples were reanalyzed to better understand the source of the THF. THF was detected in both wells at concentrations of 6,400 µg/L and 25,000 µg/L. THF is used as a solvent for high polymers such as PVC (polyvinyl chloride) which is used in plastic piping among other uses. The source of THF is unknown; however, it is unlikely to have originated from historical site operations.

Groundwater samples were collected on September 29 and October 1, 2008. No volatile organic carbons (VOCs), semi organic volatile carbons (SVOCs), hydrocarbon fuels or compounds, pesticides, or polychlorinated biphenyls were detected above laboratory detection limits. All dissolved metals were not detected except for boron at 179 µg/L and copper at 0.54 µg/L. Other chemicals that were detected include total dissolved solids (880 mg/L), hardness (530 mg/L), chloride (128 mg/L), nitrate as N (0.28 mg/L), nitrite as N (0.09 mg/L), pH (7.36), and sulfate (181 mg/L).

4.8.3.2 Surface Water

Drainage. The project site is developed with structures and paved surfaces with minimal perimeter landscaping. The project site drains from north to south-southeast toward Almont Avenue and Melrose Avenue in a sheet flow configuration following the natural slope of the site. Runoff is captured by on-site storm drains located along the southern and eastern boundaries of the project site and carried off site to the existing catch basin located on Almont Avenue. Runoff is eventually directed to Ballona Creek Channel by a network of underground storm drains managed by the Los Angeles County Flood Control District (LCFCD).

The City is located within the Ballona Creek Watershed in the Los Angeles-San Gabriel Hydrologic Unit; Ballona Creek discharges to Santa Monica Bay approximately 9 miles (mi) from the project site. The Ballona Creek Watershed, located in the northwestern part of the Los Angeles Basin, is a drainage area of approximately 130 square miles. Within the watershed, approximately 60 percent of the land use can be categorized as residential, 17 percent as recreational/open space, 16 percent as commercial, 5 percent as industrial, and 2 percent as other. The major tributaries to the Ballona Creek Watershed include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous storm drains.

Floodplains. The Flood Insurance Rate Map for the City indicates that the project site is located within flood zone designation "X," defined by the Federal Emergency Management Agency (FEMA) as an area determined to be outside the 100-and 500-year flood zones.

Inundation. The project site is not subject to inundation from earthquake-related impacts or dam failure. There are no dams or levees located in the vicinity of the project site, and the site is not located within a dam inundation area. There are no surface water bodies, including reservoirs, in the project vicinity, that could result in a seiche and subsequent flooding of the project site. The

project site is not in a mapped landslide area; therefore, the potential for mudflows to inundate the project site is low (refer to Section 4.5, Geology and Soils).

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. Because the project site is approximately 9 miles from the Pacific Ocean, and is approximately 240 feet above mean sea level, and the site vicinity contains flood control infrastructure to reduce flooding of the area, inundation by tsunamis is not a concern for the project site.

4.8.3.3 Pollutants of Concern

Several pollutants are commonly associated with storm water runoff, including sediment, nutrients, bacteria, oxygen-demanding substances, petroleum products, heavy metals, toxic chemicals, and floatables. The anticipated and potential pollutants in storm water or urban runoff for various land uses are reflected in Table 4.8.A. The project site is currently a commercial development with respect to this table. The proposed project would be considered a commercial/residential development. These pollutants and their impacts on water quality and aquatic habitat are described in more detail below.

Table 4.8.A: Anticipated and Potential Pollutants Generated by Land Use Type

	General Pollutant Categories								
Priority Project Categories	**Sediments**	**Nutrients**	**Heavy Metals**	**Organic Compounds**	**Trash and Debris**	**Oxygen-Demanding Substances**	**Oil and Grease**	**Bacteria and Viruses**	**Pesticides**
Attached Residential Development	A	A			A	P[1]	P[2]	P	A
Commercial/ Industrial Development > 100,000 sf	P[1]	P[1]		P[2]	A	P[5]	A	P[3]	P[5]
Restaurants					A	A	A	A	
Parking Lots	P[1]	P[1]	A		A	P[1, 5]	A		P[1]

Source: California Storm Water BMP Handbook—New Development and Redevelopment (2003).
http://www.cabmphandbooks.com

[1] A potential pollutant if landscaping exists on site.
[2] A potential pollutant if the project includes uncovered parking areas.
[3] A potential pollutant if land use involves food or animal waste products.
[4] Including petroleum hydrocarbons.
[5] Including solvents.

A = Anticipated
sf = square feet
P = Potential

Sediments. Natural sediment loads are important to downstream environments by providing habitat, substrate, and nutrition; however, increased sediment loads can result in several negative effects to downstream environments. Excessive sediment can be detrimental to aquatic life by interfering with photosynthesis, respiration, growth, and reproduction. In addition, pollutants that

adhere to sediment, such as nutrients, trace metals, and hydrocarbons, can have other harmful effects on the aquatic environment when they occur in elevated levels.

Nutrients. Nutrients are typically composed of phosphorus and/or nitrogen. Fertilizers are a main source of nitrogen and phosphorus in urban runoff. Other sources of phosphorus in runoff are lawn clippings and tree leaves that accumulate on streets and in gutters. Elevated levels in surface waters cause algal blooms and excessive vegetative growth. As nutrients are absorbed, the vegetative growth decomposes, utilizing oxygen in the process and reducing dissolved oxygen levels. Dissolved oxygen is critical for support of aquatic life.

The ammonium form of nitrogen (found in wastewater discharges) converts to nitrite and nitrate in the presence of oxygen, which further reduces the dissolved oxygen levels in water.

Kjeldahl-N is defined as the sum of organic nitrogen and ammonia nitrogen, and excludes nitrite and nitrate. Total inorganic nitrogen is comprised of ammonia and nitrate.

Heavy Metals. Bioavailable forms of trace metals are toxic to aquatic life. The most common metals found in urban runoff are lead, zinc, and copper. Other trace metals, such as cadmium, chromium, and mercury are typically not detected or detected at very low levels in urban runoff.[1] Sources of heavy metals in surface waters include emissions and deposits from automobiles, industrial wastewater, and common household chemicals.

Organic Compounds. Organic compounds are carbon-based and are found in pesticides, solvents, and hydrocarbons. Elevated levels can indirectly or directly constitute a hazard to life or health. During cleaning activities, these compounds can be washed off into storm drains. Dirt, grease, and grime may adsorb concentrations that are harmful or hazardous to aquatic life.

Trash and Debris. Trash and debris can have an adverse effect on the recreational value of a water body and aquatic habitat. It also can interfere with aquatic life respiration and can be harmful or hazardous to aquatic animals that mistakenly ingest floating debris.

Oxygen-Demanding Substances. Oxygen-demanding substances include plant debris (such as leaves and lawn clippings), animal wastes, and other organic matter. Microorganisms utilize dissolved oxygen during consumption of these substances, which reduces a water body's capacity to support aquatic life.

