INTRODUCTION

This section provides an overview of hydrology and water quality and evaluates the impacts associated with the Project. Topics addressed include water quality, groundwater, and drainage.

The following analysis is based on the following water resources conceptual report prepared for the Project:

- Vermont Corridor Development Project, Water Resources Conceptual Report, prepared by KPFF Consulting Engineers, October 25, 2017 (Draft EIR Appendix 4.8-1).

The report presents the description of the existing surface water hydrology, surface water quality, groundwater level, and groundwater quality at the Project Sites. In addition, the report analyzes the Project’s potential impacts related to surface water hydrology, surface water quality, groundwater level, and groundwater quality. The report is based on review of the Project and review of published groundwater information and hydrological data. Furthermore, the analysis in this section includes a description of the regulatory framework, thresholds for determining if the Project would result in significant impacts, mitigation measures (if determined applicable), and the level of significance after mitigation.

ENVIRONMENTAL SETTING

Existing Conditions

The Project Sites are located in the South Coast Hydrologic Region, which encompasses all coastal drainages flowing toward the Pacific Ocean between Rincon Point and the eastern County’s line, as well as the 5 islands adjacent to the coastline and 19 major rivers and watersheds. This drainage area totals 1,608 square miles. The major drainage systems within the Hydrologic Region are the Los Angeles River, San Gabriel River, Dominguez Channel, Santa Monica Bay and Ballona Creek Watersheds. The Project Sites are located within the Ballona Creek Watershed. Ballona Creek is a 9-mile long flood protection channel that drains the Los Angeles basin, from the Santa Monica Mountains to the north, the Harbor Freeway (“I-110/SR-110”) to the east, and Baldwin Hills to the south. The Ballona Creek Watershed totals approximately 130 square miles. The Watershed borders the Santa Monica Mountains, the Ventura-Los Angeles County line, and extends to downtown Los Angeles. The Watershed also extends to the south across the Los Angeles plain to include the area north of Baldwin Hills. The major tributaries to Ballona Creek include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous storm drains.

Groundwater

Groundwater use for domestic water supply is a beneficial use of groundwater basins in Los Angeles County. The central area of the City of Los Angeles, which includes the Project Sites, overlies the Los Angeles Coastal Plain Groundwater Basin. The Los Angeles Coastal Plain Basin is comprised of the Hollywood, Santa Monica, Central, and West Coast Subbasins. Groundwater flow in the Los Angeles Coastal Plain Groundwater Basin is generally south-southwesterly and may be restricted by natural geological features. Replenishment of groundwater basins occurs mainly by percolation of precipitation throughout the region via permeable surfaces, spreading grounds, and groundwater migration from
adjacent basins, as well as injection wells designed to pump fresh water along specific seawater barriers to prevent the intrusion of salt water.

Within the Los Angeles Coastal Plain Groundwater Basin, the Project Sites specifically overlie the Central Subbasin (also referred to as “the Central Basin”). The Project Sites are located toward the western portion of the Central Basin. The Central Basin is bounded on the north by a surface divide called the La Brea high, and on the northeast and east by emergent less permeable Tertiary rocks of the Elysian, Repetto, Merced and Puente Hills. The southeast boundary between the Central Basin and Orange County Groundwater Basin roughly follows Coyote Creek, which is a regional drainage province boundary. The southwest boundary is formed by the Newport Inglewood fault system and the associated folded rocks of the Newport Inglewood uplift.¹

Groundwater in the Central Basin is naturally replenished from surface inflow through Whittier Narrows. Perculation in the Los Angeles Forebay Area is restricted due to urbanization of the area. Imported and recycled water is also used for artificial recharge at the Rio Hondo and San Gabriel River spreading grounds. There are problems with saltwater intrusions in locations where river systems have eroded through the Newport Inglewood uplift. The Central Basin “Allowed Pumping Allocation” (“APA”) was set at 217,367 acre-feet-per-year (“AFY”).² Two LADWP facilities provide groundwater supplies in the Central Basin: the Manhattan Wells and the 99th Street Wells. The active Manhattan Wells were installed between 1928 and 1974, and have a production capacity of 16.9 cubic feet per second (“cfs”). Wells at the 99th Street location were installed between 1974 and 2002, and have a production capacity of 7.4 cfs.³

The Project Sites are developed with existing buildings and hardscape area with approximately 100 percent impervious surfaces. Due to the primarily impervious condition of the Sites, there is minimal groundwater recharge potential in the existing condition. A previous investigation conducted near the Site 1 encountered groundwater at depths between 28 and 30 feet below grade. According to the geotechnical assessments (attached to this Draft EIR as Appendices 4.5-1, 4.5-2, and 4.5-3) prepared for the Project, it is assumed that the current groundwater level at the Project Sites is similar to the water levels observed by the previous investigation.⁴,⁵,⁶ According to groundwater data provided in the Seismic Hazard Zone Report of the Hollywood 7 ½ - Minute Quadrangle, the historic-high groundwater level for

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the Project Sites was on the order of 20 feet below the ground surface (CDMG, 1998, Revised 2006).\textsuperscript{7} Fluctuation in the level of groundwater, including in the vicinity of the Project Sites would be expected to occur over time due to variations in rainfall, temperature, and other factors.

**Water Quality**

In general, urban stormwater runoff occurs following precipitation events with the volume of runoff flowing into the drainage system depends on the intensity and duration of the rain event. Contaminants that may be found in stormwater from developed areas include sediments, trash, bacteria, metals, nutrients, organics and pesticides. The source of contaminants includes surface areas where precipitation falls, as well as the air it falls through. Contaminants on surfaces such as roads, maintenance areas, parking lots, and buildings, which are usually contained in dry weather conditions, may be carried by rainfall runoff into drainage systems. The City has installed catch basins with screens to capture debris before entering the storm drain system, and conducts periodic cleaning and maintenance of the catch basins. In addition, the City conducts routine street cleaning operations to reduce stormwater pollution within the City.

As stated above, the Project Sites lie in the Ballona Creek Watershed. Constituents of concern listed for Ballona Creek under California’s CWA Section 303(d) List include Cadmium (sediment), Chlordane (Tissue & Sediment), Coliform Bacteria, Copper (Dissolved), Cyanide, DDT, Exotic Vegetation, Habitat Alterations, Hydromodification, Lead, PAHs, PCBs, Reduced Tidal Flushing, Selenium, Sediment Toxicity, Shellfish Harvesting Advisory, Silver, Toxicity, Trash, Viruses (Enteric), and Zinc.\textsuperscript{8} It appears the existing Project Sites currently do not implement structural BMPs and apparently have no means of treatment for stormwater runoff. Based on the existing operations within the Project Sites, the on-site runoff likely contains the following pollutants of concern: sediment, nutrients, pesticides, metals, pathogens, and oil and grease.\textsuperscript{9}

**Drainage**

Site 1 is currently developed with a 30,788-square foot, two-story office building and a surface parking lot to the north of this building, an unoccupied 13,325 square foot one-story office building, a surface parking lot located between the two office buildings, and a seven-story, 235,248 square foot parking structure. Site 2 is currently developed with a 154,793-square foot, 12-story County office building, an approximately 52,000 square foot, four-story office building, and a 14,010-square foot parking structure. Site 3 is currently developed with a 29,292-square foot, four-story office building and an at-grade parking lot at the rear and north of the existing building.

The existing Site 1 buildings along Vermont Avenue drain directly to the curb face. The existing surface parking lot sheet flows to the gutter in the street. Just north of Site 1 is a City-owned catch basin where stormwater is collected and piped to an 18-inch storm drain main along Vermont Avenue. The existing

\textsuperscript{7} California Department of Conservation, Division of Mines and Geology, Seismic Hazard Zone Report of the Hollywood 7½-Minute Quadrangle, Los Angeles County, California, C.D.M.G. Seismic Hazard Zone Report 026, map scale 1:24,000, 1998 (Revised 2006).


parking structure on Shatto Place collects stormwater from the roof and discharges to the curb face through multiple rectangular curb drains. Site 2 is located at the corner of 6th Street and Vermont Avenue. The existing structures for Site 2 discharge directly to the curb face along Vermont Avenue and 6th Street. Runoff from Site 2 sheet flows to the same catch basin as Site 1. Site 3 is located north of Site 1 and Site 2 on Vermont Avenue. The existing building discharges directly to the curb face. Runoff from the Site 3 sheet flows north to a catch basin near 4th Street.

Table 4.8-1 shows the stormwater runoff calculations for a 50-year storm event under existing conditions for the three Project Sites. The existing stormwater infrastructure located along Vermont Avenue and Shatto Place has sufficient capacity to accept the stormwater runoff demands from the existing conditions at the Project Sites.\(^{10}\) Once within the underground pipe networks, stormwater eventually drains into Ballona Creek. Ballona Creek flows generally southwest, ultimately discharging into the Pacific Ocean at the Santa Monica Bay. Ballona Creek is designed to discharge to Santa Monica Bay approximately 71,400 cubic feet per second from a 50-year frequency storm event.

