IV. Environmental Impact Analysis

G. Hydrology, Water Quality, and Groundwater

1. Introduction

This section analyzes the Project's potential impacts with regard to hydrology, water quality, and groundwater. This analysis is based on the *Hydrology & Water Quality Technical Report (Based on 50-Year Storm Design) for John Anson Ford Theatres Project* (Hydrology and Water Quality Report) prepared by Mollenhauer in March 2014. The Hydrology and Water Quality Report is included as Appendix I of this Draft EIR.

2. Environmental Setting

a. Regulatory Framework

(1) Federal

(a) 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 sets forth a number of objectives in order to achieve the above-mentioned goals, including 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

[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.*

Quality Control Board (RWQCB) are the primary state agencies responsible for implementing the Clean Water 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. A 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. 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 (CSMP), and sediment basin design calculations; for projects located outside of a Phase I or Phase II permit area, completing a post-construction water balance calculation for hydromodification controls; 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 (NALs) set by the Construction General Permit. In addition to regulating non-stormwater discharges, the CWA 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 CWA requires identifying and listing that water body as "impaired." Once a water body has been deemed impaired, a Total Maximum Daily Load (TMDL) must be established for the pollutant(s) or flows causing the impairment. A TMDL 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 TMDL. The United States Environmental Protection

Agency (USEPA) oversees the 303(d) program and either the USEPA or the SWRCB establishes the TMDL 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 Anti-Degradation Policy

The federal Anti-Degradation Policy requires states to develop statewide anti-degradation policies and identify methods for implementing them.[2] Pursuant to the CFR, state anti-degradation 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 Anti-Degradation Policy.

(2) State

(a) 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. This Act includes provisions to address the requirements of the Clean Water Act, including NPDES permitting, dredge and fill programs, and civil and administrative penalties. Regulations promulgated as a result of the Porter-Cologne Act are codified in Sections 13000–14958 of the California Water Code. The Porter-Cologne Act is broad in scope and addresses issues relating to the conservation, control, and utilization of the water resources of the State. Under the Porter-Cologne 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.

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 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).

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[2] *40 Code of Federal Regulations Section 131.12.*

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) 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.

(c) California Toxic Rule

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

(d) National Pollutant Discharge Elimination System

(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 site (Water Quality Order No. 2009-0009-DWQ). 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 Stormwater Pollution Prevention Plan, which describes the implementation and

maintenance of Best Management Practices 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. A municipal NPDES permit has been issued to the County and 84 incorporated cities. Under the Los Angeles County 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 a Low Impact Development (LID) Plan for review and approval by the Director of Public Works.[3] The LID Plan shall identify stormwater quality control measures or BMPs to reduce the volume of runoff and associated discharge of pollutants in stormwater which must be incorporated into the design plans of new development and redevelopment. In combination, these BMPs must be sufficiently designed and constructed to treat or filter a specified volume of water referred to as the stormwater quality design volume during a 0.75-inch, 24-hour storm event or an 85th percentile, 24-hour rain event as determined from the Los Angeles County 85th percentile precipitation isoheytal map, whichever is greatest.

(e) 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,

[3] *In communication with the County of Los Angeles Department of Public Works, the previous Standard Urban Stormwater Mitigation Plan requirements have been superseded and replaced by the County's Low Impact Development requirements.*

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.

(3) Local

(a) County of Los Angeles Hydrology Manual

The Los Angeles County Department of Public Works' Hydrology Manual requires projects to have drainage facilities to meet the Urban Flood level of protection, which is defined as runoff from a 25-year frequency storm falling on a saturated watershed.[4] A 25-year frequency design storm has a probability of 1/25 of being equaled or exceeded in any year.

(b) Low Impact Development Ordinance

On November 18, 2008, the Los Angeles County Board of Supervisors passed the Low Impact Development ordinance. This 2008 LID Ordinance was updated in November 2013 to incorporate the requirements of the County's 2012 MS4 Permit, including the requirement that new development and redevelopment projects retain, on-site, a specified volume of stormwater runoff from a design storm event. The LID ordinance focuses on water resources and specifies stormwater handling and treatment requirements that protect streams, groundwater, surface water quality, and natural drainage characteristics. Chapter 12.84 of the County Code requires the use of LID principles in development projects. As set forth in the updated LID Ordinance, the intent of the LID Ordinance is to 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 property designed, technically appropriate BMPs and other LID strategies; and minimize erosion and other hydrologic impacts on natural drainage systems by requiring development projects to incorporate property designed, technically appropriate hydromodification control development principles and technologies. Site preservation practices coupled with 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.

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[4] *Los Angeles County Department of Public Works, Hydrology Manual, January 2006, http://dpw.lacounty.gov/wrd/Publication/engineering/2006_Hydrology_Manual/2006%20Hydrology%20Manual-Divided.pdf, accessed November 5, 2012.*

(c) Stormwater Quality Management Program

The Los Angeles County NPDES Permit, as discussed above, contains provisions for implementation of the Stormwater Quality Management Program (SQMP) by the Co-Permittees. The SQMP states that Permittees are required to implement the most effective combination of Best Management Practices for stormwater/urban runoff pollution control. The objective of the SQMP 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.