[1] Los Angeles County (LA County), 2000. Los Angeles County 1994–2000 Integrated Receiving Water Impacts Report.

Petroleum Hydrocarbons. Petroleum hydrocarbons include oil and grease, benzene, toluene, ethyl benzene, xylene (constituents in gasoline), and polyaromatic hydrocarbons. Sources of petroleum hydrocarbons include parking lots and roadways, leaking storage tanks, auto emissions, and improper disposal of waste oil. Some of these materials can be toxic to aquatic life at low concentrations.

Bacteria and Viruses. Bacteria sampling and analysis are used to indicate relative levels of other pathogens such as viruses. Bacterial levels in urban runoff can exceed public health standards for water contact recreation. Bacteria levels in streams within natural watersheds also can exceed standards for water contact recreation. A common source of bacteria is animal excrement, and other sources include soils and plant materials.

Pesticides. A pesticide is a chemical agent designed to control pest organisms. Pesticides can persist in the environment and can bioaccumulate (concentrate within the body) over several years, resulting in health problems for the affected organism.

Surface Water Quality. The *Water Quality Control Plan, Los Angeles Region* (Basin Plan), prepared by the Los Angeles Regional Water Quality Control Board (LARWQCB), notes that the water quality in Ballona Creek is impaired by pollutants from industrial effluent, illegal dumping of sewage, historical overflows of untreated sewage into Ballona Creek during storm events, and pollutants from nonpoint sources. With recent upgrades to the Hyperion Sewage Treatment Plant, overflows to Ballona Creek have been substantially reduced.

4.8.4 REGULATORY SETTING

4.8.4.1 Federal Regulations

National Flood Insurance Act. The National Flood Insurance Act established the National Flood Insurance Program, which is based on the minimal requirements for floodplain management and is designed to minimize flood damage within Special Flood Hazard Areas. As discussed in Section 4.8.2, the project site is located outside of the 100- or 500-year floodplain.

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, 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 support a particular use. Because California had not established a complete list of acceptable water quality criteria for toxic pollutants, the 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.

The receiving water for the project site, as described in greater detail below, has constituents on the 303(d) list and is considered impaired; one TMDL has been developed to address an impairment.

Clean Water Act, Section 303, List of Water Quality Limited Segments. The 2010 list of impaired waters (303[d] list) was approved by the EPA on November 12, 2010. Ballona Creek's impairments are listed in Table 4.8.B.

TMDL Requirements. The following TMDLs have been developed to address water quality impairments for Ballona Creek:

- **Bacteria.** The Bacteria TMDL for Ballona Creek, Ballona Estuary, and Sepulveda Channel was adopted by the Regional Water Quality Control Board (RWQCB) on June 8, 2006, and approved by the State Water Resources Control Board (SWRCB) on November 15, 2006; the Office of Administrative Law (OAL) on February 22, 2007; and the EPA on March 26, 2007. The TMDL became effective on April 27, 2007.
- **Metals.** The Ballona Creek Metals TMDL was adopted by the RWQCB on September 6, 2007 and approved by the SWRCB on June 17, 2008, the OAL on October 6, 2008, and the EPA on October 29, 2008. The TMDL became effective on October 29, 2008. This TMDL sets load allocations for copper, lead, selenium, and zinc from point sources and nonpoint sources (e.g., urban runoff).

Table 4.8.B: Ballona Creek Impairments

Pollutant	Total Maximum Daily Load Status	Expected Total Maximum Daily Load Completion Date	Total Maximum Daily Load Approval Date
Ballona Creek			
Cadmium (sediment)	Still Required	2005[1]	N/A
Coliform Bacteria	Approved	N/A	2007
Copper, Dissolved	Approved	N/A	2005
Cyanide	Still Required	2019	N/A
Lead	Approved	N/A	2005
Selenium	Approved	N/A	2005
Toxicity	Approved	N/A	2005
Trash	Approved	N/A	2001
Viruses (enteric)	Approved	N/A	2007
Zinc	Approved	N/A	2005
Ballona Creek Estuary			
Cadmium	Approved	N/A	
Chlordane (tissue & sediment)	Approved	N/A	2005
Coliform Bacteria	Approved	N/A	2007
Copper	Approved	N/A	2005
DDT (tissue & sediment)	Approved	N/A	2005
Lead (sediment)	Approved	N/A	2005
PAHs (Polycyclic Aromatic Hydrocarbons) (sediment)	Approved	N/A	2005
PCBs (Polychlorinated biphenyls) (tissue & sediment)	Approved	N/A	2005
Sediment Toxicity	Approved	N/A	2005
Shellfish Harvesting Advisory	Still Required	2006	
Silver	Approved	N/A	2005
Zinc (sediment)	Approved	N/A	2005
Ballona Creek Wetlands			
Exotic Vegetation	Still Required	2019	N/A
Habitat Alterations	Still Required	2019	N/A
Hydromodification	Still Required	2019	N/A
Reduced Tidal Flushing	Still Required	2019	N/A
Trash	Approved	N/A	2001

Source: 2010 Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report), http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml. Accessed 04/24/12.
[1] A USEPA-approved TMDL has made a finding on nonimpairment for this pollutant.
N/A = not applicable

- **Toxics.** The Ballona Creek Estuary Toxics TMDL was adopted by the RWQCB on July 7, 2005, and approved by the SWRCB on October 20, 2005; the OAL on December 15, 2005; and the EPA on December 22, 2005. The TMDL became effective on January 11, 2006. This TMDL sets load allocations for cadmium, copper, lead, silver, zinc, chlordane, dichlorodiphenyltrichloroethane (DDT), polychlorinated biphenyl (PCBs), and polycyclic aromatic hydrocarbon (PAHs) from point sources and nonpoint sources.
- **Trash.** The Ballona Creek Trash TMDL was adopted by the RWQCB on September 19, 2001 and approved by the SWRCB on February 19, 2002; the OAL on July 18, 2002; and the EPA on August 1, 2002. The TMDL became effective on August 28, 2002. Revisions to the

TMDL were adopted by the RWQCB on March 4, 2004, and became effective on August 11, 2005.

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.

State Regulations

California 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 within 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 Board (RWQCB) 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 a RWQCB may include in its region a regional plan with water discharge prohibitions applicable to particular conditions, areas, or types of waste. The RWQCBs are also authorized to enforce discharge limitations, take actions to prevent violations of these limitations from occurring, and conduct investigations to determine the status of quality of any of the waters of the state within their region. Civil and criminal penalties are also applicable to persons who violate the requirement of the Porter-Cologne Act or SWRCB/RWQCB orders.

Water Quality Control Plan, Los Angeles River Basin (Basin Plan). The 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.

