IV. Environmental Impact Analysis
F. Hydrology and Water Quality

1. Introduction

This section analyzes the Project's potential impacts with regard to hydrology, water quality, and groundwater. This analysis is based on the *Water Resources Technical Report* prepared by Fuscoe Engineering in March 2017. This report is included as Appendix F of this Draft EIR.

2. Environmental Setting

a. Regulatory Framework

(1) Federal

(a) Clean Water Act

The Clean Water Act was first introduced in 1948 as the Water Pollution Control Act. The Clean Water Act 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 Clean Water Act 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 Clean Water Act forms the basic national framework for the management of water quality and the control of pollutant discharges. The Clean Water Act sets forth a number of objectives in order to achieve the above-mentioned 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.[1] The State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB) are the primary state agencies responsible for implementing the Clean Water

[1] *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.*

Act and regulating the activities and factors that affect or have the potential to affect water quality in the state.

The Clean Water Act provides the legal framework for several water quality regulations including the National Pollutant Discharge Elimination System (NPDES), effluent limitations, water quality standards, pretreatment standards, anti-degradation policy, non-point source discharge programs, and wetlands protection. An NPDES permit is required for all discharges of pollutants to waters of the United States from any point source. Federal regulations issued in November 1990 and revised in 2003 expanded the original scope of the NPDES program to include the permitting of stormwater discharges from construction sites that disturb areas larger than one acre. Stormwater discharges from construction sites with a disturbed area of one or more acres require either an individual NPDES permit or coverage under the Construction General Permit of the state. The latter is accomplished by completing a construction site risk assessment to determine the appropriate coverage level; preparing a Stormwater Pollution Prevention Plan (SWPPP), including site maps, a Construction Site Monitoring Program, and sediment basin design calculations; completing a post-construction water balance calculation for hydromodification controls for projects located outside of a Phase I or Phase II permit area; and completing a Notice of Intent.

The primary objective of the SWPPP is to identify and apply proper construction, implementation, and maintenance of Best Management Practices (BMPs) to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction site during construction. The SWPPP also outlines the monitoring and sampling program required for the construction site to verify compliance with discharge Numeric Action Levels set by the Construction General Permit.

In addition to regulating non-stormwater discharges, the Clean Water Act sets forth water quality standards based on a water body's designated beneficial uses (e.g., wildlife habitat, agricultural supply, fishing etc.), along with water quality criteria necessary to support those uses. Water quality criteria are either prescribed concentrations or levels of constituents such as lead, suspended sediment, and fecal coliform bacteria, or narrative statements which represent the quality of water that support a particular use.

When designated beneficial uses of a particular receiving water body are being compromised by water quality, Section 303(d) of the Clean Water Act requires identifying and listing that water body as "impaired." Once a water body has been deemed impaired, a Total Maximum Daily Load must be established for the pollutant(s) or flows causing the impairment. A Total Maximum Daily Load is an estimate of the total load of pollutants from point, non-point, and natural sources that a water body may receive without exceeding applicable water quality standards. Those facilities and activities that are discharging into the water body, collectively, must not exceed the Total Maximum Daily Load. The United

States Environmental Protection Agency (USEPA) oversees the 303(d) program and either the USEPA or the SWRCB establishes the Total Maximum Daily Load schedule for individual constituents.

In addition to trash and debris, common pollutants of concern that have the potential to affect water quality generally fall into one of the following seven categories: sediments, nutrients, bacteria/viruses, oil/grease, metals, organic compounds, and pesticides.

(b) Federal Antidegradation Policy

The Federal Antidegradation Policy requires states to develop statewide antidegradation policies and identify methods for implementing them.[2] Pursuant to the Code of Federal Regulations, state antidegradation policies and implementation methods must, 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. State permitting actions must be consistent with the Federal Antidegradation Policy.

(c) Safe Drinking Water Act

The federal Safe Drinking Water Act, established in 1974, sets drinking water standards throughout the country and is administered by the USEPA. The drinking water standards established in the Safe Drinking Water Act, as set forth in the Code of Federal Regulations, 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 to protect the public from contaminants in drinking water by establishing maximum contaminants levels, as set forth in the California Code of Regulations, 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.

(2) State

(a) California Water Code

Under the California Water Code, the State of California is divided into nine regions governed by regional boards that under the guidance and review of the SWRCB,

[2] *40 CFR, Section 131.12.*

implement and enforce provisions of the California Water Code and the Clean Water Act. The Project Site is located within Region 4, also known as the Los Angeles Region, and governed by the Los Angeles RWQCB (LARWQCB).

Section 13050 of the California Water Code defines "pollution," "contamination," and "nuisance." Briefly defined, pollution means an alteration of water quality such that it unreasonably affects the beneficial uses of water. Contamination means an impairment of water quality to the degree that it creates a hazard to the public health. Nuisance is defined as anything that is injurious to health, is offensive to the senses, or is an obstruction to property use, and which affects a considerable number of people.

(b) Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (embodied in the California Water Code) established the principal California legal and regulatory framework for water quality control. The Porter-Cologne Water Quality Control Act includes provisions to address the requirements of the Clean Water Act, including NPDES permitting, dredge and fill programs, and civil and administrative penalties. The Porter-Cologne Water Quality Control Act also addresses issues relating to the conservation, control, and utilization of the water resources of the state. Under the Porter-Cologne Water Quality Control Act, the quality of all the waters of the state (including groundwater and surface water) must be protected for the use and enjoyment by the people of the state.

(c) California Coastal Act

The California Coastal Commission was established in 1972 and is responsible for protecting, conserving, and restoring water quality in coastal environments as defined under Sections 30230 and 30231 of the California Coastal Act (Coastal Act). The California Coastal Commission also establishes specific policies that address issues such as shoreline public access and recreation, terrestrial and marine habitat protection, visual resources, public works, and other uses. The Coastal Act provides long-term protection of California's 1,100-mile coastline for the benefit of current and future generations. In order to meet the requirements of Sections 30230 and 30231, the California Coastal Commission implements site design, source control, and treatment control BMPs.

As required by the California Coastal Commission, new development and redevelopment projects located within a coastal zone are required to apply for a Coastal Development Permit prior to construction. The Coastal Development Permit requires projects to demonstrate water quality protection through the implementation of site design, source control, and treatment control BMPs. The Project Site is located within the coastal zone and will be subject to a Coastal Development Permit.

(d) California Antidegradation Policy

The California Antidegradation 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 Antidegradation Policy, the California Antidegradation 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.

(e) California Toxics Rule

The California Toxics Rule establishes water quality criteria for certain toxic substances to be applied to waters in the state. The California Toxics 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 LARWQCB as having beneficial uses protective of aquatic life or human health.

(f) National Pollutant Discharge Elimination System

The LARWQCB issues combined NPDES permits under the Clean Water Act and Waste Discharge Requirements (under the California Water Code) to point dischargers of waste to surface waters. To ensure protection of water quality, NPDES permits may contain effluent limitations for pollutants of concern, pollutant monitoring frequencies, reporting requirements, schedules of compliance (when appropriate), operating conditions, BMPs, and administrative requirements. NPDES permits apply to publicly-owned treatment works discharges; industrial wastewater discharges; and municipal, industrial, and construction site stormwater discharges. Further discussion of the LARWQCB stormwater discharge permitting activities is provided below.

(i) Construction

The Clean Water Act requires coverage under a NPDES construction permit for stormwater discharges to surface waters associated with various construction activities, except activities that result in disturbance of less than one acre of total land area which are not part of a larger common plan of development or sale. The SWRCB has issued a statewide NPDES Construction General Permit for stormwater discharges from construction sites. Any project that disturbs an area more than one acre, as well as linear underground/overhead projects disturbing over one acre require a Notice of Intent to discharge under the Construction General Permit. The Construction General Permit includes three levels of risk for construction sites based on calculated project sediment and receiving water risk. The Construction General Permit includes measures to eliminate or

reduce pollutant discharges through implementation of a SWPPP, which describes the implementation and maintenance of BMPs to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the site during construction. The Construction General Permit contains receiving water limitations that require stormwater discharges to not cause or contribute to a violation of any applicable water quality standard. The permit also requires implementation of programs for visual inspections and sampling for specified constituents (e.g., nonvisible pollutants). In addition, based upon particular project risk levels, monitoring is required for stormwater discharges.