### Table 4.8-1
Existing Drainage Stormwater Runoff Calculations

<table>
<thead>
<tr>
<th>Drainage Area</th>
<th>Area (in Acres)</th>
<th>Q50 (cfs) (volumetric flow rate measured in cubic feet per second)</th>
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</thead>
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<tr>
<td>Site 1 – Vermont Avenue</td>
<td>1.737</td>
<td>5.41</td>
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<tr>
<td>Site 1 – Shatto Place</td>
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<td>2.48</td>
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<tr>
<td>Site 2</td>
<td>.994</td>
<td>3.10</td>
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<tr>
<td>Site 3</td>
<td>.498</td>
<td>1.55</td>
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</tbody>
</table>


Regulatory Framework

**Federal**

*Federal Water Pollution Control Act (Clean Water Act)*

The Clean Water Act ("CWA") was first introduced in 1948 as the Water Pollution Control Act. The CWA authorizes Federal, state, and local entities to cooperatively create comprehensive programs for eliminating or reducing the pollution of state waters and tributaries. The primary goals of the CWA are to restore and maintain the chemical, physical, and biological integrity of the nation’s waters and to make all surface waters fishable and swimmable. As such, the CWA forms the basic national framework for the management of water quality and the control of pollutant discharges. The CWA also sets forth a number of objectives in order to achieve the abovementioned goals. These objectives include regulating pollutant and toxic pollutant discharges; providing for water quality that protects and fosters the propagation of fish, shellfish and wildlife; developing waste treatment management plans; and developing and implementing programs for the control of non-point sources of pollution.\(^{11}\)

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\(^{10}\) Ibid., page 4.

\(^{11}\) Non-point sources of pollution are carried through the environment via elements such as wind, rain, or stormwater and are generated by diffuse land use activities (such as runoff from streets and sidewalks or agricultural activities) rather than from an identifiable or discrete facility.

In response to the 1987 amendments to the CWA and as part of Phase I of its NPDES permit program, the USEPA began requiring NPDES permits for: (1) municipal separate storm sewer systems (“MS4”) generally serving, or located in, incorporated cities with 100,000 or more people (referred to as municipal permits); (2) 11 specific categories of industrial activity (including landfills); and (3) construction activity that disturbs five acres or more of land. Phase II of the USEPA’s NPDES permit program, which went into effect in early 2003, extended the requirements for NPDES permits to: (1) numerous small municipal separate storm sewer systems,\(^\text{12}\) (2) construction sites of one to five acres, and (3) industrial facilities owned or operated by small municipal separate storm sewer systems. The NPDES permit program is typically administered by individual authorized states. In California, the NPDES stormwater permitting program is administered by the State Water Resources Control Board (SWRCB), which is discussed in greater detail below.

**Federal Anti-Degradation Policy**

The Federal Anti-degradation Policy (40 Code of Federal Regulations 131.12) requires states to develop statewide anti-degradation policies and identify methods for implementing them. Pursuant to the Code of Federal Regulations (“CFR”), state anti-degradation policies and implementation methods shall, at a minimum, protect and maintain (1) existing in-stream water uses; (2) existing water quality, where the quality of the waters exceeds levels necessary to support existing beneficial uses, unless the state finds that allowing lower water quality is necessary to accommodate economic and social development in the area; and (3) water quality in waters considered an outstanding national resource.

**Safe Drinking Water Act (SDWA)**

The Federal Safe Drinking Act, established in 1974, sets drinking water standards throughout the country and is administered by the USEPA. The drinking water standards established in the SDWA, as set forth in the CFR, are referred to as the National Primary Drinking Water Regulations (Primary Standards, Title 40, CFR Part 141) and the National Secondary Drinking Water Regulations (Second Standards, 40 CFR Part 143). California passed its own Safe Drinking Water Act in 1986 that authorizes the State’s Department of Health Services (“DHS”) to protect the public from contaminants in drinking water by establishing maximum contaminants levels (“MCLs”), as set forth in the CCR, Title 22, Division 4, Chapter 15, that are at least as stringent as those developed by the USEPA, as required by the federal Safe Drinking Water Act.

\(^{12}\) A small municipal separate storm sewer system (“MS4”) is any MS4 not already covered by the Phase I program as a medium or large MS4. The Phase II Rule automatically covers on a nationwide basis all small MS4s located in “urbanized areas” as defined by the Bureau of the Census (unless waived by the NPDES permitting authority), and on a case-by-case basis those small MS4s located outside of urbanized areas that the NPDES permitting authority designates.
State

Porter-Cologne Water Quality Control Act and State Water Resource Control Board

The Porter-Cologne Water Quality Control Act of 1969 established the SWRCB as the principal State agency for coordinating and controlling water quality in California. Specifically, the Porter-Cologne Water Quality Control Act authorizes the SWRCB to adopt, review, and revise policies for all waters of the State (including both surface and groundwaters). Section 13170 of the California Water Code also authorizes the SWRCB to adopt water quality control plans on its own initiative. The SWRCB sets statewide policies and regulations for the implementation of water quality control programs mandated by federal and State water quality statutes and regulations. The SWRCB delegates to the 9 Regional Water Quality Control Boards (“RWQCBs”) the responsibility for the protection of water quality in each major drainage basin throughout the State. The RWQCBs develop and enforce water quality objectives and implement plans that will best protect California’s waters, acknowledging areas of different climate, topography, geology, and hydrology. The RWQCBs develop “basin plans” for their hydrologic areas, issue waste discharge requirements, enforce action against stormwater discharge violators, and monitor water quality. The Los Angeles Regional Water Quality Control Board (“LARWQCB”) has jurisdiction over the coastal drainages between Rincon Point (on the coast of western Ventura County) and the eastern Los Angeles County line, which includes the Project Sites. The LARWCQB’s Basin Plan is discussed in greater detail below.

NPDES General Construction Activity Stormwater Permit

As discussed above, the USEPA has delegated responsibility for implementation of portions of the CWA, including water quality control planning and control programs, such as the NPDES permit program, to the SWRCB. The SWRCB has elected to adopt one statewide general permit for construction activity at this time. The General Construction Activities Stormwater Permit (“GCASP”) (known as the “General Permit”) applies to stormwater discharges associated with construction activity. The main objectives of the General Permit are to:

1. Reduce erosion;
2. Minimize or eliminate sediment in stormwater discharges;
3. Prevent materials used at a construction site from contacting stormwater;
4. Implement a sampling and analysis program;
5. Eliminate unauthorized non-stormwater discharges from construction sites;
6. Implement appropriate measures to reduce potential impacts on waterways both during and after construction of projects; and
7. Establish maintenance commitments on post-construction pollution control measures.

Currently, the GCASP requires all dischargers where construction activity disturbs one acre or more to conduct the following:

- Develop and implement a Stormwater Pollution Prevention Plan (“SWPPP”), which specifies BMPs that will prevent all construction pollutants from contacting stormwater and with the intent of keeping all products of erosion from moving off-site into receiving waters;

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• Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the United States; and
• Perform inspections of all BMPs.

The SWPPP has two major objectives: (1) to help identify the sources of sediment and other pollutants that affect the quality of stormwater discharges and (2) to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges. The SWPPP must include BMPs that address source control and, if necessary, must also include BMPs that address specific pollutant control. The SWPPP includes a description of (1) the site, (2) erosion and sediment controls, (3) means of waste disposal, (4) implementation of approved local plans, (5) control of post-construction sediment and erosion control measures and maintenance responsibilities, and (6) non-stormwater management controls. Dischargers are also required to inspect their construction sites before and after storms to identify stormwater discharge associated with construction activity and to identify and implement controls where necessary.

**Total Maximum Daily Loads (TMDLs)**

Section 303(d) of the CWA requires that states make a list of waters that are not attaining standards after the technology-based limits are put in place. For waters on this list (and where the USEPA administrator deems they are appropriate), the states are to develop TMDLs, which are calculations of the maximum amount of a pollutant that a water body can have and still meet applicable water quality standards. A TMDL must account for all sources of pollutants that cause the water to be listed. Federal regulations require that TMDLs, at a minimum, account for contributions from point sources and nonpoint sources. Pursuant to this requirement, the SWRCB has adopted a list of impaired water bodies (the 303(d) list) for the State of California identifying water quality impairments including trash, metals, pathogens, and organic pesticides. The list was most recently updated in 2012 and adopted in 2015.14 Ballona Creek is among the SWRCB listed impaired waterways with TMDLs established for cadmium, chlordane, copper, lead, Polychlorinated Biphenyls, silver, zinc, and trash from point and nonpoint sources.15

**California Anti-Degradation Policy**

The California Anti-degradation Policy, otherwise known as the Statement of Policy with Respect to Maintaining High Quality Water in California was adopted by the SWRCB (State Board Resolution No. 68-16) in 1968. Unlike the Federal Anti-degradation Policy, the California Anti-degradation Policy applies to all waters of the State, not just surface waters. The policy states that whenever the existing quality of a water body is better than the quality established in individual Basin Plans, such high quality shall be maintained and discharges to that water body shall not unreasonably affect present or anticipated beneficial use of such water resource.