Table 4.8.C shows the beneficial uses for the Ballona Creek Watershed as designated by the RWQCB.

Table 4.8.C: Beneficial Uses of Receiving Waters

Beneficial Use	Ballona Creek Watershed
Municipal and Domestic Supply (MUN): Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.	P
Contact Water Recreation (REC-1): Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible, such as swimming, wading, waterskiing, skin diving, scuba diving, surfing, white-water activities, fishing, and use of natural hot springs.	P
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, such as picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, and sightseeing.	E
Warm Freshwater Habitat (WARM): Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.	P
Wildlife Habitat (WILD): Uses of water that support terrestrial ecosystems, including but not limited to preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), and wildlife water and food sources.	E

Source: *Water Quality Control Plan, Los Angeles Region* (1994).
E: Existing beneficial use; P: Potential beneficial use

The existing beneficial uses for the Hollywood (groundwater) Subbasin as designated by the RWQCB in the Basin Plan are listed below.

- Municipal and Domestic Supply (MUN): Includes uses of groundwater for community, military, municipal, or individual water supply systems.
- Agricultural Supply (AGR): Includes uses of groundwater for farming, horticulture, or ranching. These uses include but are not limited to irrigation, stock watering, and support of vegetation for range grazing.
- Industrial Service Supply (IND): Includes uses of groundwater for industrial activities that do not depend primarily on water quality such as mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil well repressurization.

- Industrial Process Supply (PROC): Includes uses of groundwater for industrial activities that depend primarily on water quality, which include process water supply and all uses of water related to product manufacture or food preparation.

The RWQCB has designated narrative or numerical water quality objectives for all of its inland surface waters for several parameters; the objectives applicable to the proposed project site are listed in Table 4.8.D. Water quality objectives for groundwater basins are listed in Table 4.8.E. In addition, the RWQCB has designated the following numeric water quality objectives for the Hollywood (groundwater) Subbasin: 700 mg/L of TDS, 100 mg/L of sulfate, 100 mg/L of chloride, and 1.0 mg/L of boron. If these objectives are exceeded, the RWQCB can use its regulatory authority to require municipalities to reduce pollutant loads to the affected receiving waters. The 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 (RWQCB 1994).

California Toxics Rule. The California Toxics Rule (CTR) provides water quality criteria for certain potentially toxic compounds for inland surface waters, enclosed bays, estuaries, and waters designated with human health or aquatic life uses. Although the CTR criteria do not apply directly to the discharges of storm water runoff, the CTR criteria are utilized as benchmarks for toxics in urban runoff. The CTR and other water quality criteria and targets are used as benchmarks to evaluate the potential ecological impacts of storm water runoff to receiving waters. The CTR establishes acute and chronic surface water quality standards for certain water bodies. Acute criteria provide benchmarks for the highest permissible concentration, below which aquatic life can be exposed for short periods of time without deleterious effects. Chronic criteria provide benchmarks for an extended period of time (i.e., for four days or more) without deleterious effects. The acute CTR criteria have a shorter relevant averaging period (less than four days) and provide a more appropriate benchmark for comparison for storm water flows.

CTR criteria are applicable to the receiving water body and, therefore, must be calculated based on the probable hardness values of the receiving waters. At higher hardness values for receiving waters, certain constituents, including copper, lead, and zinc are more likely to be complexed (bound with) components in the water column. This, in turn, reduces the bioavailability and resulting potential toxicity of these metals.

Construction General Permit. On September 2, 2009, the State Water Resources Control Board adopted the *National Pollutant Discharge Elimination System (NPDES) 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, NPDES No. CAS000002). In accordance with NPDES regulations, the State of California requires that any construction activity disturbing one acre or more of soil comply with the Construction General Permit. To obtain authorization for proposed storm water discharges pursuant to this permit, the landowner (discharger) is required to submit a Notice of Intent and Permit Registration Documents, including a risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), annual fee, and signed certification statement to the State Water Resources Control Board. Dischargers are required to implement BMPs meeting the technological standards of Best Available

Table 4.8.D: Water Quality Criteria for Inland Surface Waters

Constituent	Basin Plan Objectives	California Toxics Rule (mg/L)[1]
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.	No standard or objective
Bacterial, Coliform	REC-1: Fecal coliform concentration shall not exceed a log mean of 200/100 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.	No standard or objective
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
Biological Oxygen Demand (BOD)	Waters shall be free of substances that result in increases in the BOD, which adversely affect beneficial uses.	No standard or objective
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.	No standard or objective
Chemical Constituents	Surface waters shall not contain concentrations of chemical constituents in amounts that adversely affect any designated beneficial use. Waters designated for domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the limits specified in Title 22 of the California Code of Regulations and incorporated by reference into Table 3-5, 3-6, and 3-7 of the Basin Plan.	Includes pesticides and PCBs
Chemical Oxygen Demand (COD)	No standard or objective	No standard or objective
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.	No standard or objective
Color	Waters shall be free of coloration that causes nuisance or adversely affect beneficial uses.	No standard or objective
Total Copper	No standard or objective	0.009
Exotic Vegetation	Exotic vegetation shall not be introduced around stream courses to the extent that such growth causes nuisance or adversely affect beneficial uses.	No standard or objective
Floating Material	Waters shall not contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.	No standard or objective
Total Lead	No standard or objective	0.025
Methylene Blue Activated Substances (MBAS)	Waters shall not have MBAS concentrations greater than 0.5 mg/l in waters designated MUN.	No standard or objective

[1] Chronic toxicity values (over a 4-day period) in water with a hardness of 100 mg/L.

Table 4.8.D: Water Quality Criteria for Inland Surface Waters

Constituent	Basin Plan Objectives	California Toxics Rule (mg/L)[1]
Mineral Quality	No waterbody specific objectives for Ballona Creek.	No standard or objective
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.	No standard or objective
Oxygen, Dissolved	The mean annual dissolved oxygen concentration of all waters shall be greater than 7 mg/L, and no single determination shall be less than 5 mg/L, except when natural conditions cause lesser concentrations. The dissolved oxygen content of all surface waters designated as WARM shall not be depressed below 5 mg/L.	No standard or objective
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: max conc. 2.4, continuous conc., 0.0043
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.	No standard or objective
Total Phosphorus	No standard or objective	No standard or objective
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.	No standard or objective
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. Waters designated for use as domestic or municipal supply (MUN) shall not contain concentration of radionuclides in excess of the limits specified in Table 4 of Section 64443 of Title 22 of the California Code of Regulations which is incorporated by reference into the Basin Plan Table 3-9.	No standard or objective
Solid, Suspended, or Settleable Materials	Waters shall not contain suspended or settleable material in concentrations that cause nuisance or adversely affect beneficial uses.	No standard or objective
Total Suspended Solids (TSS)	No standard or objective	No standard or objective
Total Dissolved Solids (TDS)	No standard or objective	No standard or objective
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.	No standard or objective

Table 4.8.D: Water Quality Criteria for Inland Surface Waters

Constituent	Basin Plan Objectives	California Toxics Rule (mg/L)[1]
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.	No standard or objective
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.	No standard or objective
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.	No standard or objective
Total Zinc	No standard or objective	0.12

Source: Los Angeles Regional Water Quality Control Board. 1994. Water Quality Control Plan-Los Angeles Region.