b. Existing Conditions

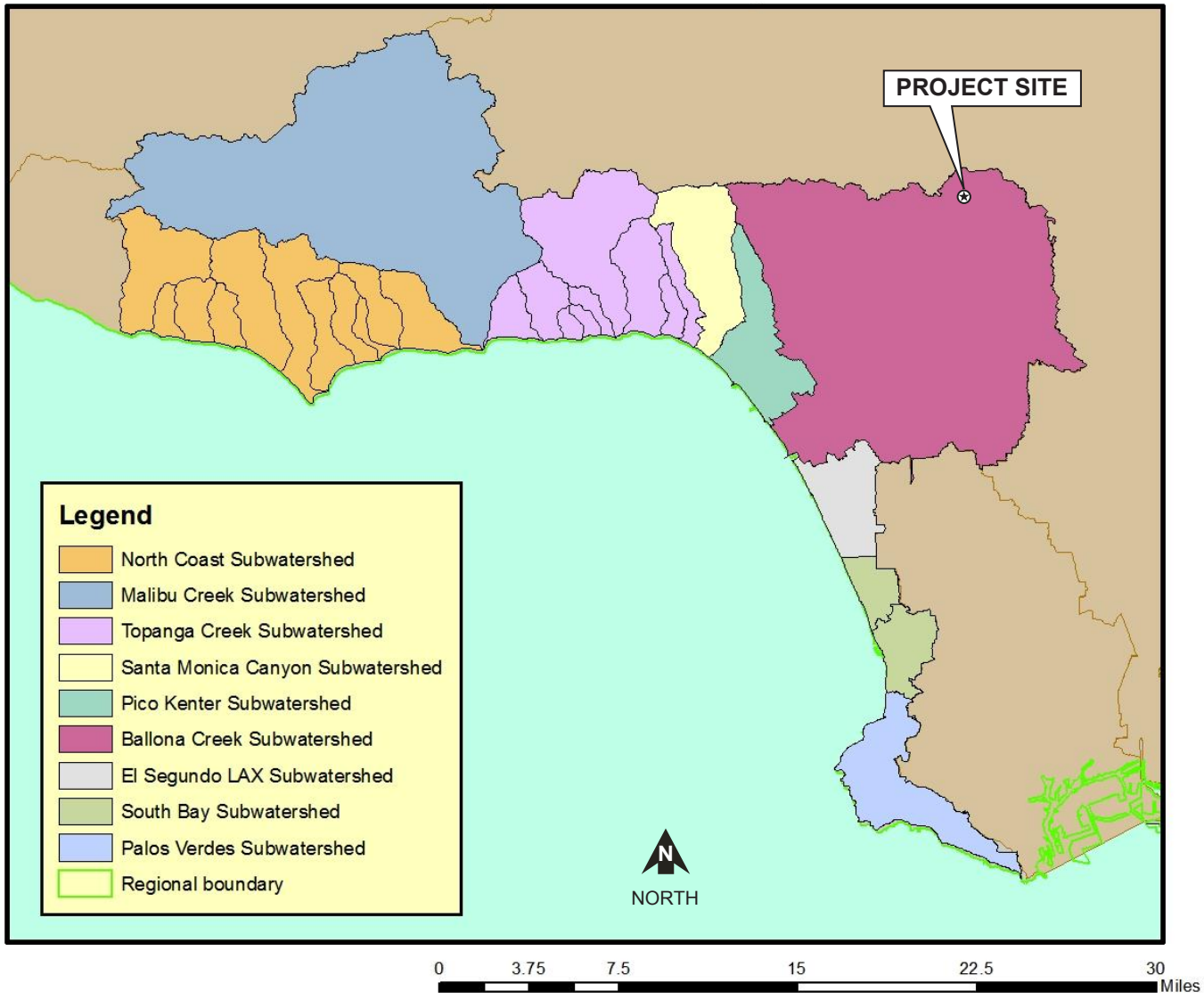
(1) Surface Water Hydrology

(a) Regional

As shown in Figure IV.G-1 on page IV.G-8, the Project Site is located within the Santa Monica Bay Watershed Management Area in the Los Angeles Basin. The Santa Monica Bay Watershed Management Area encompasses an area of 414 square miles. The northern boundary of the Santa Monica Bay Watershed extends from the crest of the Santa Monica Mountains and the Ventura–Los Angeles County line through downtown Los Angeles to the Pacific Ocean. The boundary then extends south and west across the Los Angeles plain to include the area east of Ballona Creek and north of the Baldwin Hills.

Surface water flows into the Santa Monica Bay through 28 catchment basins that are further grouped into nine subwatershed areas. As shown in Figure IV.G-1, these nine subwatershed areas include the North Coast; Malibu Creek; Topanga Creek; Santa Monica Canyon; Pico–Kenter; Ballona Creek; El Segundo–LAX; South Bay; and Palos Verdes. The Project Site is specifically located within the Ballona Creek subwatershed area.

The Ballona Creek is a 9-mile-long flood protection channel that drains into the Los Angeles basin to the Pacific Ocean, from the Santa Monica Mountains on the north, the Harbor Freeway (I-110) on the east, and Baldwin Hills on the south. The Ballona Creek Watershed covers a land area of approximately 130 square miles and comprises all or parts of the cities of Beverly Hills, Culver City, Inglewood, Los Angeles, Santa Monica, West Hollywood, and unincorporated Los Angeles County as shown in Figure IV.G-2 on page IV.G-9. Land uses within the watershed consist of 64 percent residential, 8 percent commercial, 4 percent industrial, and 17 percent open space. There are three tributaries that enter into the Ballona Creek Watershed, including Centinela Creek, Sepulveda Canyon Channel, and Benedict Canyon Channel, in addition to numerous storm drains. The Ballona Creek is designed to discharge approximately 71,400 cubic feet per second (cfs) from a 50-year frequency storm event into the Santa Monica Bay.