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**California Toxic Rule**

In 2000, the EPA promulgated the California Toxic Rule, which establishes water quality criteria for certain toxic substances to be applied to waters in the State. The EPA promulgated this rule based on the EPA's determination that the numeric criteria are necessary in the State to protect human health and the environment. The California Toxic Rule establishes acute (i.e., short-term) and chronic (i.e., long-term) standards for bodies of water such as inland surface waters and enclosed bays and estuaries that are designated by the LA RWQCB as having beneficial uses protective of aquatic life or human health.

**California Water Plan**

The California Water Plan The Plan provides a framework for water managers, legislators, and the public to consider options and make decisions regarding California’s water future. The Plan, which is updated every five years, presents basic data and information on California’s water resources including water supply evaluations and assessments of agricultural, urban, and environmental water uses to quantify the gap between water supplies and uses. The Plan also identifies and evaluates existing and proposed statewide demand management and water supply augmentation programs and projects to address the State’s water needs. The goal for the California Water Plan Update is to meet Water Code requirements, receive broad support among those participating in California’s water planning, and be a useful document for the public, water planners throughout the state, legislators and other decision-makers.

**Regional**

**LARWQCB and the Water Quality Management Plan for the Los Angeles Region**

The Project Sites are within the jurisdiction of the LARWQCB. The LARWQCB provides permits that affect surface waters and groundwater. As required by the CWA, the LARWQCB adopted the Water Quality Management Plan for the Los Angeles Region (“Basin Plan”) on June 13, 1994. Specifically, the Basin Plan designates beneficial uses for surface and groundwaters, sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the State's anti-degradation policy, and describes implementation programs to protect all waters in the Los Angeles Region. In addition, the Basin Plan incorporates (by reference) all applicable State and Regional Board plans and policies and other pertinent water quality policies and regulations. Those of other agencies are referenced in appropriate sections throughout the Basin Plan.16

The California Water Code defines water quality objectives as “the allowable limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.” The Basin Plan’s water quality objectives are intended to: (1) protect the public health and welfare, and (2) maintain or enhance water quality in relation to the designated existing and potential uses of the water. Under Section 303(d) of the CWA, the LARWQCB is also responsible for protecting surface waters and groundwater from both point and non-point sources of pollution within the project area and for establishing water quality standards and objectives in its Basin Plan that protect the beneficial uses of various waters.

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As described above, USEPA regulations require that MS4 permittees implement a program to monitor and control pollutants being discharged to the municipal system from both industrial and commercial projects that contribute a substantial pollutant load to the MS4. On November 8, 2012, the LARWQCB adopted Order No. R4-2012-0175 under the CWA and the Porter-Cologne Act. This Order is the NPDES Permit or MS4 permit for municipal stormwater and urban runoff discharges within Los Angeles County. The requirements of this Order cover 84 cities and most of the unincorporated areas of Los Angeles County. Development in the project area is subject to the waste discharge requirements issued by the LARWQCB for the MS4 Permit. The Permittees are the 84 Los Angeles County cities (including the City of Los Angeles), Los Angeles County, and the Los Angeles County Flood Control District. Both the City and County of Los Angeles, therefore, have joint/concurrent legal authority to enforce the terms of the permit within its jurisdiction.

The MS4 Permit is intended to ensure that combinations of site planning, source control and treatment control practices are implemented to protect the quality of receiving waters. To do so, the permit requires that new development employ BMPs designed to control pollutants in stormwater runoff to the MEP, details specific sizing criteria for BMPs, and specifies flow control requirements. These BMPs include structural practices, source control and treatment techniques and systems, and site design planning principles addressing water quality. Site design or planning management BMPs are used to minimize runoff from new development and to discourage development in environmentally sensitive areas that are critical to maintaining water quality. Source control BMPs are usually the most effective and economical in preventing pollutants from entering storm and non-storm runoff. Treatment control BMPs involve physical treatment of the runoff, usually through structural means. These are also referred to as structural BMPs.

Stormwater Quality Management Program

In compliance with the Los Angeles County MS4 Permit, the Co-Permittees are required to implement a stormwater quality management program ("SQMP") with the goal of accomplishing the requirements of the Permit and reducing the amount of pollutants in stormwater runoff. Among other things, the MS4 Permit requires the co-permittees to prepare a SQMP specifying the BMPs that will be implemented to reduce the discharge of pollutants in stormwater to the MEP. The emphasis of the SQMP is pollution prevention through education, public outreach, planning, and implementation of source control BMPs first, followed by structural and treatment control BMPs.

County of Los Angeles Hydrology Manual

Per the City of Los Angeles (“City”)’s Special Order No. 007-1299, December 3, 1999, the City has adopted the Los Angeles County (“County”) Department of Public Works Hydrology Manual as its basis of design for storm drainage facilities. The Hydrology Manual requires that a storm drain conveyance system be designed for a 25-year storm event and that the combined capacity of a storm drain and street flow system accommodate flow from a 50-year storm event. Areas with sump conditions are required to have a storm
drain conveyance system capable of conveying flow from a 50-year storm event. The County also limits the allowable discharge ("Q") for direct connections to Flood Control facilities. The determination of the allowable Q is based on the infrastructure capacity directly impacted by the service area. Any proposed drainage improvements of County-owned storm drain facilities such as catch basins and storm drain lines requires the approval/review from the County Flood Control District department.

**Los Angeles County’s Low Impact Development (“LID”) Ordinance**

On November 18, 2013, the Board adopted the LID Ordinance. Chapter 12.84 of the County Code requires the use of LID principles in development projects. LID encourages site sustainability and smart growth in a manner that respects and preserves the characteristics of the County’s watersheds, drainage paths, water supplies and natural resources. LID builds on conventional design strategies by using every softscape and hardscape surface in the development to perform a beneficial hydrologic function by retaining, detaining, storing, changing the timing of, or filtering stormwater and urban runoff. LID encompasses the use of structural devices, engineered systems, vegetated natural designs, and education in order to distribute stormwater and urban runoff across a development site. Over the past decade, LID has emerged along with technologies and practices that allow a sustainable stormwater management strategy to control stormwater and urban runoff at the source rather than centralized, end-of-pipe controls, LID relies on an integrated system of decentralized, small-scale control measures. These measures range from site design practices to technology driven LID BMPs. The underlying principle of LID is that undeveloped land does not present a stormwater runoff or pollution problem. The evolved natural hydrology of any given site manages water in the most efficient manner. This most often translates to high rates of infiltration, vegetative interception, and evapotranspiration. LID attempts to offset the effects of development and changes in land cover by preserving or restoring predevelopment hydrology and water quality through a series of small-scale, decentralized, natural, and engineered controls at or near the point where the stormwater is generated. It is a source control option that minimizes stormwater pollution by recognizing the greatest efficiencies are gained by minimizing stormwater generation. This is a process that begins with functional conservation of watershed resources, reducing impacts of development, and then using innovative management practices to meet the stormwater objective. Site preservation practices coupled with small-scale BMPs that rely on the environmental services of vegetation and soils or systems that mimic these services comprise the control approach of LID. These practices, taken in aggregate, limit the observed hydromodification on a developed site and present a more comprehensive and beneficial control approach. To appropriately implement LID, it is important to assess its role in water quality protection. LID is one part of a toolkit that can be used to better manage natural resources and limit the pollution delivered to waterways. It is not independent of watershed planning. To gain optimal benefits, LID must be integrated with appropriate land use programs. LID, by itself, will not deliver the water quality outcomes desired; yet, it provides enhanced stormwater treatment and mitigates excess volume and flow rates. However, if not integrated in a comprehensive fashion, LID techniques can end up as a series of uncoordinated innovative BMPs that have limited water quality benefits. The following site design elements are used to frame the LID approach to stormwater and are addressed through a combination of BMPs:

- Conserve natural areas, soils, and vegetation—Protect areas outside grading limits, incorporate plants to suit soil and drainage conditions, incorporate planting schemes that replicate natural sites, and use vegetative plantings and bioremediation techniques to neutralize soil contaminants.