Table 4.8.E: Groundwater Quality Objectives

Constituent	Basin Plan Objectives
Bacteria	In groundwaters used for domestic or municipal supply (MUN) the concentration of coliform organisms over any seven day period shall be less than 1.1/100 milliliters (ml).
Chemical Constituents and Radioactivity	Groundwaters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents and radionuclides in excess of the limits specified in Title 22 of the California Code of Regulations and incorporated by reference into Tables 3-5, 3-6, 3-7, and 3-9 of the Basin Plan.
Nitrogen (Nitrate, Nitrite)	Groundwaters shall not exceed 10 mg/L nitrogen as nitrate-nitrogen plus nitrite-nitrogen, 10 milligrams per liter (mg/L) as nitrate-nitrogen, or 1 mg/L as nitrite-nitrogen.
Taste and Odor	Groundwaters shall not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

Source: Los Angeles Regional Water Quality Control Board. 1994. Water Quality Control Plan-Los Angeles Region.

Technology/Best Control Technology to reduce or eliminate storm water pollution. BMPs include programs, technologies, processes, practices, and devices that control, prevent, or remove or reduce pollution. Permittees must also maintain BMPs and conduct inspection and sampling programs as required by the permit. Dischargers are also required to comply with monitoring and reporting requirements to ensure that discharges comply with the numeric action levels and numeric effluent limitations specified in the permit.

Local Regulations

Drainage and Flood Control

Drainage and flood control structures and improvements in the project vicinity are subject to review and approval by the City for on-site local drainage facilities and improvements. The regulatory and design frameworks pertaining to such facilities include the following:

- **County Regional Facilities.** Facilities owned, maintained, and operated by the County of Los Angeles (County) with watersheds that cover at least 1,000 acres. County regional facilities must be designed to accommodate 100-year frequency storms as outlined in the Los Angeles County Hydrology Manual.
- **County Subregional Facilities.** County facilities consisting of watersheds that range in size from 640 acres to 1,000 acres. Systems with tributary areas 640 acres or greater must be designed for a 100-year frequency storm event as outlined in the Los Angeles County Hydrology Manual.
- **Local Facilities.** These are facilities with watersheds less than 640 acres that are owned and maintained by the local jurisdiction or the County. Facilities with tributary areas less than 640 acres must be designed for a 25-year frequency storm event as outlined in the Los Angeles County Hydrology Manual.

The proposed project only would involve changes to on-site facilities.

Dewatering Permit. The discharge of treated or untreated groundwater associated with construction or project dewatering to surface waters in coastal Los Angeles or Ventura Counties is regulated by 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. R4-2008-0032, NPDES No. CAG994004), adopted by the Los Angeles RWQCB on June 5, 2008. This permit specifies the discharge prohibitions, receiving water limitations, monitoring and reporting program requirements, and general compliance determination criteria for said discharges. Each Permittee must submit a Notice of Intent to begin the application process.

Municipal NPDES Permit. The City is a co-permittee under the Waste Discharge Requirements for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles County, Except Those Discharges Originating from the City of Long Beach (Order No. R4-2012-0175, NPDES Permit No. CAS004001). This permit was adopted by the Los Angeles RWQCB on November 8, 2012.

Prior to the issuance of Order R4-2012-0175, Order No. 01-182 served as the NPDES Permit for MS4 storm water and nonstorm water discharges within the Coastal Watersheds of the County of Los Angeles. Until guidance documents for Order R4-2012-0175 are adopted, the guidance documents for Order No. 01-182 will remain in effect. The project would have to comply with the guidance documents in effect during the plan check process. Currently, the Los Angeles County Storm Water Quality Management Program (SQMP) is the local enforcement mechanism of the NPDES, which controls water pollution by regulating point sources that discharge pollutants to receiving waters.

Order No. 01-182 specifies that all new development and redevelopment projects that fall under specific priority project categories must comply with the *Los Angeles County Standard Urban Storm Water Mitigation Plan* (SUSMP, March 2000). The following projects are subject to SUSMP requirements:

- Single-family hillside residential developments of one acre or more of surface area;
- Housing developments of 10 units or more;
- One hundred thousand or more square feet of impervious surface area industrial/commercial development;
- Automotive service facilities;
- Retail gasoline outlets;
- Restaurants;
- Parking lots with 5,000 square feet or more of surface area or with 25 or more parking spaces;
- Redevelopment projects in subject categories that meet redevelopment thresholds; or
- New development or redevelopment project located in or directly adjacent to or discharging directly into an environmentally sensitive area, where the development will: discharge storm water and urban runoff that is likely to impact a sensitive biological species or habitat; and create 2,500 square feet or more of impervious surface area.

These categories of development are considered "priority" because it has been determined by the RWQCB that they have the greatest potential to degrade water quality.

The SUSMP includes requirements for Site Design BMPs, Source Control BMPs, and Treatment Control BMPs. As labeled, Site Design BMPs are BMPs that are incorporated into the design of the project such as conserving natural areas and properly designing trash storage areas. Source Control BMPs are pollution prevention BMPs that can be structural or nonstructural practices. Examples include good housekeeping, stenciling of catch basins, protecting slopes from erosion, and maintenance of BMPs. Treatment Control BMPs are physical devices that remove pollutants from storm water and include biofilters, water quality inlet devices, detention basins, etc.

The specific SUSMP requirements are as follows:

- Postdevelopment peak storm water runoff discharge rates shall not exceed the estimated predevelopment rate for developments where the increased peak storm water discharge rate will result in increased potential for downstream erosion;

- Conserve natural areas;
- Minimize storm water pollutants of concern. This requires the incorporation of a BMP or combination of BMPs best suited to maximize the reduction of pollutant loadings in that runoff to the maximum extent practicable;
- Properly design outdoor material and trash storage areas;
- Properly design trash storage areas;
- Provide proof of ongoing BMP maintenance;
- Protect slopes and channels from erosion;
- Provide storm drain stenciling and signage; and
- Design postconstruction structural or Treatment Control BMPs (unless specifically exempted) to mitigate (infiltrate or treat) a set volume of runoff using any of four methods (in general, the 85th percentile storm in a 24-hour period).

Collectively, the proposed project's Site Design, Source Control, and Treatment Control BMPs are required to address the pollutants of concern identified for the proposed project.

City of West Hollywood Development Conditions

Refer to Section 3.3.9 for the list of Development Conditions applicable to hydrology and water quality.