(ii) Operation

In accordance with Section 402(p) of the Clean Water Act, municipal NPDES permits prohibit the discharge of non-stormwater except under certain conditions and require controls to reduce pollutants in discharges to the maximum extent practicable. Such controls include BMPs, as well as system, design, and engineering methods. Under the municipal NPDES permit, permittees are required to implement a development planning program to address stormwater pollution. These programs require project applicants for certain types of projects to implement Standard Urban Stormwater Mitigation Plans (SUSMP) throughout the operational life of their projects. The purpose of the SUSMP is to reduce the discharge of pollutants in stormwater by outlining BMPs which must be incorporated into the design plans of new development and redevelopment. These treatment control BMPs must be sufficiently designed and constructed to treat or filter either the first 0.75 inch of stormwater runoff from a storm event or the runoff associated with the 85th percentile, 24-hour storm event, whichever is greater. A project is subject to SUSMP if it falls under one of the categories listed below:

- Single-family hillside homes;
- Ten or more unit homes (including single family homes, multifamily homes, condominiums, and apartments);
- Automotive service facilities;
- Restaurants;
- 100,000 or more square-feet of impervious surface in industrial/commercial development;
- Retail gasoline outlet;
- 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

- Location within or directly adjacent to or discharging directly to an environmentally sensitive area if the discharge is likely to impact a sensitive biological species or habitat and the development creates 2,500 square feet or more of impervious surface.

(g) California Green Building Standards Code

The California Green Building Standards Code (CALGreen Code), Part 11 of the California Building Standards Code (Title 24) is designed to improve public health, safety, and general welfare by utilizing design and construction methods that reduce the negative environmental impact of development and encourage sustainable construction practices.

The CALGreen Code provides mandatory direction to developers of all new construction and renovations of residential and non-residential structures with regard to all aspects of design and construction, including but not limited to site drainage design, stormwater management, and water use efficiency. Required measures are accompanied by a set of voluntary standards designed to encourage developers and cities to aim for a higher standard of development.

(h) California Water Plan

The California Water Plan provides a framework for water managers, legislators, and the public to consider options and make decisions regarding California's water future. The California Water 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 California Water 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.

(3) Local

(a) County of Los Angeles Hydrology Manual

The Los Angeles County Department of Public Works' Hydrology Manual (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.[3] The County also limits the allowable discharge into existing storm drain facilities based on the municipal separate stormwater sewer systems permit and is enforced on all new developments that discharge directly into the County's storm drain system. Any proposed drainage improvements of County-owned storm drain facilities such as catch basins and storm drain lines require the approval/review from the County Flood Control District department. The City of Los Angeles has also adopted the Hydrology Manual as its basis of design for storm drain facilities.

(b) County of Los Angeles Stormwater Quality Management Program

The Los Angeles County NPDES Permit contains provisions for implementation of the Stormwater Quality Management Program by the Co-Permittees (collectively, the 84 Los Angeles County cities, including the City of Los Angeles, and Los Angeles County). The Stormwater Quality Management Program states that Permittees are required to implement the most effective combination of BMPs for stormwater/urban runoff pollution control. The objective of the Stormwater Quality Management Program is to reduce pollutants in urban stormwater discharges to the maximum extent practicable in order to attain water quality objectives and to protect the beneficial uses of receiving waters in Los Angeles County.

(c) Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties

As required by the California Water Code, the LARWQCB has adopted a plan entitled *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan). Specifically, the Basin Plan designates beneficial uses for surface waters and groundwater, sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's Antidegradation Policy, and describes implementation programs to protect all waters in the Los Angeles Region.[4] In addition, the Basin Plan incorporates (by reference) all applicable state and RWQCB plans and policies and other pertinent water quality policies and regulations. Those of other agencies are referenced in appropriate sections throughout the Basin Plan. The Basin Plan is a resource for the RWQCB and others who use water and/or discharge wastewater in the Los Angeles Region. Other agencies and organizations involved in environmental permitting and resource management activities also use the Basin Plan. The Basin Plan also provides valuable information to the public about local water quality issues.

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[3] *Los Angeles County Department of Public Works, Hydrology Manual, January 2006.*

[4] *LARWQCB, LARWQCB Basin Plan, www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/, accessed January 12, 2017.*

(d) Ballona Creek Watershed Management Master Plan

The Ballona Creek Watershed Management Master Plan, published in 2004, is an outgrowth of the efforts of the Ballona Creek Watershed Task Force, a stakeholder group formed in 2001 by the Los Angeles County Department of Public Works, the Santa Monica Bay Restoration Commission, the City of Los Angeles, and Ballona Creek Renaissance to collectively set forth a strategy to develop pollution control and habitat restoration actions that could achieve an ecologically healthy watershed. The Ballona Creek Watershed Management Master Plan provides an assessment of existing environmental conditions, establishes goals and objectives to achieve an ecologically healthy watershed, identifies methods to achieve specific water quality improvements, recognizes opportunities for habitat restoration, develops a community-based watershed monitoring plan, and identifies existing and future funding sources for plan implementation. With regard to individual development projects, the Ballona Creek Watershed Management Master Plan calls for implementation of BMPs to reduce contaminants in dry weather flows and stormwater flows and to reduce the volume of stormwater flows.

(e) City of Los Angeles Water Quality Compliance Master Plan for Urban Runoff

In 2009, the City of Los Angeles adopted the Water Quality Compliance Master Plan, a 20-year strategy for clean stormwater and urban runoff to reduce the pollution flowing into local rivers, creeks, lakes and beaches.[5] By promoting green infrastructure, the Water Quality Compliance Master Plan seeks a broad watershed-based perspective using green and natural solutions to improve water quality and maintain Los Angeles' compliance with current and emerging watering quality regulations. The Water Quality Compliance Master Plan includes the following:

- Describes the existing status of urban runoff management in Los Angeles and watershed management efforts by Los Angeles and other organizations;
- Identifies key issues for the future of urban runoff management;
- Provides strategic guidelines for improving the quality of Los Angeles' rivers, creeks, lakes, and ocean;
- Identifies opportunities for collaboration among City departments and with non-governmental organizations; and
- Describes how rainwater can be used beneficially to augment our water supply.

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[5] *City of Los Angeles, Stormwater Program, About Us, Water Quality Compliance Master Plan, www.lastormwater.org/about-us/water-quality-compliance-master-plan/, accessed May 24, 2016.*

(f) City of Los Angeles Proposition O

On November 2, 2004, City of Los Angeles voters passed Proposition O, a $500 million bond authorizing the City to fund projects that protect public health, capture stormwater for reuse and meet CWA requirements through removal and prevention of pollutants entering regional waterways.[6] A number of projects targeted at improving water quality have been authorized using Proposition O funds, including, but not limited to, the Temescal Canyon Park Stormwater BMP, Los Angeles Zoo Parking Lot, the Westchester Stormwater BMP, and the Echo Park Lake Rehabilitation Project. In addition, Proposition O funds were used for the Catch Basin Screen Cover and Insert Project, which provided for the installation of catch basin inserts and screen covers throughout the City beginning in 2005. Phase IV of the Catch Basin Screen Cover and Insert Project, which will retrofit catch basin inserts and screen covers not replaced in previous phases, as well as all state and county catch basins within the City, is expected to be completed in October of 2020.

(g) Los Angeles Municipal Code

Any proposed drainage improvements within the street right of way or any other property owned by, to be owned by, or under the control of the City requires the approval of a B-permit (Section 62.105, Los Angeles Municipal Code [LAMC]). Under the B-permit process, storm drain installation plans are subject to review and approval by the City of Los Angeles Department of Public Works Bureau of Engineering. Additionally, any connections to the City's storm drain system from a property line to a catch basin or a storm drain pipe requires a storm drain permit from the City of Los Angeles Department of Public Works, Bureau of Engineering.