Source: Los Angeles Regional Water Quality Control Board. State of the Watershed – Report of Water Quality, the Santa Monica Bay Watershed Management Area, 2nd Edition. November 2011.

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Figure IV.G-1
Santa Monica Bay Watershed Management Area

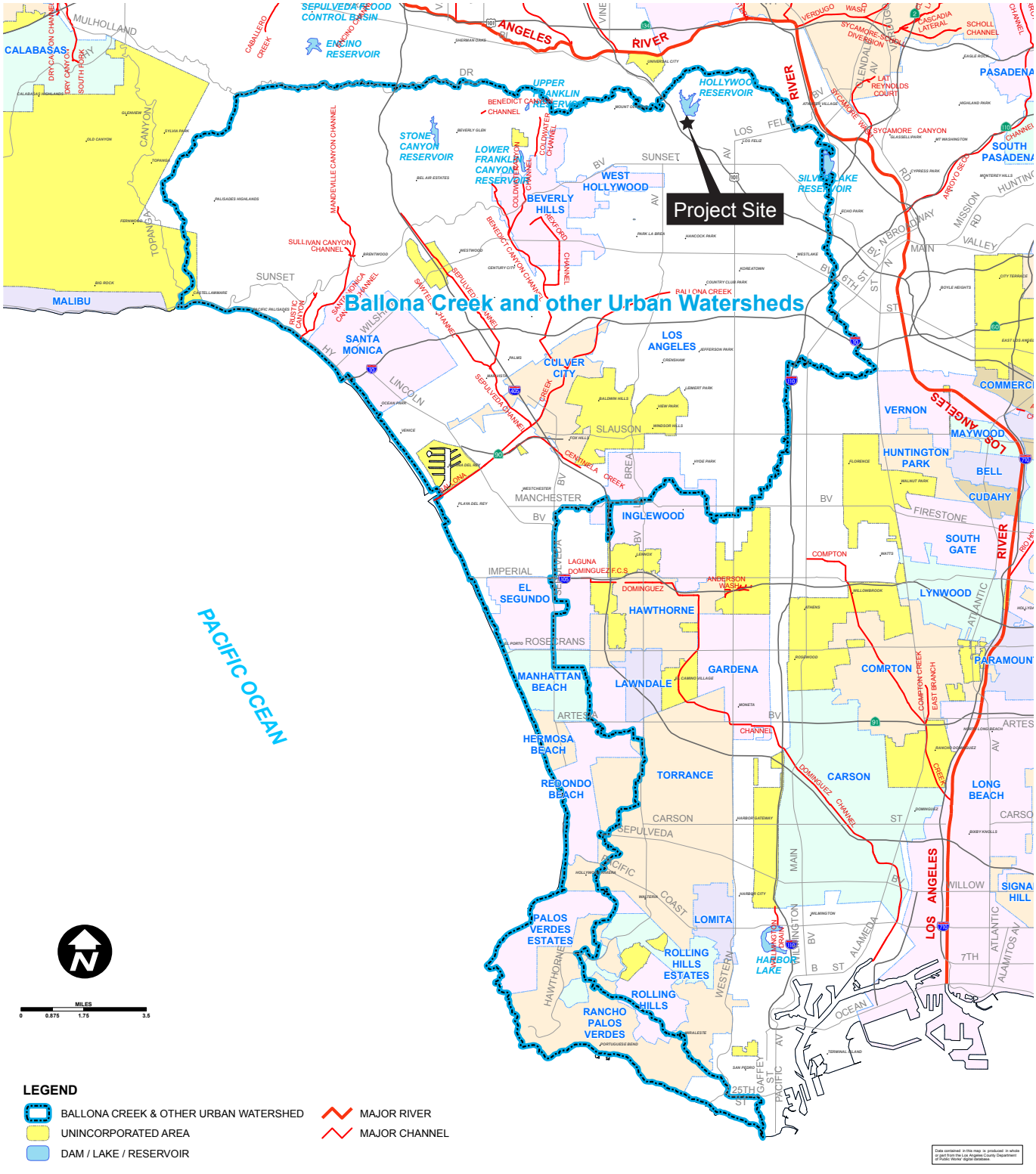

Figure IV.G-2
Ballona Creek and other Urban Watersheds

Source: County of Los Angeles, 2007.

(b) Local

Drainage from the Project Site primarily sheet flows to Cahuenga Boulevard East via a series of bubbler catch basins and curb drains. The Project Site's runoff is then conveyed to an underground storm drain pipe owned and maintained by the City of Los Angeles via curb-open catch basins in Cahuenga Boulevard East. After entering the underground storm drain pipe at Cahuenga Boulevard East, the drainage from the Project Site is conveyed through an underground pipe network that flows south and west through various drainage pipes owned by the City of Los Angeles and the Los Angeles County Flood Control District and ultimately discharging into the Pacific Ocean from Ballona Creek.

(c) On-Site

As shown in Figure IV.G-3 on page IV.G-11, the Project Site has been divided into 14 drainage areas (identified herein as drainage areas A through N) based on the drainage patterns and flow paths of stormwater that are tributary to a common point or area.

As shown in Figure IV.G-3, while the Project Site generally slopes toward Cahuenga Boulevard East, there is an existing hilltop ridgeline that divides the drainage areas away from Cahuenga Boulevard East. Specifically, runoff from drainage areas A through I sheet flows west toward Cahuenga Boulevard East where it is collected by a series of storm drain inlets. Runoff from drainage areas A through I is discharged at a rate of 76.3 cubic feet per second (cfs). Runoff from drainage areas J through N flows east toward the undeveloped hillsides, away from Cahuenga Boulevard East. The runoff from drainage areas J through N was estimated to discharge at a rate of 43.6 cfs. The total runoff flow rate from drainage areas A through N was calculated as 119.9 cfs and the total collected volume was measured at 381,586 cubic feet.[5]

The existing 32-acre Project Site is approximately 11 percent impervious surfaces including buildings and impervious pavements for pedestrian and vehicular circulation. The remaining 89 percent of the existing Project Site is pervious surfaces consisting of landscaped areas and undeveloped hillsides.