City of West Hollywood Municipal Code. WHMC Chapter 15.56, Storm Water and Urban Runoff Pollution Control, sets forth standards to protect water quality in the City. These standards include the requirements of the City's Municipal NPDES Permit and the Los Angeles County SUSMP.

4.8.5 THRESHOLDS OF SIGNIFICANCE

The following thresholds of significance criteria are based on Appendix G of the CEQA Guidelines. Based on these thresholds, implementation of the proposed project would have a significant impact related to hydrology and water quality if the project 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 which 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 substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;

Threshold 4.8.5: Create or contribute runoff water which 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 delineation map;

Threshold 4.8.8: Place within a 100-year flood hazard area structures that 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 a dam; or

Threshold 4.8.10: Cause inundation by seiche, tsunami, or mudflow.

4.8.5 PROJECT IMPACTS

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

Potentially Significant Impact.

Construction. During construction, the Applicant would be required to adhere to the Construction General Permit and utilize typical BMPs (Table 4.8.B) specifically identified in the SWPPP for the proposed project to prevent Construction Pollutants from contacting storm water and to keep all products of erosion from moving off site into receiving waters as required by the City's Development Conditions (Section 4.8.2). Additionally, the proposed project would be required to comply with guidance document for Order No. 01-182, which would regulate point sources that discharge pollutants into receiving waters. With the implementation of the City's Development Conditions (General Construction Permit Notice of Intent, and construction phase SWPPP), described above, construction impacts from development of the proposed project would be minimized through compliance with the Construction General Permit. Compliance with the Construction General Permit has been determined by the SWRCB to ensure that water quality standards (protection of beneficial uses and adherence to water quality objectives) are adequately protected during the construction period.

The Construction General Permit requires the development and implementation of a SWPPP, which must include erosion and sediment control BMPs that would meet or exceed measures required by the construction general permit, as well as BMPs that control other potential construction-related pollutants. A SWPPP would be developed as required by, and in compliance with, the Construction General Permit. Erosion control BMPs are designed to prevent erosion, whereas sediment controls are designed to trap sediment once it has been mobilized. The

Construction General Permit requires the SWPPP to include a menu of BMPs to be selected and implemented to address erosion and sediment control as well as control of other potential construction site materials. The BMPs are based on the phase of construction and the weather conditions. BMPs are expected to include, but are not limited to:

- Revegetation of landscaped areas;
- Hydro-seeding, mulching, or other erosion controls for inactive exposed areas;
- Sediment controls such as check dams, desilting basins, fiber rolls, and silt fencing;
- Catch basin inlet protection;
- Construction materials management; and
- Cover and containment of construction materials and wastes.

The SWPPP would address site-specific conditions related to project construction and would include construction BMPs required to ensure the construction runoff would not exceed the capacity of the storm drain facility. The SWPPP would identify the sources of sediment and other pollutants that may affect the quality of storm water discharges, and describe and ensure the implementation and maintenance of BMPs to reduce or eliminate sediment, pollutants adhering to sediment, and other nonsediment pollutants in storm water as well as nonstorm water discharges.

Implementation of BMPs consistent with Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology (BAT/BCT) is required by the Construction General Permit. Compliance with the General Construction Permit is required to ensure that water quality standards (protection of beneficial uses and adherence to water quality objectives) are adequately protected during the construction period.

Construction dewatering of the project site would be required because excavation would extend below the groundwater table. Discharges associated with the dewatering system would be transported into a storm drain. In addition, shallow groundwater was encountered at the site during the geotechnical investigation (Appendix C), and groundwater dewatering would be required during excavation activities and foundation installation. Dewatered groundwater may contain high levels of total dissolved solids or other contaminants that could be introduced to the storm drain system and surface waters. Any groundwater dewatering or construction-related nonstorm water discharges would be controlled in compliance with the Los Angeles Regional Water Quality Control Board's Waste Discharge Requirements for Discharges of Groundwater from Construction (HY-1). This permit requires permittees to conduct monitoring of dewatering discharges and adhere to effluent and receiving water limitations contained within the permit so that water quality of surface waters is ensured protection. Compliance with the dewatering permit would further assure that the impacts of these discharges are appropriately addressed.

Based upon the factors discussed above and adherence to City Development Conditions and Mitigation Measure HY-1, potential water quality impacts related to runoff during construction would be reduced to a less than significant level.

Operation. The proposed project would be required to develop a SUSMP to implement several Source Control and Treatment Control BMPs to reduce the discharge of pollutants to the maximum extent practical. As stated in the *Hydrogeology and Water Quality* report, Treatment Control BMPs would be incorporated into the design of the on-site storm drain system to treat project runoff in accordance with the SUSMP standards as required by City Development Conditions.

The *California Storm Water BMP Handbook—New Development and Redevelopment* (2003) lists the Site Design, Source Control and Treatment Control BMPs that should be reviewed for application to new development and redevelopment projects. Source Control BMPs applicable to the proposed project are provided in Table 4.8.F. Table 4.8.G shows Treatment Control BMPs applicable to the proposed project as well as those that would be considered during final design. Table 4.8.H shows the effectiveness of standard Treatment Control BMPs to remove pollutants of concern.

To comply with waste discharge requirements, the project SUSMP would target control of pollutants in runoff typically produced by that land use (e.g., bacteria and viruses; nutrients; trash; oil and grease; sediment, dissolved solids, hydrocarbons, and pesticides: Table 4.8.A). To comply with water quality standards and prevent further degradation of water quality, the project SUSMP would address pollutants that have impaired receiving waters for the proposed project, as applicable (i.e., cadmium, cyanide, and silver: Table 4.8.B).

As required by Chapter 15.56 of the WHMC, responsibility for maintenance of Treatment Control BMPs shall be passed on to succeeding owners of the project site. Implementation of Mitigation Measure HY-2, which lists this requirement, would prevent adverse water quality impacts related to BMP maintenance responsibility.

Compliance with City Development Conditions as well as Mitigation Measure HY-2 would reduce potential water quality impacts during operation of the proposed project to less than significant level.

Threshold 4.8.2: Would the proposed 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)?

Potentially Significant Impact.