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• Minimize disturbances to natural drainage patterns—Minimize manicured lawns and annual beds as the dominant site elements.
• Minimize and disconnect impervious surfaces—Reduce impervious areas by including landscaping and using pervious pavements where practicable. Reduce the amounts of “hydraulically” connected impervious areas by using downspouts directed toward vegetated areas and installing rain barrels and cisterns below downspouts. Direct runoff from impervious areas to pervious areas. Grade surfaces toward open space with infiltration capacity, and infiltrate runoff a suitable distance from foundations.
• Minimize soil compaction—Restrict compaction and grading to areas that will support structures, as compacted soils suffer from reduced infiltration rates and limit root growth and plant survivability.

The County’s LID Ordinance became effective December 5, 2013, and requires that all Designated, Non-Designated, street and road construction, and single family hillside home projects comply. Designated Projects are identified as meeting one or more of the following:

• All development projects equal to one acre or greater of disturbed area and adding more than 10,000 square feet of impervious surface area;
• Industrial parks with 10,000 square feet or more of surface area;
• Commercial malls with 10,000 square feet or more of surface area;
• Retail gasoline outlets with 5,000 square feet or more of surface area;
• Restaurants (Standard Industrial Classification [“SIC”] Code 5812) with 5,000 square feet or more of surface area;
• Parking lots with 5,000 square feet or more of impervious surface area, or with 25 or more parking spaces;
• Automotive service facilities (SIC Codes: 5013, 5014, 5511, 5541, 7532-7534, or 7536-7539) with 5,000 square feet or more of surface area;
• Projects located in or directly adjacent to, or discharging directly to a Significant Ecological Area (“SEA”), where the development will:
  o Discharge stormwater runoff that is likely to impact a sensitive biological species or habitat; and
  o Create 2,500 square feet or more of impervious surface area.
• Redevelopment projects, which are developments that result in creation or addition or replacement of either: (1) 5,000 square feet or more of impervious surface on a site that was previously developed as described in the above bullets (both Sites 1 and 3 fall under this criteria); or (2) 10,000 square feet or more of impervious surface area on a site that was previously developed as a single family home.

Non-Designated Projects fall into the following categories:

• Small-Scale Non-Designated Residential Projects – residential development and redevelopment of four units or less; and
• Large-Scale Non-Designated Projects – all residential development and redevelopment of five units or greater and all non-residential development or redevelopment.

Site 1 (office) and Site 3 (residential greater than 5 units) would be identified as Designated Projects, and, as such, would be subject to the provisions of the County LID ordinance.
County of Los Angeles LID Standards Manual

The County prepared the LID Standards Manual in February 2014 to comply with the requirements of the NPDES MS4 Permit for stormwater and non-stormwater discharges from the MS4 within coastal watersheds of the County (CAS004001, Order No. R4-2012-0175). The LID Standards Manual provides guidance for the implementation of stormwater quality control measures in new development and redevelopment projects in unincorporated areas of the County with the intention of improving water quality and mitigating potential water quality impacts from stormwater and non-stormwater discharges. Moreover, the LID Standards Manual was prepared to complement and be consistent with the County’s 2013 LID Ordinance requirements. Ultimately, a project applicant has to submit a comprehensive LID Plan and analysis demonstrating compliance with the LID Standards Manual (which also constitutes compliance with the 2013 LID Ordinance) for review and approved by the Director of Public Works. The LID Standards Manual addresses the following objectives and goals:

- Lessen the adverse impacts of stormwater runoff from development and urban runoff on natural drainage systems, receiving waters, and other water bodies;
- Minimize pollutant loadings from impervious surfaces by requiring development projects to incorporate properly-designed, technically-appropriate Best Management Practices (“BMPs”) and other Low Impact Development (“LID”) strategies; and
- Minimize erosion and other hydrologic impacts on natural drainage systems by requiring development projects to incorporate properly-designed, technically-appropriate hydromodification control development principles and technologies.

City of Los Angeles

City of Los Angeles LID Ordinance

The City’s LID Ordinance became effective in May 2012. The main purpose of this law is to ensure that development and redevelopment projects mitigate runoff in a manner that captures rainwater at its source, while utilizing natural resources. Project applicants are required to prepare and implement a stormwater mitigation plan when their projects fall into any of these categories:

- Single-family hillside residential developments
- Housing developments of 10 or more dwelling units (including single family tract developments)
- Industrial /Commercial developments with one acre or more of impervious surface area
- Automotive service facilities
- Retail gasoline outlets
- Restaurants
- Parking lots of 5,000 square feet or more of surface area or with 25 or more parking spaces
- Projects with 2,500 square feet or more of impervious area that are located in, adjacent to, or draining directly to designated Environmentally Sensitive Areas (“ESA”)

Any project that cannot comply with the LID Ordinance requirements is required to comply with, at a minimum, all applicable City Standard Urban Stormwater Mitigation Plan (“SUSMP”) requirements in order to maximize on-site compliance. This ordinance expands the applicability of the existing City SUSMP requirements by imposing rainwater LID strategies on projects that require building permits from the City.
Since Site 2 would be the only site of the three to require building permits from the City, this ordinance would be applicable only to Site 2 of the Project.

ENVIRONMENTAL IMPACTS

Methodology

The analysis was prepared based on a review of documents from and methodologies specified by the County’s Department of Public Works, including the Los Angeles County LID Standards Manual (February 2014) for Sites 1 and 3, and the City of Los Angeles LID Ordinance and Manual for Site 2, for use in developing BMPs for the Project. Additionally, both the County and the City utilize the County Hydrology Manual as the basis of design for storm drainage facilities. The Hydrology Manual requires drainage facilities to meet the Urban Flood level of protection. The Urban Flood is defined as stormwater runoff from a 25-year frequency design storm falling on a saturated watershed; however, the City’s CEQA Threshold Guide establishes the 50-year frequency design storm event as the threshold to analyze potential impacts on surface water hydrology due to development. Therefore, the 50-year frequency design storm event was used in this analysis.

The analysis of water quality impacts identifies the types of pollutants potentially associated with construction and operation of the Project and considers their effects on water quality. Consideration is given to BMPs, which would serve to minimize pollutants in stormwater runoff. Further, the Project’s consistency with relevant regulatory permits/requirements and applicable screening criteria for pollutants was evaluated to demonstrate how compliance would protect water quality.

Thresholds of Significance

The potential for the Project to result in impacts associated with hydrology and water quality is based on Appendix G of the State CEQA Guidelines, which are addressed in this section. These significance thresholds are listed below.

Threshold 4.8-1: Would the project 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 table level (e.g., the production rate of pre-existing nearby wells would drop to a level which 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 stormwater 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, or within a floodway or floodplain?

Threshold 4.8-8: Place structures, which would impede or redirect flood flows, within a 100-year flood hazard area, floodway, or floodplain?

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?

Threshold 4.8-10: Place structures in areas subject to inundation by seiche, tsunami, or mudflow?

An affirmative answer to any of these questions would represent a significant impact. Thresholds 4.8-7, 4.8-8, and 4.8-10 have been determined to have no impact or a less-than-significant impact as set forth in Section 6.5, Effects Found Not to be Significant. Threshold 4.8-7 addresses placement of housing in a 100-year flood hazard area; Threshold 4.8-8 addresses placement of a structures that would impede or redirect flood flows; and Threshold 4.8-10 addresses placement of structures in areas subject to inundation by seiche, tsunami, or mudflow. The Project would not place structures in any of the above situations.

**Project Design Elements**

The Project would involve the disturbance of more than one acre and, as such, would comply with NPDES and County requirements. Sites 1 and 3 of the Project would be required to be designed to comply with the County’s LID Ordinance and LID Standards Manual. The LID strategies require special design features that allow infiltration of stormwater on-site to reduce water pollution and recharge local water supplies. Site 2 of the Project would be required to comply with the City’s LID Ordinance since development on this Site would require building permits from the City.

**Impact Analysis**

Threshold 4.8-1: Would the project violate any water quality standards or waste discharge requirements?

Threshold 4.8-6: Otherwise substantially degrade water quality?

**Construction**

**Surface Water**

Construction of the Project would include grading and other earth moving activities that would expose on-site soils to erosion processes. Such activities could lead to an increase in suspended solids and pollutant loading from site runoff, as unprotected disturbed soil is susceptible to high rates of erosion from wind and rain, as well as from such activities as hosing down of construction sites. Construction
activities also have the potential to generate short-term water pollutants, including sediment, trash, construction materials, and equipment fluids. However, construction contractors disturbing greater than one acre of soil are required to obtain coverage under the NPDES Construction General Permit. In accordance with the requirements of the General Permit, the Developer would prepare and implement a site-specific SWPPP for each Project Site that adheres to the California Stormwater Quality Association BMP Handbook. The SWPPP would specify BMPs to be used during construction, which would include but not be limited to: erosion control, sediment control, non-stormwater management, and materials management BMPs. In addition, the Project would be required to comply with the County grading permit regulations on Sites 1 and 3, and City grading regulations on Site 2. These require necessary measures, plans (including a wet weather erosion control plan if construction occurs during the rainy season), and inspections to reduce sedimentation and erosion.