[5] *The calculated flow rate is the amount of flow that occurs, spread across the Project Site, during a 50-year storm event. The calculated volume is the amount of runoff that is collected from all drainage areas during a 50-year storm event.*

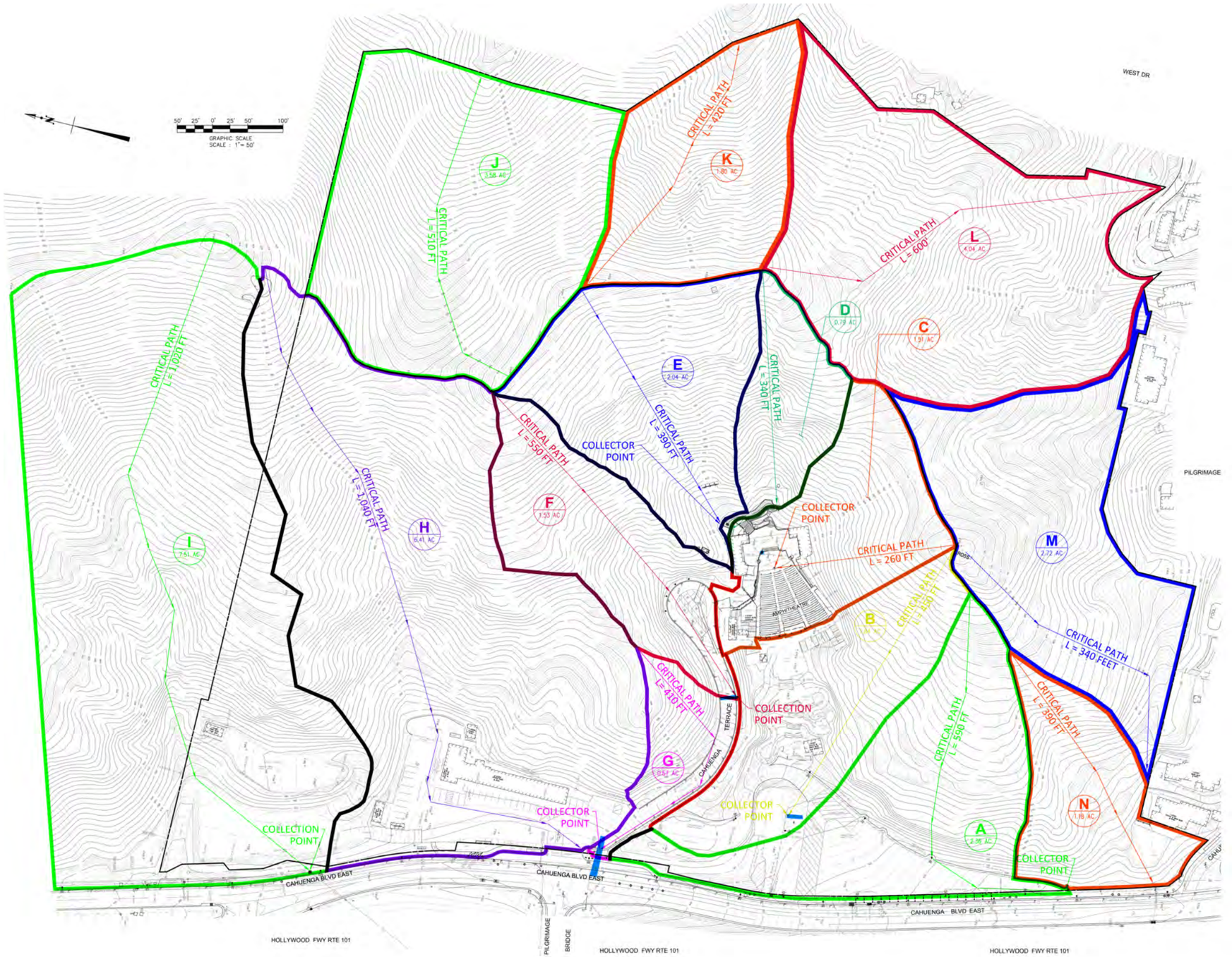

Figure IV.G-3
Existing Project Site Hydrology

Source: Levin & Associates Architects and Mollenhauer Group, 2014.

(2) Surface Water Quality

(a) Regional

As discussed above, the Project Site is located within the Santa Monica Bay Watershed Management Area of the Los Angeles Basin, which includes several subwatershed areas. The Project Site is specifically located within the Ballona Creek Subwatershed. As previously described, the Project Site ultimately drains to the Santa Monica Bay via a network of City and County storm drains within the Ballona Creek Subwatershed.

(i) Beneficial Uses of the Ballona Creek Subwatershed

According to the LARWQCB Santa Monica Bay Watershed Report, almost every beneficial use defined in the Basin Plan is identified in water bodies within the Santa Monica Bay Watershed Management Area.[6] Specifically, 20 beneficial uses for surface waters and 4 beneficial uses for ground waters in the Santa Monica Bay Watershed Management Area are designated in the Basin Plan. The existing and potential beneficial uses for the waters within the Ballona Creek Subwatershed, where surface water flows from the Project Site ultimately discharge, include municipal and domestic supply; navigation; water contact and non-contact water recreation; commercial and sport fishing; warm freshwater habitat; estuarine habitat; wetland habitat; marine habitat; wildlife habitat; rare, threatened, or endangered species habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; and shellfish harvesting.