Earthwork activities, including grading, are governed by the Los Angeles Building Code, which is contained in Chapter IX, Article 1 in the LAMC. Section 64.70 of the LAMC sets forth the City's Stormwater and Urban Runoff Pollution Control Ordinance. The ordinance prohibits the discharge of the following into any storm drain system:

- Any liquids, solids, or gases, which by reason of their nature or quantity are flammable, reactive, explosive, corrosive, or radioactive, or by interaction with other materials could result in fire, explosion, or injury;
- Any solid or viscous materials, which could cause obstruction to the flow or operation of the storm drain system;
- Any pollutant that injures or constitutes a hazard to human, animal, plant, or fish life, or creates a public nuisance;

[6] *LA Stormwater, Proposition O, www.lastormwater.org/green-la/proposition-o/, accessed May 24, 2016.*

- Any noxious or malodorous liquid, gas, or solid in sufficient quantity, either singly or by interaction with other materials, which creates a public nuisance, hazard to life, or inhibits authorized entry of any person into the storm drain system;

- Any medical, infectious, toxic, or hazardous material or waste.

In addition, unless otherwise permitted by a NPDES permit, the ordinance prohibits industrial and commercial developments from discharging untreated wastewater or untreated runoff into the storm drain system. Furthermore, the ordinance prohibits trash or any other abandoned objects/materials from being deposited, such that they could be carried into the storm drains. Lastly, the ordinance not only makes it a crime to discharge pollutants into the storm drain system and imposes fines on violators but also gives City public officers the authority to issue citations to or arrest business owners or residents who deliberately and knowingly dump or discharge hazardous chemicals or debris into the storm drain system.

(h) Low Impact Development

In October 2011, the City of Los Angeles passed its Low Impact Development (LID) Ordinance (Ordinance No. 181899), amending Chapter VI, Article 4.4, Sections 64.70.01 and 64.72 of the LAMC to expand the applicability of the existing SUSMP requirements by imposing rainwater LID strategies on projects that require building permits. The City's LID Ordinance was adopted in November 2011 and officially became effective on May 12, 2012.[7] The goal of LID practices is to remove nutrients, bacteria, and metals from stormwater while also reducing the quantity and intensity of stormwater flows. The City's LID Ordinance requires rainwater from either a 0.75-inch rainstorm or runoff from the 85th percentile, 24-hour storm event (whichever is greater) to be captured, infiltrated, and/or used on-site at most developments and redevelopments where more than 500 square feet of hardscape is added.

The City of Los Angeles adopted LID standards and practices in future developments and redevelopments to encourage the following:[8]

- Beneficial use of rainwater and urban runoff;

- Water quality improvement;

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[7] *LA Stormwater, Low Impact Development (LID) 2-Sided Brochure.*

[8] *LA Stormwater, Why did the city of Los Angeles adopt LID standards and practices?, www.lastormwater.org/green-la/low-impact-development/faqs/why-did-the-city-of-los-angeles-adopt-lid-standards-and-practices/, accessed January 12, 2017.*

- Rainwater harvesting;
- Reduction of off-site runoff and provide increased groundwater recharge;
- Reduction of erosion and hydrologic impacts downstream; and
- Enhancement of recreational and aesthetic values in our communities.

b. Existing Conditions

(1) Surface Water Hydrology

(a) Regional

The Project Site is located within the Ballona Creek Watershed in the County of Los Angeles and directly adjacent to the Marina del Rey Watershed. The Ballona Creek Watershed covers approximately 130 square miles in the coastal plain of the Los Angeles Basin. Its boundaries are the Santa Monica Mountains to the north, the Harbor Freeway (I-110) to the east, and the Baldwin Hills to the south. Ballona Creek flows as an open channel for just under 10 miles from mid-Los Angeles (south of Hancock Park) through Culver City, reaching the Pacific Ocean at Playa del Rey (Marina del Rey Harbor). The Estuary portion (from Centinela Avenue to the outlet) is soft bottomed, while the remainder of the creek is concrete lined. Ballona Creek is fed by a network of underground storm drains, which reaches north into Beverly Hills and West Hollywood. The average dry weather flow at the Ballona Watershed's terminus in Playa del Rey is 25 cubic feet per second. The average wet weather flow is ten times higher or more during large storms. The southern portion and the majority of the Project Site discharges to the Ballona Creek Watershed.

The northern portion of the Project Site discharges into the Marina del Rey Watershed. The watershed consists of the harbor water area, including the docks, back basins, Marina Beach, Oxford Retention Basin (Oxford Basin) and the land adjacent to the harbor back basins including portions of Los Angeles County unincorporated area parcels, streets, and other facilities. The harbor consists of the Main Channel and eight back basins (A-H). The Project Site discharges into back basin "E" which has impairments to water quality due to poor circulation and tidal.

(b) Local

Stormwater runoff is collected from the Project Site and conveyed through off-site storm drain facilities along the public streets surrounding the Project Site. Stormwater flows northwest to Maxella Avenue or southeast and west to ribbon gutters within adjacent parking lots off-site that ultimately connect to a channel under State Route 90. The storm

drain facilities along Maxella Avenue are owned and maintained by the Los Angeles County Flood Control District (LACFCD). The storm drain along Maxella Avenue flows in a southwesterly direction and connects to the storm drain along Berkley Drive, which flows westerly and discharges into the Marina del Rey Harbor. The southeast and southwesterly flows ultimately discharge into Ballona Creek located to the southeast.