In addition to construction-related earth-moving activities, the Project would require dewatering during construction. Dewatering operations are practices that discharge non-stormwater, such as groundwater, that must be removed from a work location to proceed with construction, into the drainage system. Discharges from dewatering operations can contain high levels of fine sediments, which if not properly treated, could lead to exceedance of the NPDES requirements.

**Sites 1 and 2**

Excavation on Sites 1 and 2 would extend to approximately 20 feet below the ground surface. Due to the presence of the abandoned oil wells on Sites 1 and 2 (discussed in greater detail in Section 4.7, Hazards and Hazardous Materials), contaminated groundwater may be encountered when performing basement and foundation excavations. However, the temporary dewatering system would comply with all relevant NPDES requirements related to construction and discharges from dewatering operations. These requirements include demonstration that the discharges would not cause or contribute to a violation of any applicable water quality objective/criteria for the receiving waters or exceed the effluent limitations or discharge specifications, and require that the Project perform analysis of a representative sample of groundwater to be discharged. The sample would be analyzed and compared to applicable water quality screening criteria for the constituents and, if necessary, the discharge would pass through a treatment system designed and operated to reduce the concentration of contaminants to meet the effluent limitations prior to discharge into surface waters.

With implementation of site-specific BMPs included as part of the SWPPP and adherence to NPDES discharge requirements, the Project would not significantly increase pollutants in the stormwater runoff. Therefore, construction of the Project would not result in discharge that would violate any water quality standard or waste discharge requirements, or otherwise substantially degrade water quality. Furthermore, construction of the Project would not result in discharges that would cause regulatory standards to be violated in Ballona Creek. Conformance with applicable NPDES requirements, as identified in Regulatory Requirements RR-HWQ-1 through RR-HWQ-8, which identify BMPs for the treatment of stormwater runoff and maintenance of water quality, would provide adequate surface water

18 KPFF Consulting Engineers, op.cit., pages 31 and 32.
19 Ibid., page 22.
20 Ibid.
quality protection. Therefore, temporary construction-related impacts on surface water quality would be less than significant.

**Site 3**

Excavation on Site 3 extend to approximately 30 feet below the ground surface.\(^1\) With implementation of site-specific BMPs included as part of the SWPPP and adherence to NPDES discharge requirements, the Project would reduce or eliminate the discharge of potential pollutants from the stormwater runoff.\(^2\) Therefore, construction of the Project would not result in discharge that would violate any water quality standard or waste discharge requirements, or otherwise substantially degrade water quality. Furthermore, construction of the Project would not result in discharges that would cause regulatory standards to be violated in Ballona Creek.\(^3\) \(^4\) Conformance with applicable LID requirements, as identified in Regulatory Requirements RR-HWQ-2, would provide adequate surface water quality protection. Therefore, temporary construction-related impacts on surface water quality would be less than significant.

**Groundwater**

During on-site grading and building construction, hazardous materials, such as fuels, paints, solvents, and concrete additives, could be used and would therefore require proper management and, in some cases, disposal. The management of any resultant hazardous wastes could increase the opportunity for hazardous materials releases into groundwater. Compliance with all applicable federal, state, and local requirements concerning the handling, storage and disposal of hazardous waste, would reduce the potential for the construction of the Project to release contaminants into groundwater that could affect existing contaminants, expand the area or increase the level of groundwater contamination, or cause a violation of regulatory water quality standards at an existing production well. In addition, because there are no groundwater production wells or public water supply wells within one mile of the Project Sites, construction activities would not affect existing wells. Additionally, the Project would not result in releases or spills of contaminants that could reach a groundwater recharge area or spreading ground or otherwise reach groundwater through percolation.\(^5\)

As discussed above, water encountered in the vicinity of the oil wells could be petroleum-impacted. However, the Project would not alter these existing conditions beyond removal of groundwater through dewatering activities in compliance with NPDES discharge requirements, and no additional pollutants would be introduced. Temporary pumps and filtration would be utilized in compliance with the NPDES permit. The temporary system would comply with all relevant NPDES requirements related to construction and discharges from dewatering operations. Provided adherence to the appropriate RR-HWQ-1 through RR-HWQ-8 compliance and containment measures which identify BMPs for the treatment of stormwater runoff and maintenance of water quality, the Project would result in less than significant impacts related to groundwater quality.\(^6\)

\(^{21}\) Ibid., page 32, 
\(^{22}\) Ibid., page 22. 
\(^{23}\) Ibid. 
\(^{24}\) Ibid. 
\(^{25}\) Ibid., page 30. 
\(^{26}\) Ibid.
Operation

Surface Water

Site 1

The Project would slightly decrease the overall percentage of impervious surfaces. The existing Site 1 has approximately 100 percent impervious surface areas, which includes buildings and hardscape surfaces. Existing stormwater discharges from Site 1 without treatment or detention. The Project would develop buildings across Site 1, and it is anticipated that the new overall impervious area of Site 1 would be reduced to approximately 95 percent. This reduction is due to the addition of landscape areas. For the purposes of this analysis, runoff from Project irrigation is assumed to be negligible. Development of Site 1 would not increase concentrations of the items listed as constituents of concern for the Ballona Creek Watershed because it would implement BMPs for managing stormwater runoff in accordance with the current County LID Standards Manual. The LID requirements for Site 1 would outline the stormwater treatment post construction BMPs required to control pollutants associated with storm events up to the 85th percentile storm event or 0.75-inch, whichever is larger, per the Los Angeles County LID Standards Manual. Site 1 BMPs would control and treat stormwater runoff in compliance with LID requirements and no increase in runoff would result from the Project. Because there are no existing on-site BMPs, the Project at Site 1 would result in improved surface water quality related to stormwater run-off compared to existing conditions.

Based on soil conditions mentioned in the geotechnical report (Appendix 4.5-1 to this Draft EIR), infiltration is deemed infeasible for Site 1. Therefore, capture and use would be the next priority level BMP to consider. In order to satisfy County requirements for capture and use for Site 1, the volume retained must be used within 96 hours after the rain event. If the County updates their Low Impact Design policy to allow for longer hold times, then capture and use would still be feasible, and the Project would consider longer holding durations. (Refer to Figure 11 in the Water Resources Conceptual Report in Appendix 4.8-1 for calculations).

A cistern would be designed to hold the required volume, and the retained stormwater would be distributed to approved uses on the property such as cooling tower makeup, toilet flushing, or irrigation subject to Los Angeles County Health Department approval. There are multiple options for the system used to hold the collected stormwater. The two most common options include a waterproof cast in place concrete room (similar to a fire tank room), and a large diameter pipe.

Although dimensions for a waterproof room may vary, the tank for Site 1, could be 10’x20’x40’. Additionally, there are multiple pipe sizes that can be used to store the collected stormwater, but assuming an 8-foot diameter pipe would result in approximately 156 linear feet of pipe for Site 1 (Refer to Figure 12 in the Water Resources Conceptual Report for locations which have been identified as adequate to accommodate a cistern for Site 1.

The County’s requirement for biofiltration planters is that they are open bottom allowing for incidental infiltration. However, biofiltration planters can be located on structure if the plans are reviewed and approved by the State Water Resources Control Board. Based on geotechnical recommendations for Site

27 Ibid., page 9
28 Ibid., page 22.
29 Ibid., page 23.
1, open bottom biofiltration is infeasible. Therefore, Site 1 would be subject to review and approval from the State Water Resources Control Board.

Due to incorporation of the site specific LID BMPs from the County LID standards manual that are determined to be applicable to Site 1, operation of the Project on Site 1 would not result in discharges that would violate any water quality standard or waste discharge requirements, or otherwise substantially degrade water quality. As a result of implementing LID BMPs and RR-HWQ-2, there would be less than significant operational impacts on surface water quality at Site 1.

Site 2

The Project would slightly decrease the overall percentage of impervious surfaces. The existing Site 2 has approximately 100 percent impervious surface areas, which includes buildings and hardscape surfaces. Existing stormwater discharges from Site 2 without treatment or detention. The Project would develop buildings across Site 2, and it is anticipated that the new overall Project Site impervious area would be reduced to approximately 95 percent. This reduction is due to the addition of landscape areas. For the purposes of this analysis, the runoff from Project irrigation is assumed to be negligible. Development of Site 2 would not increase concentrations of the items listed as constituents of concern for the Ballona Creek Watershed as it would implement BMPs for managing stormwater runoff in accordance with the current City of Los Angeles LID Manual. The LID requirements for Site 2 would outline the stormwater treatment post construction BMPs required to control pollutants associated with storm events up to the 85th percentile storm event or 0.75-inch, whichever is larger, per the City LID Manual. Site 2 BMPs would control and treat stormwater runoff in compliance with LID requirements and no increase in runoff would result from the Project. Because there are no existing on-site BMPs, the Project at Site 2 would result in improved surface water quality related to stormwater run-off compared to existing conditions.