(ii) Impairments and TMDLs in the Ballona Creek Subwatershed

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 TMDLs. A TMDL 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 TMDL. The USEPA approved the most recent Section 303(d) list in November 2010.[7] The 2010 303(d) list indicates impairment in the Ballona Creek Subwatershed due to cadmium, coliform bacteria, copper, cyanide, lead, selenium, toxicity, trash, viruses, zinc, chlordane, DDT, lead, polycyclic aromatic hydrocarbons, polychlorinated biphenyls,

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[6] *Los Angeles Regional Water Quality Control Board. State of the Watershed—Report of Water Quality, the Santa Monica Bay Watershed Management Area, 2nd Edition, www.waterboards.ca.gov/losangeles/water_issues/programs/regional_program/watershed/index.shtml; accessed April 2, 2014.*

[7] *State Water Resources Control Board, 2010 Integrated Report, www.swrcb.ca.gov/water_issues/programs/tmdl/integrated2010.shtml, accessed April 1, 2014.*

sediment toxicity, shellfish harvesting advisory, silver, zinc, exotic vegetation, habitat alterations, hydromodification, and reduced tidal flushing.[8]

(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

While the Project Site currently does not have structural BMPs for the treatment of stormwater runoff from the existing impervious surfaces such as building roof areas and pavements, there are 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. Based on the existing operations within the Project Site, the on-site runoff likely contains the following pollutants of concern: sediment, nutrients, pesticides, metals, pathogens, and oil and grease.

(3) Groundwater Hydrology

(a) Regional

Groundwater use for domestic water supply is a major beneficial use of groundwater basins in Los Angeles County. The City of Los Angeles overlies the Los Angeles Coastal

[8] *Ibid.*

Plain Groundwater Basin. As shown in Figure IV.G-4 on page IV.G-15, 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

The Project Site is not located within the groundwater basins in the Los Angeles Coastal Plain Groundwater Basin. As shown in Figure IV.G-5 on page IV.G-16, the Project Site is specifically situated between the Hollywood Basin and the boundaries of the Upper Los Angeles River Area Basin.

(c) On-Site

As discussed in the Geotechnical Reports, including in Appendix H, of this Draft EIR, due to the relatively high topographical relief and the exposed or shallow bedrock throughout the majority of the Project Site, shallow groundwater is not expected to be encountered within the Project Site. In addition, groundwater was not encountered during recent on-site explorations conducted. Furthermore, 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

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.

(5) Flood Zone

Based on the Federal Emergency Management Agency Flood Insurance Rate Map 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." In addition, while the Hollywood Reservoir located northeast of the Project Site is considered to be within a 100-year floodplain, the Hollywood Reservoir is separated from the Project Site by surrounding hillsides which are at a lower elevation than the ridgeline within the Project

Figure IV.G-4
Coastal Plain of the Los Angeles Groundwater Basin

Source: U.S. Geological Survey, 2012.