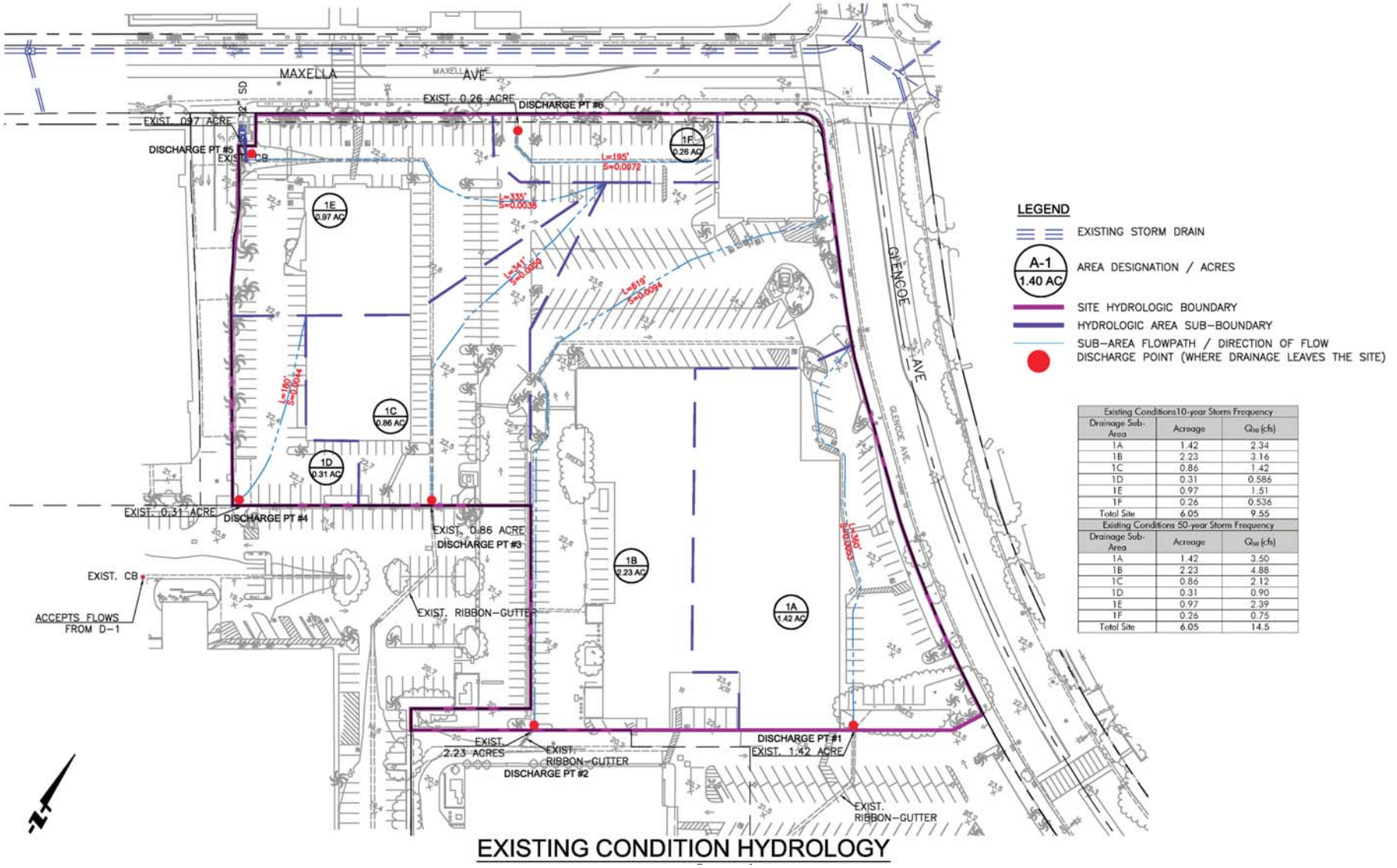
(c) On-Site

The Project Site is currently built out with high impervious conditions associated with large expanses of surface parking, buildings, and limited landscaping. As described above, a portion of the Project Site drains to Maxella Avenue and the remainder of the Project Site drains to ribbon gutters within adjacent parking lots off-site that ultimately connect to a channel under State Route 90. The Project Site drains to various discharge points, including the western portion of the property, the eastern corner of the property, and the two south corners of the property. Existing underground drainage facilities within the Project Site include an inlet and water quality structure at the northwest corner of the Project Site, near the hotel driveway, which collects and conveys drainage from the northwest portion of the Project Site. The drainage on the other portions of the Project Site is conveyed off-site via surface gutters.

As shown in Figure IV.F-1 on page IV.F-14, the Project Site has been divided into six drainage subareas (referred to herein as drainage subareas 1A through 1F) served by various storm drains both on- and off-site. An existing Los Angeles County Department of Public Works (LACDPW) 45-inch storm drain on Maxella Avenue (north side of roadway) drains in a westerly direction from Glencoe Avenue toward Del Rey Avenue. This storm drain currently collects drainage from an on-site inlet, located at the northwest corner of the Project Site. The 45-inch storm drain ultimately drains to the northern portion of the Marina del Rey harbor at Basin E. As shown in Figure IV.F-1, drainage subareas 1E and 1F drain in a westerly direction to catch basins and connect to the 45-inch storm drain along Maxella Avenue.

There are also two existing 18-inch storm drains and one existing 24-inch storm drain beyond the southern end of the Project Site along State Route 90. Runoff from drainage subarea 1A flows off-site through a system of gutters and connects to the 24-inch storm drain. Drainage flows from drainage subareas 1B and 1C flow to the two 18-inch storm drains along State Route 90. Drainage flows from drainage subarea 1D flow southwest off-site to a system of gutters ultimately discharging to the 54-inch City drain off-site along Route 1/Pacific Coast Highway.

Table IV.F-1 on page IV.F-15 provides 10-year and 50-year storm frequency flows for the Project Site from each drainage subarea.



Existing Conditions 10-year Storm Frequency		
Drainage Sub-Area	Acreage	Q_{10} (cfs)
1A	1.42	2.34
1B	2.23	3.16
1C	0.86	1.42
1D	0.31	0.586
1E	0.97	1.51
1F	0.26	0.536
Total Site	6.05	9.55
Existing Conditions 50-year Storm Frequency		
Drainage Sub-Area	Acreage	Q_{50} (cfs)
1A	1.42	3.50
1B	2.23	4.88
1C	0.86	2.12
1D	0.31	0.90
1E	0.97	2.39
1F	0.26	0.75
Total Site	6.05	14.5

EXISTING CONDITION HYDROLOGY

Figure IV.F-1
Existing Hydrology

Source: Fuscoe Engineering, 2017.

Table IV.F-1
Existing Drainage Stormwater Runoff Calculations

Drainage Area	Area (acres)	% Impervious	10-Year Storm		50-Year Storm	
			Time of Conc. (min)	Volumetric Flow Rate Q_{10} (cfs)	Time of Conc. (min)	Volumetric Flow Rate Q_{50} (cfs)
1A	1.42	96%	8	2.34	7	3.50
1B	2.23	96%	11	3.16	9	4.88
1C	0.86	96%	8	1.42	7	2.12
1D	0.31	96%	6	0.586	5	0.90
1E	0.97	96%	9	1.51	7	2.39
1F	0.26	96%	5	0.536	5	0.75
Total	**6.05**	**96%**	**—**	**9.55**	**—**	**14.50**

Source: Fuscoe Engineering, 2017.

(2) Surface Water Quality

(a) Regional

As discussed above, the Project Site is located within the Ballona Creek Watershed, although the northern portion of the Project Site discharges into the Marina del Rey Watershed. The Ballona Creek Watershed includes the cities of Beverly Hills and West Hollywood; portions of the cities of Los Angeles, Culver City, Inglewood, and Santa Monica; unincorporated areas of Los Angeles County; and areas under the jurisdiction of Caltrans. The Marina del Rey Watershed includes runoff from portions of the cities of Culver City, Los Angeles, as well as portions of unincorporated areas of Los Angeles County. According to the Water Resources Technical Report included in Appendix F of this Draft EIR, both the Ballona Creek Watershed and the Marina del Rey Watershed are impaired.

(i) Beneficial Uses in the Ballona Creek and Marina del Rey Watersheds

The existing and potential beneficial uses for the waters within the Ballona Creek Watershed, where the majority of surface water flows from the Project Site ultimately discharge, include navigation; municipal and domestic supply; contact and non-contact water recreation; commercial and sport fishing; warm freshwater habitat; estuarine habitat; marine habitat; wildlife habitat; rare, threatened, or endangered species habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; and shellfish harvesting. The existing and potential beneficial uses for the waters within the Marina del Rey Watershed, where surface water flows from the northwestern portion of the Project

Site ultimately discharge, include navigation; commercial and sport fishing; marine habitat; wildlife habitat; and shellfish harvesting.

(ii) Constituents of Concern

Pursuant to Section 303(d) of the federal Clean Water Act, the state and RWQCBs identify impaired bodies of water that do not meet water quality standards and prioritizes and schedules them for development of Total Maximum Daily Loads. A Total Maximum Daily Load specifies the maximum amount of a pollutant that a water body can receive and still meet water quality standards. Those facilities and activities that are discharging into the water body, collectively, must not exceed the Total Maximum Daily Load.

Constituents of concern listed for the Ballona Creek estuary under California's Clean Water Act Section 303(d) List include Cadmium, Chlordane, Coliform Bacteria, Copper, Dichlorodiphenyltrichloroethane (DDT), Lead, Polycyclic Aromatic Hydrocarbons (PAHs), Polychlorinated Biphenyls (PCBs), Shellfish Harvesting Advisory, Silver, and Zinc.

Constituents of concern listed for the Marina del Rey Harbor include Chlordane, Copper, fish consumption advisory, indicator bacteria, Lead, PCBs, and Zinc.