Groundwater Supply. Depth to groundwater on the site ranges from approximately 7 to 20 feet bgs, with perched groundwater beneath the project site located approximately 30 feet bgs. Due to the high groundwater table, the project construction would entail installation and operation of a dewatering system during construction. Due to the relatively short duration of the construction, lowering of the perched groundwater table would be temporary. The subterranean levels of the proposed project would encounter the upper portion of the Older Alluvium water-bearing zone. To allow for construction, groundwater levels would need to be drawn down to 6 feet below the lowest floor

Table 4.8.F: Residential/Commercial Development Source Control BMPs

Identifier	Name	Project-Specific Application	If not Applicable, State Brief Reason
Source Control (Site Design)			
SD-10	Site Design and Landscape Planning	Landscape vegetation used would be drought-tolerant and would require minimal irrigation and fertilizer application.	
SD-11	Roof Runoff Controls	The objective is to reduce the total volume and rate of runoff from individual lots, and retain pollutants on site that may be picked up from roofing materials and atmospheric deposition. Roof runoff controls would consist of directing the roof runoff away from paved areas and mitigating flow to the storm drain system.	
SD-12	Efficient Irrigation	Irrigation systems would be fitted with soil moisture sensors or precipitation detectors and designed to eliminate overspray onto impervious surfaces.	
SD-13	Storm Drain System Signs	The area near drain inlets would be stenciled for public awareness to indicate release to surface waters.	
SD-20	Pervious Pavements	Applicable for parking areas with light vehicle loads.	Not applicable since parking is covered
SD-21	Alternative Building Materials	Roofing materials for the buildings would consist of built-up roofing or metal sheet roofing with a durable painted surface that resists degradation. This type of roofing material typically would not increase metals in roof runoff, as would roofing materials constructed of galvanized metal or copper.	
SD-30	Fueling Areas		No fueling areas
SD-31	Maintenance Bays and Docks	Loading docks would be designed to prevent run-on from outside the loading dock area and would be covered to prevent rainfall influence.	
SD-32	Trash Enclosures	Trash and recycling materials would be stored to prevent runoff from storage areas (e.g., construction of a roof and berm around trash containers), and pick-up would be appropriately scheduled.	
SD-33	Vehicle Washing Areas		No vehicle washing
SD-34	Outdoor Material Storage Areas	The method of storing outdoor storage of materials would be specified. Materials that could result in contaminated storm water runoff should not be stored outdoors. If suspect materials are stored outdoors, their removal and cleanup before storm events should be specified.	No outdoor material storage areas
SD-35	Outdoor Work Areas	Design areas to contain pollutants and collect and convey runoff to sanitary sewer system.	No outdoor work areas
SD-36	Outdoor Processing Areas		No outdoor processing
Source Control (Operational)			

Source: *California Storm Water BMP Handbook, Industrial and Commercial* (2003).
SD = Site Design
SC = Source Control

Table 4.8.G: Treatment Control BMPs Considered for the Project

Identifier	Name	Description	If not Applicable, State Brief Reason
TC-10	Infiltration Trench	Long, narrow, rock-filled trench with no outlet that receives storm water runoff. Runoff is stored in the void space between the stones and infiltrates through the bottom and into the soil matrix.	Underground building levels
TC-11	Infiltration Basin	Shallow impoundment that is designed to infiltrate storm water. Infiltration basins use the natural filtering ability of the soil to remove pollutants in storm water runoff. Infiltration facilities store runoff until it gradually exfiltrates through the soil and eventually into the water table.	Underground building levels
TC-12	Retention/Irrigation	Retention/irrigation refers to the capture of storm water runoff in a holding pond and subsequent use of the captured volume for irrigation of landscape of natural pervious areas.	Space constraints.
TC-20	Wet Pond	Wet ponds (a.k.a. storm water ponds, retention ponds, wet extended detention ponds) are constructed basins that have a permanent pool of water throughout the year (or at least throughout the wet season) and differ from constructed wetlands primarily in having a greater average depth. Ponds treat incoming storm water runoff by settling and biological uptake.	Space constraints
TC-21	Constructed Wetland	Constructed wetlands are constructed basins that have a permanent pool of water throughout the year (or at least throughout the wet season) and differ from wet ponds primarily in being shallower and having greater vegetation coverage.	Space constraints, underground building levels
TC-22	Extended Detention Basin	Dry extended detention ponds (a.k.a. dry ponds, extended detention basins, detention ponds, extended detention ponds) are basins whose outlets have been designed to detain the storm water runoff from a water quality design storm for some minimum time (e.g., 48 hours) to allow particles and associated pollutants to settle.	Space constraints
TC-30	Vegetated Swale	Vegetated swales are open, shallow channels with vegetation covering the side slopes and bottom that collect and slowly convey runoff flow to downstream discharge points. They are designed to treat runoff through filtering by the vegetation in the channel, filtering through a subsoil matrix, and/or infiltration into the underlying soils.	
TC-31	Vegetated Buffer Strip	Grassed buffer strips (vegetated filter strips, filter strips, and grassed filters) are vegetated surfaces that are designed to treat sheet flow from adjacent surfaces. Filter strips function by slowing runoff velocities and allowing sediment and other pollutants to settle and by providing some infiltration into underlying soils.	
TC-32	Bioretention	The bioretention best management practice (BMP) functions as a soil and plant-based filtration device that removes pollutants through a variety of physical, biological, and chemical treatment processes.	
TC-40	Media Filter	Storm water media filters are usually two-chambered including a pretreatment settling basin and a filter bed filled with sand or other absorptive filtering media.	
TC-50	Water Quality Inlet	Water quality inlets (WQIs), also commonly called trapping catch basins, oil/grit separators or oil/water separators, consist of one or more chambers that promote sedimentation of coarse materials and separation of free oil (as opposed to emulsified or dissolved oil) from storm water.	
TC-60	Multiple Systems	A multiple treatment system uses two or more BMPs in series.	
MP-50	Wet Vault	A wet vault is a vault with a permanent water pool, generally 3 to 5 ft deep. The vault may also have a constricted outlet that causes a temporary rise of the water level (i.e., extended detention) during each storm.	
MP-51	Vortex Separator	Vortex separators: (alternatively, swirl concentrators) are gravity separators, and in principle are essentially wet vaults.	
MP-52	Drain Insert	Drain inserts are manufactured filters or fabric placed in a drop inlet to remove sediment and debris.	

Source: *California Storm Water BMP Handbook—New Development and Redevelopment* (2003).
ft = feet
TC = Treatment Control

Table 4.8.H: Treatment Control BMPs Selection Matrix[1]

Pollutant of Concern	Treatment Control BMP Categories							
	Water Quality Inlets	**Drain Insert(2)**	**Biofilters**	**Detention Basins(3)**	**Infiltration Basins(4)**	**Wet Ponds or Wetlands**	**Filtration**	**Hydrodynamic Separator Systems(5)**
Sediment (commercial use)	L	V	H/M	M	H/M	H/M	H/M	H/M
Nutrients (commercial use and impairment)	L	V	L	M	H/M	H/M	LM	L
Organic Compounds (commercial use)	L	V	U	U	U	U	H/M	L
Trash (commercial use and impairment)	M	V	L	M	U	U	H/M	H/M
Oxygen-Demanding Substances (commercial use)	U	U	L	M	H/M	H/M	H/M	L
Bacteria and Viruses (commercial use and impairment)	L	V	U	U	H/M	U	H/M	L
Oil and Grease (commercial use)	M	V	H/M	M	U	U	H/M	L
Metals (commercial use and impairment)	L	V						
Pesticides (nonsoil bound)	U	U	U	U	U	U	U	L

(1) Cooperative periodic performance assessment may be necessary.
(2) Removal efficiency depends on type of product. Few products have performance data collected under field conditions.
(3) For detention basins with minimum 36- to 48-hour drawdown time.
(4) Including trenches and porous pavement.
(5) Also known as hydrodynamic devices and baffle boxes.