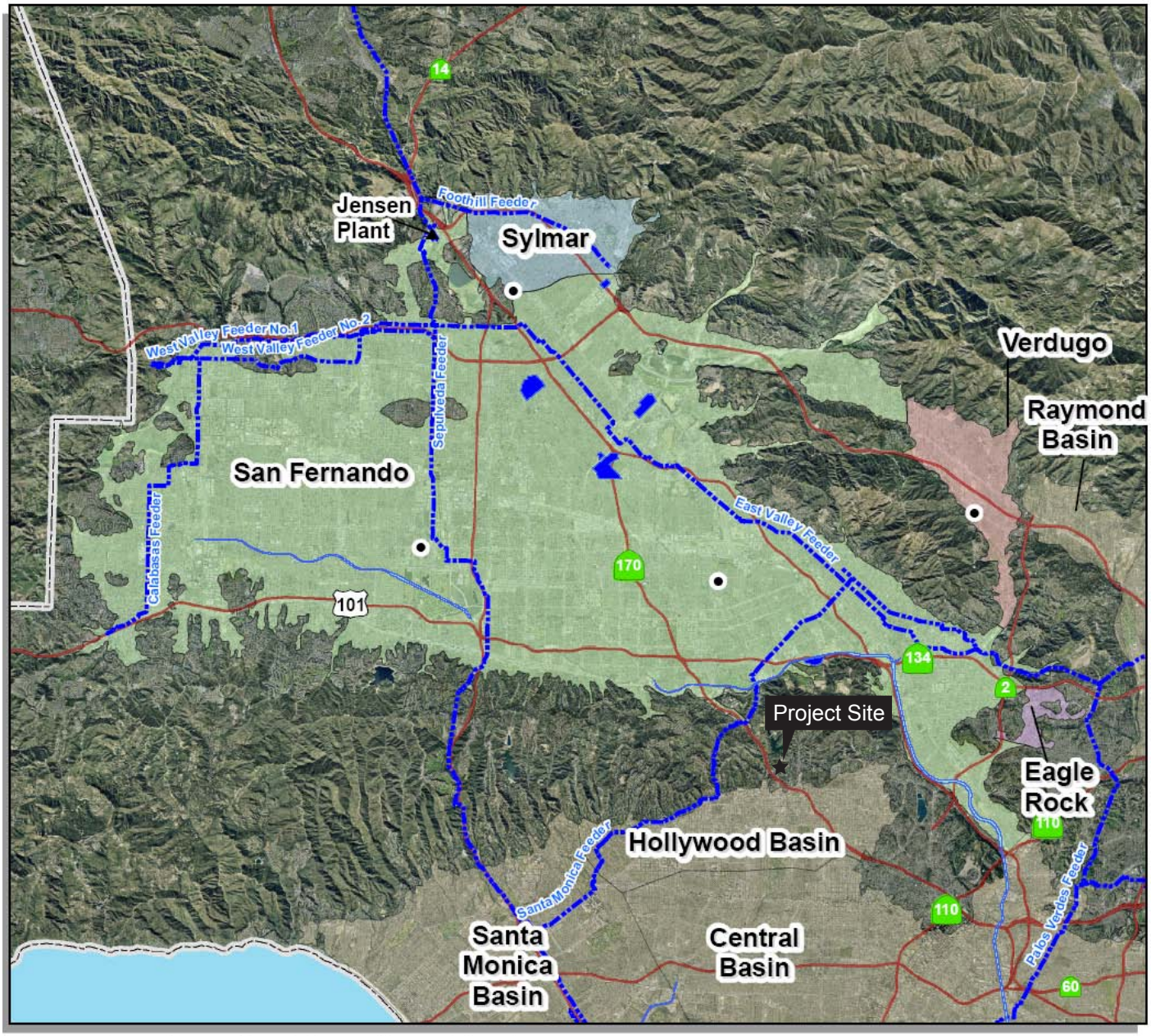

Figure IV.G-5
Groundwater Basins in the Vicinity of the Project Site

Source: The Metropolitan Water District of Southern California, Groundwater Basin Reports, September 2007.

Site. Drainage captured below the Hollywood Reservoir flows down Weid Canyon rather than toward the Project Site.

3. Environmental Impacts

a. Methodology

The analysis of potential impacts to surface water hydrology, surface water quality, and groundwater is based on the Hydrology and Water Quality Report prepared by Mollenhauer (March 2014). This report is provided in Appendix I of this Draft EIR.

(1) Surface Water Hydrology

The surface water hydrology analysis included below evaluates the change in surface water runoff patterns and quantity for the Project Site associated with the Project and the impact of these changes on the existing downstream stormwater system. 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 50-year frequency design storm event was evaluated.

As part of its Hydrology Manual, the Los Angeles County Department of Public Works developed a time of concentration calculator, Tc Calculator,[9] to automate time of concentration, peak runoff rate, and total volume calculations. The Tc Calculator 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

[9] *The time of concentration (Tc) is defined as the time it takes for rain in the most hydrologically remote part of the basin area to reach the outlet.*

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.

b. Thresholds of Significance

Based on Appendix G of the CEQA Guidelines, Project impacts associated with hydrology and water quality would be significant if the Project would:

- Violate any water quality standards or waste discharge requirements;
- 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);
- 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;
- 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;
- 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;
- Otherwise substantially degrade water quality;
- 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;
- Place within a 100-year flood plain structures which would impede or redirect flood flows;
- 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;
- Inundation by seiche, tsunami, or mudflow; or

- 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.

As evaluated in the Initial Study prepared for the Project, provided in Appendix A of this Draft EIR, the Project does not propose the development of residential uses and 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.

The potential for flooding as a result of the failure of a levee or dam is discussed in Section IV.F, Geology and Soils, of this Draft EIR. As described therein, the Project Site is not located within a potential inundation area associated with the Hollywood Reservoir. In addition, it is noted that the Mulholland Dam, which impounds the Hollywood Reservoir, is continually monitored by the Army Corp of Engineers to guard against the threat of dam failure. It is also noted that current design practices, dam review, and modification or total reconstruction of existing dams are intended to ensure that all dams are capable of withstanding the maximum earthquake for that particular site. Therefore, the potential for the Project Site to be inundated as a result of dam failure is considered low.

The potential for seiches, tsunamis, and mudflows to occur within the Project Site is also evaluated in Section IV.F, Geology and Soils, of this Draft EIR. As discussed therein, based on the proximity of the Hollywood Reservoir to the Project Site and the location and varying elevations between the Project Site and the Hollywood Reservoir, the seiche risk at the Project Site is considered low. In addition, the Project Site is not mapped as a tsunami inundation area. Therefore, the Project Site would not be affected by a seiche or tsunami. With regard to the potential for mudflows, also known as debris flows, as provided in Section IV.F, Geology and Soils, of this Draft EIR, the Project Site would attain sufficient stability with minor surficial grading and the incorporation of slope reinforcement measures, including removal of loose slope materials, repair of the existing damaged crib wall, and installation of retaining walls. In addition, for protection against potential future rockfalls, the Geotechnical Reports recommend installation of flexible barriers. Therefore, with implementation of the recommended features and measures into the design and construction of the Project, the Project would not expose people or structures to potential substantial adverse effects related to landslides or slope failures.

c. Project Design Features

Project Design Feature G-1: Prior to the issuance of a grading permit, the Applicant shall provide evidence to the County of Los Angeles Department of Public Works, as appropriate, that a Notice of Intent has been filed with the State Water Resources Control Board for coverage under the Construction General Permit and a certification that a Stormwater Pollution Prevention Plan has been prepared. Such evidence would consist of a copy of the Notice of Intent stamped by the State Water Resources Control Board or Los Angeles Regional Water Quality Control Board, or a letter from either agency stating that the Notice of Intent has been filed. The Stormwater Pollution Prevention Plan would include a menu of Best Management Practices to be selected and implemented based on the phase of construction and the weather conditions to effectively manage stormwater runoff and control erosion. Best Management Practices to be implemented as part of the Project could include, but not be limited to, the following:

- Erosion Control BMPs to protect the soil surface and prevent soil particles from detaching. Selection of the appropriate erosion control BMPs would be based on minimizing areas of disturbance, stabilizing disturbed areas, and protecting slopes/channels;
- Sediment Control BMPs, which are treatment controls that trap soil particles that have been detached by water or wind. Selection of the appropriate sediment control BMPs would be based on keeping sediments on-site and controlling the site boundaries;
- Wind Erosion Control BMPs, which consist of applying water to prevent or minimize dust nuisance;
- Tracking Control BMPs, which consist of preventing or reducing the tracking of sediment off-site by vehicles leaving the construction area. These BMPs include street sweeping and vacuuming. The construction site would have a stabilized construction entrance to prevent off-site tracking of sediment and debris;
- Non-Stormwater Management BMPs, which are also referred to as “good housekeeping practices” involve keeping a clean, orderly construction site; and
- Waste Management and Materials Pollution Control BMPs consist of implementing procedural and structural BMPs for handling, storing, and disposing of wastes generated by a construction project to prevent the release of waste materials into

stormwater runoff or discharges through the proper management of construction waste.

Project Design Feature G-2: Prior to issuance of a building permit, the Applicant shall prepare and submit for review and approval a Low Impact Development Plan that would include Best Management Practices and demonstrate compliance with Low Impact Development Ordinance requirements to the Los Angeles County Department of Public Works, Building and Safety, as applicable. Specific Best Management Practices to be implemented as part of the Low Impact Development Plan for the Project to manage post-construction stormwater runoff would include, but not be limited to, the following:

- Installation of catch basins, planter drains, and building roof drain downspouts throughout the Project Site to collect roof and site runoff and direct stormwater away from structures and to potential infiltration systems.[10]
- Installation of filter inserts to catch basins to improve the quality of stormwater runoff from the Project Site.
- Promote evapotranspiration and infiltration, and the use of native and/or drought tolerant plants
- Promote bioretention through the use of underground retention tanks and/or rainwater harvesting;
- Design material storage areas and loading docks within structures or enclosures to prevent leaks or spills of pollutants from entering the storm drain system;
- Design post-construction structural or treatment control BMPs to infiltrate stormwater runoff. Stormwater treatment facilities and systems would be designed to meet the requirements of the LID Ordinance.

[10] *Infiltration refers to the physical process of percolation, or downward seepage, of water through a soil's pore space. As water infiltrates, the natural filtration, adsorption, and biological decomposition properties of soils, plant roots, and micro-organisms work to remove pollutants prior to the water recharging the underlying groundwater. Infiltration BMPs include infiltration basins, infiltration trenches, infiltration galleries, bioretention without an underdrain, dry wells, and permeable pavement. Infiltration can provide multiple benefits, including pollutant removal, peak flow control, groundwater recharge, and flood control.*

d. Analysis of Project Impacts

(1) Construction

(a) Surface Water Hydrology and Water Quality

Construction of the Project would require onsite demolition, grading, and excavation activities. Such construction activities would have the potential to temporarily alter existing drainage patterns and flows within the Project Site by exposing the underlying soils and making the Project Site temporarily more permeable. Exposed and stockpiled soils could be subject to erosion and conveyance into nearby storm drains during storm events. In addition, 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. Onsite watering activities to reduce airborne dust could also contribute to pollutant loading in runoff. The main pollutant of concern during construction would be sediment or soil particles that would become detached by water and wind. However, as the construction site would be greater than one acre, Project construction activities would be regulated per the NPDES Construction General Permit.

In accordance with the requirements of the Construction General Permit, the Project would implement a SWPPP that would specify BMPs to be used during construction to manage runoff flows and erosion and prevent pollution. In addition, construction activities would be scheduled to minimize the amount of time soil is exposed to further control erosion and stormwater runoff. BMPs would also be provided to target pollutants of concern and be designed to reduce runoff and pollutant levels in runoff during construction. Further, implementation of BMPs such as sandbag barriers and other sediment barriers would serve to maintain the existing drainage flow paths and discharge points during construction.

Through compliance with all NPDES Construction General Permit requirements, including the preparation and implementation of a SWPPP, implementation of BMPs, and compliance with applicable County grading regulations, construction of the Project would not violate any water quality standards; substantially alter the existing drainage pattern of the Project Site and surrounding area or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or flooding on- or off-site; create or contribute runoff water which would exceed the capacity of the existing stormwater drainage system or provide substantial additional sources of polluted runoff and otherwise substantially degrade water quality. In addition, Project construction would not require or result in the construction of new stormwater drainage facilities which could cause significant environmental effects. As such, impacts to surface water hydrology and water quality during construction would be less than significant.

(b) Groundwater

As described above, 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. In addition, as noted above, due to the relatively high topographical relief and the exposed or shallow bedrock throughout the majority of the Project Site, shallow groundwater is not expected to be encountered within the Project Site. Furthermore, groundwater was not encountered during recent on-site explorations conducted within the Project Site. Accordingly, it is not expected that groundwater would be encountered during construction that would require temporary or permanent dewatering operations. Therefore, Project development would not 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. Additionally, 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. As such, Project construction would not result in a significant impact with regard to groundwater.