(b) Local

In general, urban stormwater runoff occurs during and shortly following precipitation events. The volume of water ultimately directed into the drainage system depends on such things as the intensity and duration of the rainstorm and soil moisture. In addition to sediment, contaminants that may be found in stormwater from developed areas include trash, bacteria, metals, nutrients, and potentially, organics and pesticides. The source of contaminants is diffuse and includes all areas where precipitation falls, as well as the air it falls through. Therefore, contaminants on roads, maintenance areas, parking lots, and building tops, which are not usually contained in dry weather discharges, may be carried with rainfall drainage into the drainage system. The City has installed catch basins to capture debris before entering the storm drain system. In addition, the City conducts routine street cleaning operations as well as periodic cleaning and maintenance of catch basins to reduce stormwater pollution within the City.

(c) On-Site

Based on the existing operations within the Project Site, the on-site runoff likely contains the following pollutants of concern: total suspended solids, oil and grease, heavy metals, nutrients, pesticides, and trash.

The Project Site currently includes one structural pretreatment BMP in the drive aisle at the northwest corner. The BMP is a CDS hydrodynamic separator unit which uses swirl concentration and continuous deflective separation to screen, separate, and trap trash, debris, sediment, and hydrocarbons from stormwater runoff. These systems are specified as pretreatment BMPs to primary BMPs because they only remove larger items and particles from stormwater and cannot address finer pollutants like nutrients and metals. Therefore, these systems do not fully satisfy current water quality requirements. In addition to the CDS unit, there are also a range of non-structural BMPs and environmental water quality policies that are currently used at the Project Site to minimize the impact of pollutant sources. These include general housekeeping practices such as regular trash collection and street sweeping; proper storage of hazardous materials and wastes; and substituting environmentally friendly products for environmentally hazardous products, such as soaps, solvents, and pesticides. In addition, stormwater runoff from existing pervious surfaces is naturally treated to some extent by existing vegetation and the absorptive properties of the existing soils.

(3) Groundwater Hydrology

(a) Regional

Groundwater use for domestic water supply is a beneficial use of groundwater basins in Los Angeles County. The City of Los Angeles overlies the Los Angeles Coastal Plain Groundwater Basin. The Los Angeles Coastal Plain Groundwater Basin comprises the Hollywood, Santa Monica, Central, and West Coast Basins. 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 freshwater along specific seawater barriers to prevent the intrusion of salt water.

(b) Local

Within the Los Angeles Coastal Plain Groundwater Basin, the Project Site specifically overlies the Santa Monica Subbasin, which is located in the northwestern part of the Los Angeles Coastal Plain Groundwater Basin. The Santa Monica Subbasin is bounded on the north by impermeable rocks of the Santa Monica Mountains, the Newport-Inglewood fault to the east, the Pacific Ocean to the west, and the Ballona Escarpment to the south. Extensive faulting within the Santa Monica Subbasin further separates the Subbasin into five subbasins. These include the Arcadia, Olympic, Coastal, Charnock, and Crestal subbasins. The Santa Monica Subbasin is a natural groundwater basin that encompasses a surface area of approximately 50.2 square miles and is estimated to have a total storage capacity of approximately 1.1 million acre-feet. Replenishment of

groundwater in the Santa Monica Basin is mainly by percolation of precipitation and surface runoff onto the subbasin from the Santa Monica Mountains.

(c) On-Site

As previously noted, the Project Site is comprised of mostly impervious surfaces (96 percent). Accordingly, there is currently minimal groundwater recharge potential within the Project Site. Data from the California Division of Mines and Geology indicate the historic high groundwater level near the Project Site is approximately 5 to 10 feet below ground surface. Groundwater data collected from geotechnical investigations adjacent to the Project Site encountered groundwater at a depth of approximately 17 feet below ground surface. There are no groundwater production wells or public water supply wells within the Project Site or in the vicinity of the Project Site.

(4) Groundwater Quality

(a) Regional

In general, due to historical activities and practices, groundwater quality in the City of Los Angeles has been substantially degraded. The degradation of regional groundwater is a result of seepage into the subsurface of fertilizers and pesticides from agricultural uses, nitrogen and pathogenic bacteria from septic tanks, and various hazardous substances from leaking aboveground and underground storage tanks and industrial-type operations.

As stated above, the City of Los Angeles overlies the Los Angeles Coastal Plain Groundwater Basin. This basin falls under the jurisdiction of the LARWQCB. According to LARWQCB's Basin Plan, water quality objectives applying to all ground waters of the region include those concerning Bacteria, Chemical Constituents and Radioactivity, Mineral Quality, Nitrogen (Nitrate, Nitrite), and Taste and Odor.

(b) Local

As stated above, the Project Site specifically overlies the Santa Monica Subbasin within the Los Angeles Coastal Plain Groundwater Basin. Based upon LARWQCB's Basin Plan, constituents of concern listed for the Los Angeles Coastal Plain Groundwater Basin include Chloride and organic and inorganic pollutants.

(c) On-Site

As discussed above, the Project Site currently includes one structural BMP that partially treats stormwater runoff from existing impervious surfaces, such as building roof areas and pavements. There are also a range of non-structural BMPs and environmental water qualities that are currently utilized at the Project Site to minimize the impact of

pollutant sources. These include general housekeeping practices such as regular trash collection, spill prevention and response activities where applicable; proper storage of hazardous materials and wastes; and substituting environmentally friendly products for environmentally hazardous products, such as soaps, solvents, and pesticides. In addition, stormwater runoff from the minimal existing pervious surfaces such as the landscaped areas and lawns is naturally treated to some extent by existing vegetation and the absorptive properties of the existing soils. Based on the existing operations within the Project Site, the on-site runoff likely contains the following pollutants of concern: total suspended solids, oil and grease, heavy metals, nutrients, pesticides, and trash.

Though it is possible for surface water borne contaminants to percolate into groundwater and affect groundwater quality, as the Project Site is currently primarily impervious, no appreciable infiltration of potential contaminants is expected to occur. Additionally, the good housekeeping practices described above and compliance with all existing hazardous waste regulations further reduce this potential. Therefore, groundwater quality is not impacted by existing activities at the Project Site.

Other types of risk such as underground storage tanks have a greater potential to impact groundwater. No underground storage tanks are currently operated on-site.

(5) Flood Zone

Based on the Federal Emergency Management Agency Flood Insurance Rate Maps for the Project Site, the Project Site is not located within a 100-year flood zone. The Project Site is specifically designated as flood hazard area—Zone X, which is defined as "areas determined to be outside the 0.2 percent annual chance floodplain."

3. Project Impacts

a. Thresholds of Significance

In accordance with the State CEQA Guidelines Appendix G, the Project would have a significant impact related to hydrology and water quality if it would:

Threshold (a): Violate any water quality standards or waste discharge requirements; or

Threshold (b): 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); or

Threshold (c): 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; or

Threshold (d): 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 that would result in flooding on- or off-site; or

Threshold (e): 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; or

Threshold (f): Otherwise substantially degrade water quality; or

Threshold (g): Place housing within a 100-year flood plain as mapped on federal Flood Hazard Boundary or Flood Insurance Rate Maps or other flood hazard delineation maps; or

Threshold (h): Place within a 100-year flood plain structures which would impede or redirect flood flows; or

Threshold (i): Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or

Threshold (j): Inundation by seiche, tsunami, or mudflow; or

Threshold (k): Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

For this analysis, the Appendix G Thresholds listed above are relied upon. The analysis utilizes factors and considerations identified in the City's 2006 L.A. CEQA Thresholds Guide, as appropriate, to assist in answering the Appendix G Threshold questions.

The L.A. CEQA Thresholds Guide identifies the following criteria to evaluate impacts to hydrology and water quality:

(1) Surface Water Hydrology

- *Cause flooding during the projected 50-year developed storm event which would have the potential to harm people or damage property or sensitive biological resources;*

- *Substantially reduce or increase the amount of surface water in a water body; or*

- *Result in a permanent, adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of water flow.*

(2) Surface Water Quality

- Result in discharges that would create pollution, contamination or nuisance as defined in Section 13050 of the California Water Code or that cause regulatory standards to be violated, as defined in the applicable NPDES stormwater permit or Water Quality Control Plan for the receiving water body.