Based on soil conditions mentioned in the geotechnical report (Appendix 4.5-2 to this Draft EIR), infiltration is deemed infeasible for Site 2. Therefore, capture and use would be the next priority level BMP to consider. In order to satisfy the City requirements for capture and use for Site 2, the volume retained must be emptied at least once during the 7-month rain season (October through April). (Refer to Figure 11 in the Water Resources Conceptual Report in Appendix 4.8-1 for calculations).

A cistern would be designed to hold the required volume, and the retained stormwater would be distributed to approved uses on the property such as cooling tower makeup, toilet flushing, or irrigation subject to Los Angeles County Health Department approval. There are multiple options for the system used to hold the collected stormwater. The two most common options include a waterproof cast in place concrete room (similar to a fire tank room), and a large diameter pipe.

Although dimensions for a waterproof room may vary, the tank for Site 2 could be 10'x15'x21'. Additionally, there are multiple pipe sizes that can be used to store the collected stormwater, but assuming an 8-foot diameter pipe would result in approximately 62 linear feet of pipe for Site 2 (Refer to Figure 12 in the Water Resources Conceptual Report for locations which have been identified as adequate

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30 Ibid., page 9.
31 Ibid., page 22.
32 Ibid., page 23.
to accommodate a cistern for Site 2. For Site 2, the City has no preference on whether the biofiltration planters are closed or open bottom.

Due to incorporation of site specific LID BMPs from the City LID standards manual that are determined to be applicable to Site 2, operation of the Project on Site 2 would not result in discharges that would violate any water quality standard or waste discharge requirements, or otherwise substantially degrade water quality. As a result of implementing LID BMPs and RR-HWQ-2, there would be less than significant operational impacts on surface water quality at Site 2.

Site 3

The Project would slightly decrease the overall percentage of impervious surfaces. The existing Site 3 is approximately 100 percent impervious surface areas, which includes buildings and hardscape surfaces. Existing stormwater discharges from Site 3 without treatment or detention. The Project would develop buildings across Site 3, and it is anticipated that the new overall Project Site impervious area would be reduced to approximately 95 percent. This reduction is due to the addition of landscape areas. For the purposes of this analysis, runoff from Project irrigation is assumed to be negligible. The Project Site would not increase concentrations of the items listed as constituents of concern for the Ballona Creek Watershed as it would implement BMPs for managing stormwater runoff in accordance with the current County LID Standards Manual. The LID requirements for the Project Site would outline the stormwater treatment post construction BMPs required to control pollutants associated with storm events up to the 85th percentile storm event or 0.75-inch, whichever is larger, per the Los Angeles County LID Standards Manual. The Project BMPs would control and treat stormwater runoff in compliance with LID requirements and no increase in runoff would result from the Project. Because there are no existing on-site BMPs, the Project would result in improved surface water quality related to stormwater run-off compared to existing conditions.

Based on soils conditions mentioned in the geotechnical report (Appendix 4.5-3 to this Draft EIR), infiltration is deemed infeasible for Site 3. Therefore, capture and use would be the next priority level BMP to consider. In order to satisfy the County requirements for capture and use for Site 3, the volume retained must be used within 96 hours, after the rain event. If the County updates their Low Impact Design policy to allow for longer hold times, then capture and use would still be feasible, and the Project would consider longer holding durations. (Refer to Figure 11 in the Water Resources Conceptual Report in Appendix 4.8-1 for calculations).

A cistern would be designed to hold the required volume, and the retained stormwater would be distributed to approved uses on the property such as cooling tower makeup, toilet flushing, or irrigation subject to Los Angeles County Health Department approval. There are multiple options for the system used to hold the collected stormwater. The two most common options include a waterproof cast in place concrete room (similar to a fire tank room), and a large diameter pipe.

Although dimensions for a waterproof room may vary, the tank for Site 3 could be 10’x11’x15’. Additionally, there are multiple pipe sizes that can be used to store the collected stormwater, but assuming an 8-foot diameter pipe would result in approximately 31 linear feet of pipe for Site 3 (Refer to

33 Ibid., page 9
34 Ibid., page 22.
35 KPFF Consulting Engineers, op.cit., page 23.
Figure 12 in the Water Resources Conceptual Report for locations which have been identified as adequate to accommodate a cistern for Site 3.

The County’s requirement for biofiltration planters is that they are open bottom allowing for incidental infiltration. However, biofiltration planters can be located on structure if the plans are reviewed and approved by the State Water Resources Control Board. Based on geotechnical recommendations Site 3 will require a closed bottom biofiltration planter due to the building limits extending to the property line. Therefore, Site 3 will also be subject to review and approval from the State Water Resources Control Board.

Due to incorporation of site specific LID BMPs from the County LID standards manual that are determined to be applicable to Site 3, operation of the Project on Site 3 would not result in discharges that would violate any water quality standard or waste discharge requirements, or otherwise substantially degrade water quality. As a result of implementing LID BMPs and RR-HWQ-2, there would be less than significant operational impacts on surface water quality.

**Groundwater**

**Site 1**

Development of Site 1 would not include the installation or operation of water wells, or any extraction or recharge system that is in the vicinity of the coast, an area of known groundwater contamination or seawater intrusion, a municipal supply well or spreading ground facility. The Project at Site 1 would not include surface or subsurface application or introduction of potential contaminants or waste materials during operation. The Project at Site 1 would not result in releases or spills of contaminants that could reach a groundwater recharge area or spreading ground or otherwise reach groundwater through percolation.36

As discussed above, oil wells may be encountered on Site 1. As such, water encountered in the vicinity of the oil wells could be petroleum-impacted. However, operation of the Project would not alter these existing conditions.

As stated in Section 4.7 Hazards and Hazardous Materials, after preparation of the Phase I ESA additional information was provided by the LAFD UST Division concerning the 10,000-gallon UST on Site 1. The 10,000-gallon UST was used to store gasoline and was abandoned in-place. However, no evidence of impacted soil was found in soil samples analyzed for gasoline, BTEX, and lead; and no groundwater was encountered to the maximum depth drilled. Furthermore, on May 1995, a no further action letter for the UST was issued by the LAFD. Provided adherence to the appropriate RR-HWQ-1 through RR-HWQ-8 compliance and containment measures which identify BMPs for the treatment of stormwater runoff and maintenance of water quality, operation of the Project on Site 1 would result in less than significant impacts related to groundwater quality.37

**Site 2**

Development of Site 2 would not include the installation or operation of water wells, or any extraction or recharge system that is in the vicinity of the coast, an area of known groundwater contamination or

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36 Ibid., page 30.
37 Ibid.
seawater intrusion, a municipal supply well or spreading ground facility. The Project at Site 2 would not include surface or subsurface application or introduction of potential contaminants or waste materials during operation. The Project at Site 2 would not result in releases or spills of contaminants that could reach a groundwater recharge area or spreading ground or otherwise reach groundwater through percolation.\textsuperscript{38}

As discussed above, oil wells may be encountered on Site 2. As such, water encountered in the vicinity of the oil wells could be petroleum-impacted. However, operation of the Project would not alter these existing conditions. Provided adherence to the appropriate RR-HWQ-1 through RR-HWQ-8 compliance and containment measures which identify BMPs for the treatment of stormwater runoff and maintenance of water quality, operation of the Project on Site 2 would result in less than significant impacts related to groundwater quality.\textsuperscript{39}

\textbf{Site 3}

As stated above, development of Site 3 would not include the installation or operation of water wells, or any extraction or recharge system that is in the vicinity of the coast, an area of known groundwater contamination or seawater intrusion, a municipal supply well or spreading ground facility. Provided adherence to the appropriate RR-HWQ-1 through RR-HWQ-8 compliance and containment measures which identify BMPs for the treatment of stormwater runoff and maintenance of water quality, operation of the Project on Site 3 would result in less than significant impacts related to groundwater quality.\textsuperscript{40}

\begin{itemize}
\item \textbf{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?
\item \textbf{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?
\item \textbf{Threshold 4.8-5:} Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?
\end{itemize}

\textbf{Construction}

Construction activities for the Project would include demolition of the existing buildings on Sites 1 and 3, demolition of one building on Site 2, and site work, excavation for subterranean levels, construction of the proposed new structures, and installation of hardscape and landscape around the structures. These activities have the potential to temporarily alter existing drainage patterns and flows on each of the Project Sites by exposing the underlying soils, modifying flow direction, and making each site temporarily more permeable. Exposed and stockpiled soils could be subject to erosion and conveyance into nearby

\begin{itemize}
\item \textsuperscript{38} Ibid., page 30.
\item \textsuperscript{39} Ibid.
\item \textsuperscript{40} Ibid.
\end{itemize}
storm drains during storm events. In addition, on-site watering activities to reduce airborne dust could contribute to pollutant loading in runoff.