L: Low removal efficiency
H/M: High or medium removal efficiency
U: Unknown removal efficiency
V = Variable removal efficiency

Biofilters include:
• Grass swales
• Grass strips
• Wetland vegetation swales
• Bioretention

Detention Basins include:
• Extended/dry detention basins with grass lining
• Extended/dry detention basins with impervious lining

Wet Ponds and Wetlands include:
• Wet ponds (permanent pool)
• Constructed wetlands

Filtration Systems include:
• Media filtration
• Sand filtration

Infiltration Basins include:
• Infiltration basins
• Infiltration trenches

Hydrodynamic Separation Systems include:
• Swirl Concentrators
• Cyclone Separators

Sources: Orange County DAMP, Exhibit 7.II: Model Water Quality Management Plan; *California Storm Water BMP Handbook—New Development and Redevelopment* (2003).

elevation, at 179.5 feet above MSL. A target construction dewatering groundwater level of 160 feet above mean sea level was used to allow for a minimum 10-foot cone of depression around dewatering wells, and provide an appropriate factor of safety. Groundwater pumping would also induce physical changes to both the groundwater elevation and flow dynamics within the area. There would be a potential for groundwater dewatering to affect groundwater levels and soil characteristics at the project site and adjacent properties.

The MODFLOW-200 model was used to simulate changes to groundwater during dewatering in order to evaluate the impacts on groundwater flow during groundwater dewatering. Results of the modeling indicate that the maximum drawdown is anticipated to occur between five and ten days after the start of dewatering. The groundwater elevation during maximum drawdown is anticipated to be between 162 and 166 feet above MSL. In addition, the groundwater elevation is anticipated to return to the predewatering elevation of 205 ft above MSL between 4 and 8 days after groundwater dewatering steps. Therefore, the relatively quick return to pre-dewatering levels means that the drawdown would not have a long-term effect on any vegetation, including mature trees. The impact on off-site groundwater levels was also evaluated using the MODFLOW-200 model. Results of the modeling indicate that groundwater dewatering on the site would not impact groundwater levels or flow directions on a regional scale in the project vicinity of the project site or interfere with the ability of the City of Beverly Hills municipal supply wells to extract groundwater. Further, the route of the existing water system would not be impacted or altered due to the proposed project. A design-level geotechnical investigation and groundwater analysis would be required to establish procedures for dewatering implementation consistent with State and City geotechnical standards so that usable aquifers and surrounding soils and building foundations would not be adversely impacted. Review and approval of a design-level geotechnical investigation and groundwater analysis, as well as building foundation recommendations by the City Engineer, would ensure that impacts related to groundwater withdrawal during construction would not be significant. Therefore, implementation of Mitigation Measures GEO-1, GEO-2, and GEO-3 (Section 4.5, Geology and Soils) would reduce potentially significant adverse groundwater withdrawal impacts during construction to a less than significant level.

Groundwater withdrawal would not be required during operation of the proposed project (refer to Section 4.5, Geology and Soils).

Threshold 4.8.3: Would the proposed 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?

or

Threshold 4.8.4: Would the proposed 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 substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?

Less than Significant Impact

The proposed project would not significantly alter the amount of impervious surface coverage at the site because the proposed project would replace the existing building, pavement, and landscaping with new buildings, pavement, and landscaping. The project site would continue to drain from north-northwest to south-southeast following the natural slope of the project site and would discharge into the existing concrete-lined storm drain system within City streets. Because the proposed project would not substantially alter the drainage pattern of the project site, increase the rate or amount of surface runoff, or cause substantial erosion, impacts related to drainage and erosion would be less than significant, and no mitigation would be required.

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

Less than Significant Impact

As previously discussed under Threshold 4.8.3, project implementation would not alter the existing drainage pattern of the site or area. With project implementation, storm water runoff would exhibit similar volumes, rates, and patterns as current conditions. As part of project review and approval, the City would review and approve design-level storm drain plans to ensure that the drainage system will function as proposed. Therefore, the proposed project would not contribute to runoff that would exceed the capacity of existing or planned storm water drainage systems or result in substantial additional sources of polluted runoff, and no mitigation is required.

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

Potentially Significant Impact

Construction. The potential impacts of construction activities on water quality focus primarily on sediments, turbidity, and pollutants that might be associated with sediments (e.g., phosphorus and legacy pesticides). Construction-related activities that are primarily responsible for sediment releases are related to exposing soils to potential mobilization by rainfall/runoff and wind. Such activities include removal of vegetation and existing structures from the site, grading of the site, and construction of new buildings, the parking structure, and landscaped areas. Environmental factors that affect erosion include topographic, soil, and rainfall characteristics. Nonsediment-related pollutants that are also of concern during construction include waste construction materials, chemicals, liquid products, petroleum products used in building construction or the maintenance of heavy equipment, and concrete-related waste streams.

As previously discussed under Threshold 4.8.1, the proposed project would obtain a General Construction Permit that would require the development and implementation of a SWPPP. The SWPPP would reduce or prevent erosion and sediment transport and transport of other potential pollutants (e.g., construction material-related pollutants) from the project site during the construction phase through implementation of BMPs meeting BAT/BCT so as to prevent or minimize environmental impacts and to ensure that discharges during the construction phase of the proposed project would not cause or contribute to any exceedance of water quality standards in the receiving waters. In addition, the SWPPP would contain programs for inspections of BMPs (to ensure proper installation and functionality), maintenance of BMPs, training of construction personnel, reporting requirements (for any potential exceedances of water quality standards and any potential noncompliance with the Construction General Permit), and a sampling program for potential nonvisible pollutants in storm water flows. Inspections of the project site would be conducted in accordance with the SWPPP. Outside inspections of the project site would be conducted at the discretion of the City and the RWQCB under the authority of the Municipal Code and the Construction General Permit, respectively. In addition, implementation of Mitigation Measure HY-1 would reduce potential water quality impacts associated with runoff during project construction to a less than significant level.

Operation. The storm drainage improvements for the proposed project would include a series of catch basins and local area drains that would be constructed to pick up flows from the buildings and courtyard areas and would be conveyed to a series of pipes. The flows will be conveyed through storm drains and discharged via surface or subsurface conduits, ultimately discharging into Ballona Creek.