As defined in the California Water Code:

- "Pollution" means an alteration of the quality of the waters of the state to a degree which unreasonably affects either of the following: (1) the waters for beneficial uses; or (2) facilities which serve these beneficial uses. Pollution may include contamination.

- "Contamination" means an impairment of the quality of the waters of the state by waste to a degree which creates a hazard to the public health through poisoning or through the spread of diseases. Contamination includes any equivalent effect resulting from the disposal of waste whether or not waters of the state are affected.

- "Nuisance" means anything which meets all of the following requirements: (1) is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property so as to interfere with the comfortable enjoyment of life or property; (2) affects at the same time an entire community or neighborhood, or any considerable number of persons although the extent of the annoyance or damage inflicted upon individuals may be unequal; and (3) occurs during or as a result of the treatment or disposal of wastes.

(3) Groundwater

- Change potable water levels sufficiently to:

  – Reduce the ability of a water utility to use the groundwater basin for public water supplies, conjunctive use purposes, storage of imported water, summer/winter peaking, or to respond to emergencies and drought;

  - Reduce yields of adjacent wells or well fields (public or private); or
  - Adversely change the rate or direction of flow of groundwater;
- Result in demonstrable and sustained reduction of groundwater recharge capacity;
- Affect the rate or change direction of movement of existing contaminants;
- Expand the area affected by contaminants;
- Result in an increased level of groundwater contamination (including that from direct percolation, injection or salt water intrusion); or
- Cause regulatory water quality standards at an existing production well to be violated, as defined in the CCR, Title 22, Division 4, Chapter 15 and in the Safe Drinking Water Act.

b. Methodology

The analysis is based on the *Water Resources Technical Report* prepared by Fuscoe Engineering in March 2017. This report is included as Appendix F of this Draft EIR.

(1) Surface Water Hydrology

The surface water hydrology analysis evaluates the change in surface water runoff patterns and quantity for the Project Site due to the construction and operation of the Project, and the impact of these changes on the existing downstream stormwater system. As discussed in the Regulatory Framework Section above, the City has adopted the Los Angeles County Department of Public Works Hydrology Manual as its basis of design for storm drainage facilities. The Hydrology Manual requires projects to have drainage facilities to carry runoff from a 10-year frequency storm. As described below, the *L.A. City CEQA Thresholds Guide*, however, establishes the 50-year frequency design storm event as the threshold to evaluate potential impacts on surface water hydrology. Thus, to determine the ability of the existing storm drain infrastructure to accommodate any changes in runoff flows associated with the Project, potential flows from each drainage area during a 10-year and a 50-year frequency design storm event was evaluated.

As part of the surface water hydrologic analysis, stormwater runoff generated from the Project site was quantified using the Modified Rational Method.[9] The tributary drainage

[9] *The equation used in the Modified Rational Method is Q=C x I x A, where "Q" equals the volumetric flow, "C" equals the runoff coefficient, "I" equals the rainfall intensity, and "A" equals the tributary drainage area.*

area was determined by delineating high points to create drainage boundaries and any subareas. The rainfall intensity was determined using isohyets rainfall values according to the Los Angeles County Department of Public Works Hydrology Manual. The Modified Rational Method assumes that a steady, uniform rainfall rate will produce maximum runoff when all parts of the basin area are contributing to outflow. This occurs when the storm event lasts longer than the time of concentration. The time of concentration (Tc) is the time it takes for rain in the most hydrologically remote part of the basin area to reach the outlet. The method assumes that the runoff coefficient (C) remains constant during a storm. The runoff coefficient is a function of both the soil characteristics and the percentage of impervious surfaces in the drainage area.

As part of its Hydrology Manual, the Los Angeles County Department of Public Works developed a time of concentration calculator, HydroCalc, to automate time of concentration, peak runoff rate, and total volume calculations. HydroCalc was used to calculate the stormwater peak runoff flow rate for the Project Site with implementation of the Project by evaluating the changes within the individual drainage areas.

(2) Surface Water Quality

The analysis of surface water quality impacts identifies the types of pollutants associated with construction and operation of the Project and considers their potential effects on surface water quality.

(3) Groundwater

The analysis of the Project's potential impacts associated with groundwater was based on a review of existing groundwater conditions and groundwater uses and an evaluation of the potential impacts for construction and operation of the Project to affect those uses and groundwater quality. Construction and operational activities evaluated include any potential dewatering activities during construction; changes in groundwater recharge based on proposed land use changes; infiltration capacity of the underlying soil; permanent dewatering; potential soil or shallow groundwater exposure to construction materials, wastes, or spilled materials, handling and storage of hazardous materials; and any potential groundwater remediation activities.

c. Analysis of Project Impacts

(1) Project Design Features

No specific project design features are proposed with regard to hydrology and water quality.

(2) Project Impacts

Threshold (a): Would the Project violate any water quality standards or waste discharge requirements?

(a) Surface Water Quality

(i) Construction

Construction activities such as earth moving, maintenance/operation of construction equipment, and handling/storage/disposal of materials could contribute to pollutant loading in stormwater runoff. However, as Project construction would disturb more than one acre of soil, the Project would be required to obtain coverage under the NPDES Construction General Permit. In accordance with the requirements of the permit, the Project would prepare and implement a site-specific SWPPP adhering to the California Stormwater Quality Association BMP Handbook. The SWPPP would specify BMPs to be used during construction. BMPs would include but not be limited to: erosion control, sediment control, non-stormwater management, and materials management.

Construction activities for the Project would include excavation with depths of 28 feet below ground surface. Based on geotechnical investigations adjacent to the Project Site, groundwater was encountered at 17 feet below ground surface. Therefore, the Project is expected to require dewatering during construction. Discharges from dewatering operations can contain high levels of fine sediments, which if not properly treated, could lead to exceedance of the NPDES requirements. During construction, 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.

With the implementation of site-specific BMPs included as part of the SWPPP, the Project would reduce or eliminate the discharge of potential pollutants from stormwater runoff. In addition, the Project Applicant would be required to comply with City grading permit regulations, which require necessary measures, plans (including a wet weather erosion control plan if construction occurs during the rainy season), and inspection to reduce sedimentation and erosion. **Therefore, with compliance with NPDES requirements and City of Los Angeles grading permit regulations, construction of the Project would not result in discharge that would violate any water quality standard or waste discharge requirements. Thus, construction-related impacts on surface water quality would be less than significant, and no mitigation measures are required.**

(ii) Operation

Operation of the Project would introduce sources of potential water pollution that are typical of commercial developments (e.g., cleaning solvents, pesticides for landscaping, and petroleum products associated with circulation areas). Stormwater runoff from precipitation events could also potentially carry urban pollutants into municipal storm drains. The Project would implement BMPs for managing stormwater runoff in accordance with the current City of Los Angeles LID Ordinance requirements. Given that there is one pretreatment BMP on-site that only provides partial treatment of stormwater runoff, additional BMP implementation associated with the Project would result in improved surface water quality of the receiving waters. Specifically, based on the analysis included in the Water Resources Technical Report, infiltration was determined to be feasible for the Project Site. The proposed LID design 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, per the City's LID Ordinance. The Project BMPs would control stormwater runoff with no increase in runoff resulting from the Project. Based on the design of the Project, a combination of gravity flows, pumps and splitter boxes would be used to route flows to either the infiltration BMP or to the adjacent streets. **Due to the incorporation of the LID BMPs, operation of the Project would not result in discharges that would violate any water quality standard or waste discharge requirements. Operational impacts to surface water quality would be less than significant, and no mitigation measures are required.**

(b) Groundwater Quality

(i) Construction

As discussed above, any discharge of groundwater during construction of the Project would occur pursuant to, and comply with, the applicable NPDES permit or industrial user sewer discharge permit requirements. Pursuant to such requirements, the groundwater extracted would be chemically analyzed to determine the appropriate treatment and/or disposal methods.

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 to be released 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 downstream. In addition, as there are no existing groundwater production

wells or public water supply wells within 1 mile of the Project Site, construction activities would not be anticipated to affect existing wells.