**Site 1**

Because the construction area on Site 1 would be greater than one acre, the Developer would be required to obtain coverage under the NPDES Construction General Permit. In accordance with the requirements of this permit, the Project would implement a SWPPP that specifies BMPs and erosion control measures to be used during construction to manage runoff flows and prevent pollution. BMPs would be designed to reduce runoff and pollutant levels in runoff during construction. The NPDES and SWPPP measures are designed to contain and treat, as necessary, stormwater or construction watering on the Project Sites to prevent runoff from reaching off-site drainage facilities or receiving waters. Construction activities would be temporary and flow directions and runoff volumes during construction would be controlled."  

In addition, the construction of the Project on Site 1 would be required to comply with all applicable Los Angeles County grading permit regulations that require necessary measures, plans, and inspections to reduce sedimentation and erosion. Thus, through compliance with all NPDES Construction General Permit requirements, including preparation of a SWPPP, implementation of BMPs, and compliance with applicable Los Angeles County grading regulations, the Project at Site 1 would not substantially alter the drainage patterns at Site 1 in a manner that would result in substantial erosion, siltation, or flooding on- or off-site. Similarly, adherence to standard compliance measurements in construction activities would not cause flooding, substantially increase or decrease the amount of surface water flow from the Sites into stormwater drainage systems. Therefore, with compliance with RR-HWQ-1 through RR-HWQ-8, which identify BMPs for the treatment of stormwater runoff and maintenance of water quality, construction-related impacts to drainage patterns and runoff would be less than significant.

**Site 2**

Because the construction site on Site 2 would be approximately one acre, the Developer would be required to obtain coverage under the NPDES Construction General Permit. In accordance with the requirements of this permit, the Project would implement a SWPPP that specifies BMPs and erosion control measures to be used during construction to manage runoff flows and prevent pollution. BMPs would be designed to reduce runoff and pollutant levels in runoff during construction. The NPDES and SWPPP measures are designed to contain and treat, as necessary, stormwater or construction watering on the Project Sites to prevent runoff from reaching off-site drainage facilities or receiving waters. Construction activities would be temporary and flow directions and runoff volumes during construction would be controlled."  

In addition, the construction of the Project on Site 2 would be required to comply with all applicable City of Los Angeles grading permit regulations that require necessary measures, plans, and inspections to reduce sedimentation and erosion. Thus, through compliance with all NPDES Construction General Permit requirements, including preparation of a SWPPP, implementation of BMPs, and compliance with applicable City grading regulations, the Project at Site 2 would not substantially alter the drainage patterns

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41 Ibid., pages 6-7.
42 Ibid., page 7.
43 Ibid., pages 6-7.
at Site 2 in a manner that would result in substantial erosion, siltation, or flooding on- or off-site. Similarly, adherence to standard compliance measurements in construction activities would not cause flooding, substantially increase or decrease the amount of surface water flow from the Sites into stormwater drainage systems. Therefore, with compliance with RR-HWQ-1 through RR-HWQ-8, containment measures which identify BMPs for treatment of stormwater runoff and maintenance of water quality, construction-related impacts to drainage patterns and runoff would be less than significant.

**Site 3**

Because the construction site on Site 3 would be less than one acre, the Developer would not be required to obtain coverage under the NPDES Construction General Permit. However, construction of the Project on Site 3 would be required to comply with all applicable Los Angeles County grading permit regulations that require necessary measures, plans, and inspections to reduce sedimentation and erosion. Thus, through compliance with applicable regulations, the Project on Site 3 would not substantially alter the drainage patterns at the Project Site in a manner that would result in substantial erosion, siltation, or flooding on- or off-site. Similarly, adherence to standard compliance measures in construction activities would not cause flooding, substantially increase or decrease the amount of surface water flow from the Sites into stormwater drainage systems. Therefore, with compliance with RR-HWQ-2 which identify BMPs for treatment stormwater runoff and maintenance of water quality, construction-related impacts to drainage patterns and runoff would be less than significant.

**Operation**

During operation of the Project, Sites 1, 2, and 3 would discharge into a City of Los Angeles 18” underground storm drainpipe located along Vermont Avenue. In addition, a portion of Site 1 would discharge toward Shatto Place, which drains north into another 18” underground storm drainpipe located along 4th Street. Stormwater that leaves the three Project Sites would surface drain into gutters located along Vermont Avenue and Shatto Place, where it would flow north toward the nearest catch basins. In general, stormwater runoff would enter offsite catch basins and underground storm drainage pipes, which convey stormwater through underground pipe networks eventually draining into Ballona Creek and eventually into the Santa Monica Bay. As discussed above, implementation of the Project would slightly decrease the percentage of impervious surface area. The existing Sites are approximately 100 percent impervious surface area, including buildings and hardscape. Currently, stormwater is discharged from the Project Sites without treatment or detention. Because each of the Project Sites would include additional new landscape areas, it is anticipated that the new overall impervious area at the Sites would be reduced to approximately 95 percent.

As described in further detail under the surface water quality impact analysis above, the Project would implement stormwater mitigation strategies in accordance with the applicable regulations (County LID Ordinance for Sites 1 and 3, City LID Ordinance for Site 2) to collect the first flush of runoff from building roofs and hardscape areas. Stormwater flow at the Sites would be managed via roof drains, area drains, and pipes to discharge points and existing catch basins located on the adjacent public streets. Table 4.8-

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44 Ibid., page 7.
46 Ibid., page 5.
2 below shows the existing 50-year frequency design storm event peak flow rate and the proposed 50-year frequency design storm event peak flow rate. As shown, stormwater runoff would not increase after completion of the Project.\(^48\)

<table>
<thead>
<tr>
<th>Drainage Area</th>
<th>Area (in acres)</th>
<th>Existing Conditions Q50 (cfs)</th>
<th>Project Q50 (cfs)</th>
<th>Incremental Change</th>
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<tbody>
<tr>
<td>Site 1 – Vermont Avenue</td>
<td>1.737</td>
<td>5.4</td>
<td>5.4</td>
<td>0</td>
</tr>
<tr>
<td>Site 1 – Shatto Place</td>
<td>.797</td>
<td>2.5</td>
<td>2.5</td>
<td>0</td>
</tr>
<tr>
<td>Site 2</td>
<td>.994</td>
<td>3.1</td>
<td>3.1</td>
<td>0</td>
</tr>
<tr>
<td>Site 3</td>
<td>.498</td>
<td>1.6</td>
<td>1.6</td>
<td>0</td>
</tr>
</tbody>
</table>


Consequently, operation of the Project would not cause flooding during the 50-year storm event, would not create runoff that would exceed the capacity of existing or planned drainage systems, would not require construction of new stormwater drainage facilities or expansion of existing facilities, or result in a permanent adverse change to the movement of surface water.\(^49\) Therefore, operation-related impacts to drainage patterns and runoff would be less than significant.

**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 table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

**Construction**

The Project Sites are not located within a designated groundwater recharge basin. The Project would not directly utilize groundwater supplies as all potable and nonpotable water would be supplied through sources available to the City of Los Angeles Department of Water and Power (“LADWP”). As discussed in Section 4.14, Utilities and Service Systems, temporary construction water use would be substantially less than the existing water consumption. As a result, construction of the Project would not deplete groundwater supplies.

As discussed above, groundwater has historically existed at relatively shallow depths (20 feet below ground surface) at the Sites. The Project would include two levels of subterranean parking below Site 1 (approximately 20 foot excavation), 1.5 levels of subterranean parking below Site 2 (approximately 20 foot excavation), and three levels of subterranean parking below Site 3 (approximately 30 foot excavation). Construction of the subterranean parking levels at the Project Sites would require excavation below the historically high groundwater depths and temporary dewatering would be necessary to achieve a dry and stable excavation. Los Angeles County Regional Water Quality Control Board approval would

\(^{48}\) Ibid., pages 7-8.

\(^{49}\) Ibid., page 7.
be required to discharge dewatering water to the street or storm drain. The purpose of dewatering operations is for the protection of both existing and proposed building structures. Operation of temporary dewatering systems would incrementally lower local groundwater levels in the immediate vicinity of the Sites. However, groundwater pumping would be limited to the top 10-15 feet of the groundwater table (based on the historic high groundwater level) and impacts to regional groundwater flow and level would not occur. Once the temporary construction dewatering is discontinued, the water table would be expected to return to its current elevation. Therefore, the Project would result in less than significant impacts related to groundwater levels and would not substantially deplete groundwater supplies in a manner that would result in a net deficit in aquifer volume or lowering of the local groundwater table.

**Operation**

All potable and nonpotable water at the Project Sites would be supplied through existing developed domestic water sources available to LADWP. As such, operation of the Project would not involve groundwater extraction.