As discussed above under Threshold 4.8.1, the project SUSMP would ensure compliance with waste discharge requirements and would target control of pollutants in runoff typically produced by proposed land uses (e.g., bacteria and viruses; nutrients; trash; oil and grease; sediment, dissolved solids, hydrocarbons, and pesticides: see Table 4.8.A). To comply with water quality standards and prevent further degradation of water quality, the project SUSMP would address pollutants that have impaired receiving waters for the proposed project, as applicable (i.e., cadmium, cyanide, and silver: see Table 4.8.B). In addition, implementation of Mitigation Measure HY-2, requiring that the maintenance of Treatment Control BMPs shall be passed on to succeeding owners of the project site, would prevent adverse water quality impacts related to BMP maintenance responsibility. Therefore, compliance with City Development Conditions as well as Mitigation Measure HY-2 would reduce potential water quality impacts during operation of the proposed project to a less than significant level.

Threshold 4.8.7: Would the proposed project 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 delineation map?

No Impact

According to the General Plan Safety and Noise Element, no portions of the City lie within a 100-year flood hazard zone. Therefore, there would be no impacts associated with flooding because the proposed project would not place housing or structures within a 100-year flood zone, and no mitigation would be required.

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

No Impact

Refer to discussion under Threshold 4.8.6.

Threshold 4.8.9: Would the proposed 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 a dam?

Less Than Significant Impact

The *Report of Geotechnical Consultation, Proposed Melrose Triangle Mixed-Use Project* (MATEC Engineering and Consulting, Inc., April 27, 2010) states that, according to the County of Los Angeles General Plan Safety Element (1990), the site is located within a potential inundation area for an earthquake-induced dam failure or seiches from Lower Franklin Canyon Reservoir and Greystone Dam. However, the recently adopted West Hollywood General Plan (Safety and Noise Element 2011) indicates that the project site is not within any dam inundation hazard area, even though portions of the City are within such flooding hazard areas. Based on the more current information contained in the City's General Plan (2011), the project site is not considered to be located within an area subject to flooding as a result of the failure of a levee or dam. Additionally, as indicated in the *Report of Geotechnical Consultation, Proposed Melrose Triangle Mixed-Use Project,* these dams, as well as others in California, are continually monitored by various governmental agencies (such as the State of California Division of Safety of Dams and the United States Army Corps of Engineers) to guard against the threat of dam failure. Current design and construction practices, as well as ongoing programs of review, modification, or total reconstruction of existing dams, are intended to ensure that all dams are capable of withstanding the maximum credible earthquake (MCE) for the site.

Therefore, the proposed project would not expose people or structures to significant safety risks involving flooding as the result of the failure of a levee or dam, and no mitigation would be required.

Threshold 4.8.10: Would the proposed project cause inundation by seiche, tsunami, or mudflow?

No Impact

As stated previously, there are no surface water bodies in the project vicinity that could result in a tsunami, seiche, or mudflow. Therefore, inundation by seiche, tsunami, or mudflow is not a concern for the project site and no impacts related to these conditions would be expected to occur, and no mitigation would be required.

4.8.5 MITIGATION MEASURES

HY-1 Prior to dewatering activities during construction, the Applicant shall obtain coverage under 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. R4-2008-0032, National Pollutant Discharge Elimination System No. CAG994004) or subsequent permit. This shall include submission of a Notice of Intent for coverage under the permit to the Los Angeles Regional Water Quality Control Board at least 45 days prior to the start of dewatering preparation and preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP), subject to the review and approval of the City Engineer. The project applicant shall provide the Waste Discharge Identification Number to the City to demonstrate proof of coverage under the permit. The construction contractor shall comply with all applicable provisions in the permit, including water sampling, analysis, and reporting of dewatering-related discharges.

HY-2 Prior to issuance of a building permit, the Applicant shall submit a plan subject to review and approval by the City Engineer to ensure implementation and ongoing maintenance for permanent Best Management Practices (BMPs) consistent with Chapter 15.56 of the Municipal Code, which requires compliance with the storm water mitigation measures prescribed in the current version of the Standard Urban Storm Water Mitigation Plan (SUSMP) and the current Municipal National Pollutant Discharge Elimination System (NPDES) Permit approved by the Regional Water Quality Control Board – Los Angeles Region. This plan shall include a statement from the Applicant accepting responsibility for all Structural and Treatment Control BMP maintenance until the time the property is transferred. All future transfers of the property to a private or public owner shall have conditions requiring the recipient to assume responsibility for the maintenance of any Structural or Treatment Control BMPs. The condition of transfer shall include a provision requiring the property owner to conduct a maintenance inspection at least once a year and retain proof of inspection. In addition, educational materials indicating locations of storm water facilities and how maintenance can be performed shall accompany first deed transfers.

4.8.5 CUMULATIVE IMPACTS

Cumulative development in the Ballona Creek Watershed is a continuation of the existing urban pattern of development that has already resulted in extensive modifications to watercourses in the watershed. Many of the watershed's watercourses have been channelized, and drainage systems have been engineered to respond to the urbanization that has occurred in the Los Angeles area. For the cumulative analysis related to hydrology and water quality, the cumulative projects being considered include all potential projected development discharging to Ballona Creek. Because cumulative hydrology and water quality impacts are caused by build out of properties that increase impervious area and pollutant loads, cumulative development is considered to be the build out of the Ballona Creek Watershed over an extended time period, resulting in complete available parcel build out.

New development and redevelopment can result in increased urban pollutants in dry weather and storm water runoff from project sites. Each project must comply with NPDES permitting requirements and include BMPs to avoid impacts to water quality and local hydrology in compliance with local ordinances and plans adopted to comply with the MS4 Permit (SUSMP) and other permits (dewatering, Construction General Permit). Each project must consider impaired receiving waters and annual TMDL loads for receiving waters. The TMDL program is designed to identify all constituents that adversely affect the beneficial uses of waterbodies and then identify appropriate reductions in pollutant loads or concentrations from all sources so that the receiving waters can maintain/attain the beneficial uses in the Basin Plan. Thus, by complying with TMDLs, the project contribution to overall water quality improvement in the watershed in context of the regulatory program is designed to account for cumulative impacts. The proposed project entails a conversion of land use from commercial to mixed use. The proposed project would be required to implement Site Design, Source Control, and Treatment Control BMPs consistent with SUSMP requirements that would reduce pollutant concentrations when compared to the existing condition. Increases in storm flows with implementation of the proposed project are not anticipated because the project site is currently built out. Because the proposed project is required to implement BMPs that are not currently in place, a beneficial impact to hydrology and water quality is anticipated with implementation of the proposed project. Therefore, the proposed project's contribution to cumulative hydrology and water quality impacts would not be significant.

4.8.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of the mitigation measures and other regulatory requirements described above would reduce potential project-related hydrology and water quality impacts to less than significant levels.

This page intentionally left blank