Based on the above, construction of the Project would not result in discharge that would violate any groundwater quality standard or waste discharge requirements. Therefore, construction-related impacts on groundwater quality would be less than significant, and no mitigation measures are required.

(ii) Operation

The Project does 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, or a municipal supply well or spreading ground facility. The Project does not include surface or subsurface application or introduction of potential contaminants or waste materials during construction or operation. The Project is not anticipated to result in releases or spills of contaminants that could reach a groundwater recharge area or spreading ground or otherwise reach groundwater through percolation. **Therefore, operation of the Project would not result in discharges that would violate any groundwater quality standard or waste discharge requirements. The Project's potential impact on groundwater quality during operation would be less than significant, and no mitigation measures are required.**

Threshold (b): Would the Project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater 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)?

(a) Construction

As previously discussed, construction activities for the Project would include excavation with depths of 28 feet below ground surface. Based on geotechnical investigations adjacent to the Project Site, groundwater was encountered at 17 feet below ground surface. Therefore, dewatering operations are expected during construction. In the event dewatering is required during Project construction, a temporary dewatering system would be installed and operated in accordance with General NPDES requirements. Any discharge of groundwater during construction of the Project would occur pursuant to, and comply with, the applicable NPDES permit or industrial user sewer discharge permit requirements. In addition, if groundwater is encountered and is not contaminated, a portion of the extracted non-contaminated groundwater is proposed to be reused on-site for dust control, which would keep a portion of the dewatered groundwater on-site. Furthermore, no water supply wells are located at the Project Site or within 1 mile of the Project Site that

could be impacted by construction, nor would the Project include the construction of water supply wells. **Thus, the Project would not substantially deplete groundwater supplies in a manner that would result in a net deficit in aquifer volume or permanent lowering of the local groundwater table. Impacts on groundwater supplies during construction of the Project would be less than significant, and no mitigation measures are required.**

(b) Operation

As discussed above, the Project Site is currently 96 percent impervious, and as such, minimal groundwater recharge takes place. The Project's increase in pervious area along with the proposed infiltration system would improve the groundwater recharge capacity of the Project Site compared to existing conditions. In addition, the subterranean levels of the Project are to be designed such that they are able to withstand hydrostatic forces and incorporate comprehensive waterproofing systems in accordance with current industry standards and construction methods and the recommendations set forth in the Geotechnical Report included in Appendix C of this Draft EIR. As such, permanent dewatering operations are not expected. **Therefore, the Project would not substantially deplete groundwater supplies in a manner that would result in a net deficit in aquifer volume or permanent lowering of the local groundwater table. Impacts on groundwater supplies during operation of the Project would be less than significant, and no mitigation measures are required.**

Threshold (c): Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Threshold (d): Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off site?

(a) Construction

Construction activities for the Project would include excavation and the removal of soil. These activities have the potential to temporarily alter existing drainage patterns and flows on the Project Site by exposing the underlying soils, modifying flow direction, and making the Project Site temporarily more permeable. Also, exposed and stockpiled soils could be subject to erosion and conveyance into nearby storm drains during storm events. In addition, on-site watering activities to reduce airborne dust could contribute to pollutant loading in runoff. However, as the construction site would be greater than one acre, the

Project 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 Site so runoff does not impact off-site drainage facilities or receiving waters. Construction activities are temporary and flow directions and runoff volumes during construction would be controlled. In addition, the Project would be required to comply with all applicable City 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, construction of the Project would not substantially alter the Project Site drainage patterns in a manner that would result in substantial erosion, siltation, or flooding on- or off-site. Construction-related impacts to hydrology would be less than significant, and no mitigation measures are required.**

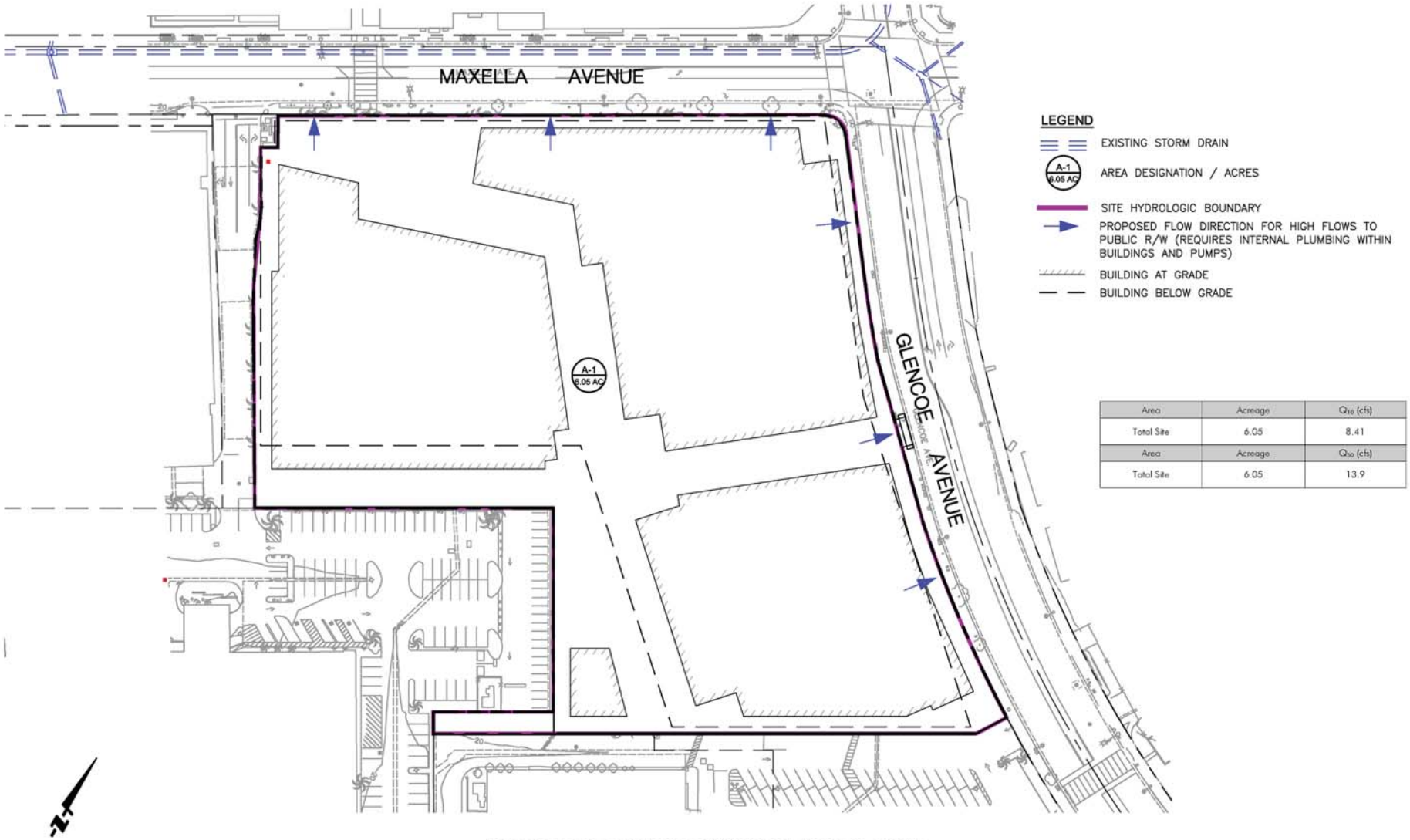
(b) Operation

As described above, the Project Site is developed with existing buildings and hardscape with approximately 96 percent impervious surfaces. The Project would include new buildings surrounded by hardscape and landscape and, upon buildout, the post-Project condition would be approximately 88 percent impervious. As such, the overall flow rate would be reduced compared to existing conditions. **Therefore, the Project would not substantially alter the existing drainage pattern of the Project Site or surrounding area such that substantial erosion, siltation, or on-site or off-site flooding would occur. Operational impacts to hydrology would be less than significant, and no mitigation measures are required.**

Threshold (e): Would the Project 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?