As presented in Section 4.14, Utilities and Service Systems, water supplied from groundwater extraction comprises a small percentage (approximately 10 percent) of LADWP’s overall water supply; out of that 10 percent, less than 20 percent is extracted from the Central Groundwater Basin, which is an adjudicated basin. Operation of the Project would not affect the amount of groundwater extracted from the Central Basin by LADWP.

The subterranean levels of the Project would be designed to withstand the hydrostatic forces of groundwater and incorporate comprehensive waterproofing systems in accordance with current industry standards and construction methods. As such, permanent dewatering operations would not be required and the groundwater level would be expected to return to the existing level during operation of the Project at each of the Project Sites. Therefore the Project’s potential impact on groundwater levels during operation at each of the Project Sites would be less than significant.

Interference with groundwater recharge during operation of a project is largely caused by the creation of impervious surface area (e.g., buildings, road, parking lots, etc.). The Project Sites are not located within a designated groundwater recharge area and are not currently used for groundwater recharge activities. The Sites are currently developed with impervious surfaces and stormwater mostly flows off the Sites and does not result in substantial groundwater recharge. Conditions at the Sites would remain largely the same, as the Project would replace the existing impervious surfaces with new slightly reduced impervious surfaces (from 100 percent to 95 percent). As such, operation of the Project would have a less than significant impact on groundwater recharge.

The Project would result in less-than-significant operational impacts and would not substantially directly deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table.

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50 Ibid., pages 29-30.
51 Ibid., page 31.
52 Ibid.
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?

Lands designated as special flood hazard areas are identified by the Federal Emergency Management Agency (“FEMA”) and published in the Flood Insurance Rate Map (“FIRM”) to establish the flood risk zone. These areas are subject to inundation by a flood having a one-percent or greater probability of being equaled or exceeded during any given year. The Project Sites are not located within a 100-year flood plain; however, the Sites are located within the potential inundation area of the Hollywood Reservoir. Dam safety regulations are the primary means of reducing damage or injury due to inundation occurring from dam failure. The California Division of Safety of Dams regulates the siting, design, construction, and periodic review of all dams in the State. In addition, dams and reservoirs are monitored during storms and measures are instituted in the event of potential overflow. These measures include seismic retrofits and other related dam improvements completed under the requirements of the 1972 State Dam Safety Act. Further, in the event of a dam failure at the Hollywood Reservoir, existing urban development north of the Project Sites, including the US-101, would serve as a physical barrier between the upstream portion of the reservoirs/dams and the Project Sites. Therefore, the risk of flooding from inundation by dam failure is considered low and impacts would be less than significant.

CUMULATIVE IMPACTS

The cumulative impact analysis considers the impacts to hydrology and water quality resulting from the Project in conjunction with the 115 related projects identified in Table 3-4 and Figure 3-22 in Section 3.0, Project Description and Environmental Setting.

Cumulative impacts to surface water could result from an increase in stormwater runoff that would degrade water quality or result in drainage issues and flooding. Cumulative impacts to groundwater could result from the overall utilization of groundwater basins located in proximity to the Project Site and the related projects. In addition, interruptions to existing hydrology flow by dewatering operations of underground water would have the potential to affect groundwater levels. Cumulative impacts are discussed below.

Surface Water Hydrology and Water Quality

The Project in conjunction with forecasted growth in the Ballona Creek Watershed could cumulatively increase stormwater runoff flows. However, as noted above, the Project would not increase stormwater flows. Also, in accordance with City and County of Los Angeles requirements, related projects and other future development projects would be required to implement BMPs to manage stormwater in accordance with LID guidelines, which would hold steady or decrease flows to the storm drain system. Furthermore, the City of Los Angeles Department of Public Works would review each future development project on a case-by-case basis to ensure sufficient local and regional infrastructure would be available to accommodate stormwater runoff. Therefore, potential cumulative impacts associated with the Project on surface water hydrology would be less than significant.

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54 City of Los Angeles Department of City Planning, Safety Element of the Los Angeles City General Plan, Adopted November 26, 1996, Exhibit G: Inundation & Tsunami Hazard Areas in the City of Los Angeles.
Additionally, future growth in the Ballona Creek Watershed would be subject to NPDES requirements relating to water quality for both construction and operation. These requirements are implemented through the MS4 permit and LID regulations established by the permittees, including the County, and are designed to improve regional water quality over time. With application of these regulations to future new development in the urbanized area over time, future land use changes or development would not adversely affect regional surface water quality. As noted above, the Project would not have an adverse impact on water quality, and would improve the quality of on-site flows due to the introduction of new BMPs that would collect, treat, and discharge runoff from the Project Sites (most of which is not treated before being discharged under existing conditions). Therefore, potential cumulative impacts on water quality would be less than significant.

**Groundwater Hydrology and Quality**

Dewatering activities associated with the Project and other related projects could affect groundwater levels within the Basin. As mentioned above, the purpose of dewatering operations is for the protection of both existing and proposed building structures and temporary groundwater pumping is limited to the top 10-15 feet of the groundwater table (based on the historic high groundwater level). The dewatering system expected for construction of the Project would be temporary, would not operate at all times, and would only be activated when the level of the water reaches the permitted level that initiates the dewatering operations. While short-term, periodic dewatering has the potential to have a minimal effect on groundwater hydrology locally at the Project Sites, dewatering operations at such a temporary, localized level would not have the potential to affect regional groundwater hydrology.

Similar to the Project, other proposed projects overlying the groundwater basin would likely incorporate structural designs for subterranean levels that are able to withstand hydrostatic forces and incorporate comprehensive waterproofing systems in accordance with current industry standards and construction methods. If any related projects require permanent dewatering systems, such systems would be regulated by the SWRCB. Should excavation for other related projects extend beneath the groundwater level, temporary groundwater dewatering systems would be designed and implemented in accordance with SWRCB permit requirements. These dewatering operations would be limited to temporary and local impact to the groundwater level. As such, cumulative impacts to groundwater hydrology would be less than significant.

Future growth in the Basin would be subject to LARWQCB requirements relating to groundwater quality. In addition, since the Project Sites are located in an urbanized area, future land use changes or development are not likely to cause substantial changes in regional groundwater quality. As noted above, the Project would not have a significant impact on groundwater quality. Also, it is anticipated that as with the Project, future development projects would also be subject to LARWQCB requirements and implementation of measures to comply with total maximum daily loads. Therefore, cumulative impacts to groundwater quality would be less than significant.

**PROJECT DESIGN FEATURES AND REGULATORY REQUIREMENTS**

**Project Design Features**

No specific Project Design Features are proposed relevant to hydrology and water quality.
Regulatory Requirements

The following standards would be imposed by existing laws and regulations and would work to address Project impacts. These are not required mitigation but are inherent Project components.

**RR HWQ-1:** Compliance with applicable National Pollutant Discharge Elimination System ("NPDES") permit requirements and the Los Angeles Regional Water Quality Control Board Municipal Storm Water permit ("MS4 permit") is required.

**RR HWQ-2:** Runoff from parking lots located on Sites 1 and 3 will be treated, as required by County’s LID Ordinance, prior to discharging into existing storm drain systems. Runoff from Site 2 will be treated as required by the City’s LID Ordinance.

**RR HWQ-3:** All wastes from construction of the Project will be disposed of as required by federal, State, County (Sites 1 and 3), and City (Site 2) regulations. Appropriately labeled recycling bins will be used to recycle construction materials including: solvents, water-based paints, vehicle fluids, broken asphalt and concrete; wood, and vegetation. Non-recyclable materials/wastes will be taken to an appropriate landfill. Toxic wastes will be discarded at a licensed regulated disposal site.

**RR HWQ-4:** Leaks, drips, and spills will be cleaned up immediately to prevent contaminated soil on paved surfaces that can be washed away into the storm drains as required by the NPDES Construction General Permit.

**RR HWQ-5:** As required by the NPDES Construction General Permit, material spills will be prohibited from being hosed down at the pavement. Dry cleanup methods will be required.

**RR HWQ-6:** During construction, where truck traffic is frequent, gravel approaches and dirt tracking devices will be used to reduce soil compaction and limit the tracking of sediment into streets as required by the NPDES Construction General Permit.

**RR HWQ-7:** As required by the NPDES Construction General Permit, all construction vehicle/equipment maintenance, repair, and washing will be conducted away from storm drains. All major repairs will be required to be conducted at an appropriate location. Drip pans or drop cloths will be required to catch drips and spills.

**RR HWQ-8:** Project construction will comply with the County’s NPDES and MS4 requirements, and City and County LID requirements for water quality as appropriate to the respective Sites.

**MITIGATION MEASURES**

Because the Project’s impacts would be less than significant, no mitigation measures would be required.

**LEVEL OF SIGNIFICANCE AFTER MITIGATION**

Project impacts with regard to hydrology and water would be less than significant.

Cumulative impacts with regard to hydrology and water quality would be less than significant.