The Project would decrease the percentage of impervious area. As described above, the Project Site is developed with existing buildings and hardscape with approximately 96 percent impervious surfaces. The Project would include new buildings surrounded by hardscape and landscape and, upon buildout, the post-Project condition would be approximately 88 percent impervious.

Figure IV.F-2 on page IV.F-29 illustrates the proposed on-site drainage conditions. In addition, Table IV.F-2 on page IV.F-30 shows the existing and proposed 10-year and



Area	Acreage	Q_{10} (cfs)
Total Site	6.05	8.41
Area	Acreage	Q_{50} (cfs)
Total Site	6.05	13.9

Figure IV.F-2
Proposed Hydrology

Source: Fuscoe Engineering, 2017.

Table IV.F-2
Proposed Drainage Stormwater Runoff Calculations Summary

Area	Acreage	Pre-Project % Impervious	Post-Project % Impervious	Pre-Project Q_{10} (cfs)	Post-Project Q_{10} (cfs)	Pre-Project Q_{50} (cfs)	Post-Project Q_{50} (cfs)
Total Project Site	6.05	96%	88%	9.55	8.41	14.5	13.9

Q_x (cfs) = volumetric flow rate measured in cubic feet per second
Source: Fuscoe Engineering, 2017.

50-year storm event peak flow rates. As shown, a comparison of the pre- and post-peak flow rates indicates a slight decrease in stormwater runoff from the Project Site.

As discussed in the Water Resources Technical Report, all Project Site flows are anticipated to be discharged to either Glencoe Avenue, Maxella Avenue or split between the two streets. Low flows would be routed to infiltration BMPs. To determine potential impacts to either of these streets, street capacity calculations for both Glencoe Avenue and Maxella Avenue were performed to determine if either street could handle the Project's flows. The street capacity calculations for both Glencoe Avenue and Maxella Avenue determined that both roadways can handle the proposed 10-year flows associated with the Project, along with street flows already in the roadways. In Maxella Avenue, the street capacity of 11 cubic feet per second is sufficient to handle the total flows from the Project Site (8.4 cubic feet per second), along with existing street flows of 1.2 cubic feet per second. In Glencoe Avenue, the street capacity of 24 cubic feet per second is sufficient to handle the flows from the Project Site (8.4 cubic feet per second), along with the existing street flows of 1.2 cubic feet per second.

Based on the above, the Project would not impact existing storm drain infrastructure serving the Project Site and runoff would continue to follow the same discharge paths and drain to the same storm systems. **Consequently, the Project would not create runoff which would exceed the capacity of existing or planned drainage systems. Therefore, potential impacts to site surface water hydrology would be less than significant, and no mitigation measures are required.**

Threshold (f): Would the Project otherwise substantially degrade water quality?

As discussed above, the Project would implement BMPs to filter, treat, and reduce stormwater pollutants prior to discharge from the Project Site, in accordance with the City's LID requirements and SWPPP. Non-stormwater runoff associated with typical operations

of the Project Site would also be filtered to some extent by the BMPs (e.g., through the use of biofiltration) provided on-site prior to discharging from the Project Site. **Therefore, the Project would not otherwise substantially degrade water quality. Impacts would be less than significant, and no mitigation measures are required.**

Threshold (g): Would the Project place housing within a 100-year flood plain as mapped on federal Flood Hazard Boundary or Flood Insurance Rate As evaluated in the Initial Study prepared for the Project, provided in Appendix A of this Draft EIR, the Project Site is not located within a 100-year flood plain as mapped by the Federal Emergency Management Agency. As such, the Project would not place housing within a 100-year flood plain or place structures that would impede or redirect flood flows within a 100-year flood plain. Therefore, no significant impact would occur regarding 100-year flood plains hazards, and no further discussion of these issues is necessary.

Threshold (h): Would the Project place within a 100-year flood hazard area structures which would impede or redirect flood flows

As evaluated in the Initial Study prepared for the Project, provided in Appendix A of this Draft EIR, the Project Site is not located within a 100-year flood plain as mapped by the Federal Emergency Management Agency. **As such, the Project would not place housing within a 100-year flood plain or place structures that would impede or redirect flood flows within a 100-year flood plain. Therefore, no impact would occur regarding 100-year flood plains hazards, and no mitigation measures are required.**

Threshold (i) Would the Project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

The Safety Element of the City of Los Angeles General Plan does not map the Project Site as being located within a flood control basin or within a potential inundation area. **Therefore, the Project would not 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. No impacts would occur, and no mitigation measures are required.**

Threshold (j): Would the Project expose people or structures to inundation by seiche, tsunami, or mudflow?

As further discussed in the Initial Study, the Project Site is located approximately 0.35 mile east of the Pacific Ocean and the Safety Element of the City of Los Angeles General Plan does not map the Project Site as being located within an area potentially

affected by a tsunami. In addition, the Project Site is not positioned downslope from an area of potential mudflow. Therefore, no seiche, tsunami, or mudflow events are expected to impact the Project Site. **Accordingly, the Project would not expose people or structures to inundation by seiche, tsunami, or mudflow. No impacts would occur, and no mitigation measures are required.**

d. Cumulative Impacts

(1) Surface Water

(a) Water Quality

Future growth in the Ballona Creek Watershed and the Marina del Rey Watershed would be subject to NPDES requirements relating to water quality for both construction and operation. In addition, since the Project Site is located in a highly urbanized area, future land use changes or development are not likely to cause substantial changes in 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 Site (which is currently not fully treated under existing water quality regulations before being discharged). Also, it is anticipated that the Project and other future development projects would be subject to LID requirements and implementation of measures to comply with Total Maximum Daily Loads. Increases in regional controls associated with other elements of the municipal separate stormwater sewer systems permit would improve regional water quality over time. Therefore, since the Project does not have an adverse impact and through compliance with all applicable laws, rules and regulations, cumulative impacts to surface water quality would be less than significant.

(b) Hydrology

The geographic context for the cumulative impact analysis on surface water hydrology is the Ballona Creek Watershed and the Marina del Rey Watershed. The Project in conjunction with forecasted growth in the Ballona Creek Watershed through 2023 could cumulatively increase stormwater runoff flows. However, as noted above, the Project would not have an adverse impact on stormwater flows. Also, in accordance with City requirements, related projects and other future development projects would be required to implement BMPs to manage stormwater in accordance with LID guidelines. 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 is available to accommodate stormwater runoff. Therefore, potential cumulative impacts associated with the Project on surface water hydrology would be less than significant.

(2) Groundwater

(a) Water Quality

Future growth in the Los Angeles Coastal Plain would be subject to LARWQCB requirements relating to groundwater quality. In addition, since the Project Site is located in a highly 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 an adverse impact on groundwater quality. Furthermore, it is anticipated that the Project and other future development projects would also be subject to LARWQCB requirements and implementation of measures to comply with Total Maximum Daily Loads. Therefore, since the Project would not have an adverse impact on groundwater quality, cumulative impacts to groundwater quality would be less than significant.

(b) Hydrology

Cumulative groundwater hydrology impacts could result from the overall utilization of groundwater basins located in proximity to the Project Site and other related projects in the vicinity of the Project Site. In addition, interruptions to existing hydrology flow by dewatering operations of groundwater would have the potential to affect groundwater levels. The purpose of dewatering operations is for the protection of both existing and proposed building structures and temporary groundwater pumping would be limited to the level necessary for implementation of the Project. The dewatering system used during Project construction 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 Site, 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 within 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 project requires 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. Based on the above, cumulative impacts to groundwater hydrology would be less than significant.

e. Mitigation Measures

As discussed above, with implementation of site-specific BMPs and compliance with applicable NPDES permits and requirements, the Project would result in less than significant impacts to hydrology and water quality during construction and operation. No mitigation measures would be required.

f. Level of Significance After Mitigation

Impacts to hydrology and water quality would be less than significant.