(2) Operation

(a) Surface Water Hydrology

As described above, the Project Site is currently covered by approximately 11 percent impervious surfaces, including buildings and impervious pavements for pedestrian and vehicular circulation. The remaining 89 percent of the existing Project Site is pervious surfaces consisting of landscaped areas and undeveloped hillsides. With implementation of the Project, the amount of impervious area would increase from approximately 11 percent to 13 percent. Accordingly, Project development would increase the amount of stormwater flow and volume. In addition, with the construction of new buildings, some of the existing drainage areas would be divided into additional drainage areas. Specifically, development of the Project would change existing drainage areas by bisecting existing tributary flows. As shown in Figure IV.G-6 on page IV.G-24, with development of the Project, the Project Site would be divided into 21 drainage areas (identified herein as drainage areas A through U) based on their runoff collection points compared to the 14 drainage areas under existing conditions.

Drainage areas A through P would flow toward Cahuenga Boulevard East and into the City of Los Angeles storm drain system with a flow rate of 79.8 cfs. Tributary areas Q through U would be divided by existing ridgelines that divert runoff east and away from

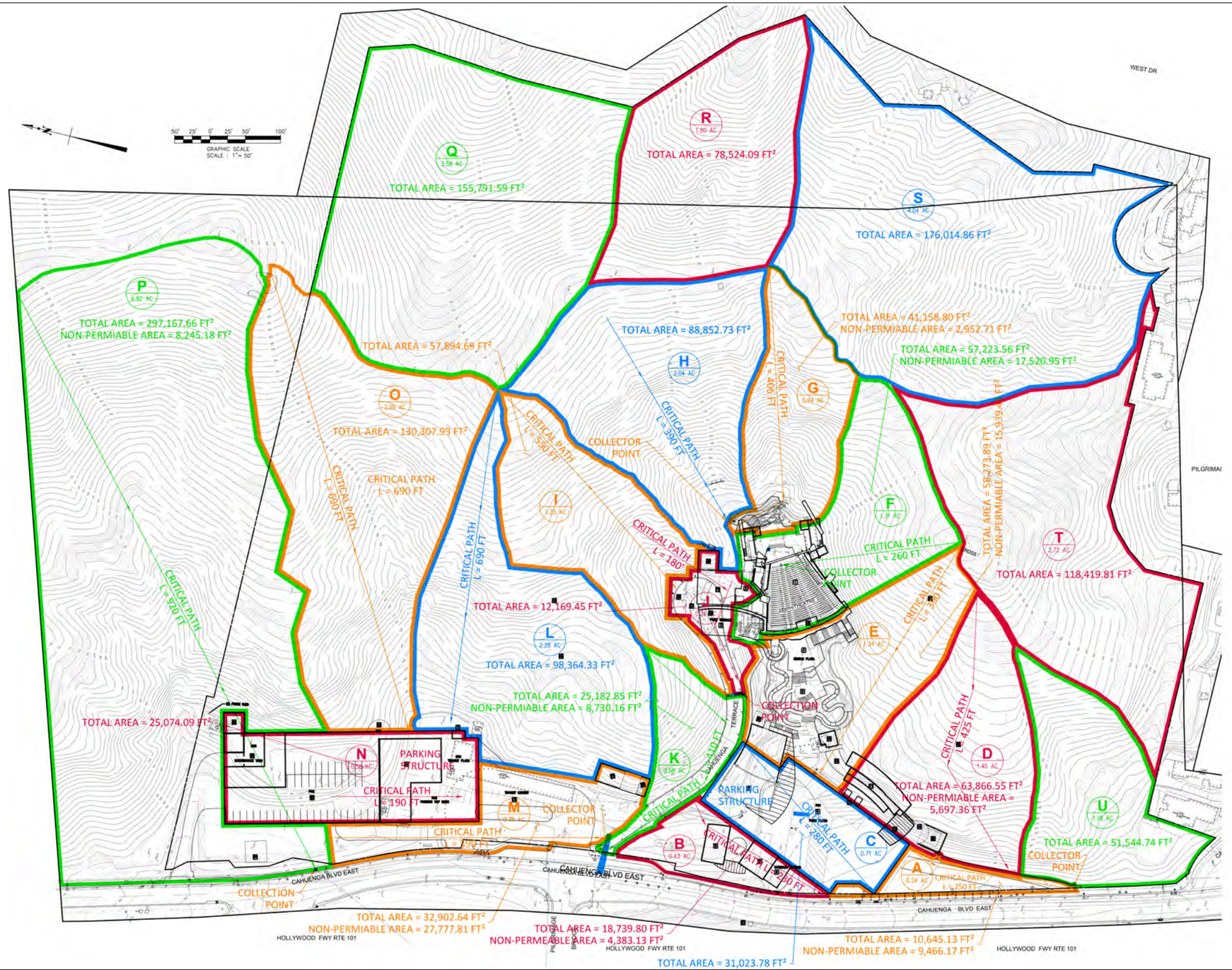

Figure IV.G-6
Proposed Project Site Hydrology

Source: Levin & Associates Architects and Mollenhauer Group, 2014.

Cahuenga Boulevard. Tributary subareas Q through U are entirely undeveloped and would remain undeveloped after implementation of the Project. The flow rate for these subareas would remain the same as the existing flow rate for existing tributary subareas J through N with a flow rate of 43.6 cfs. As summarized in Table IV.G-1 on page IV.G-26, with Project development, the total flow rate for the Project Site would increase from 119.92 cfs to 123.44 cfs and the total collected volume would increase from 381,586 cf to 392,476 cf. Although the runoff volume would increase as a result of an increase in impervious area, in accordance with NPDES and County requirements as set forth in Project Design Feature G-2 above, a Low Impact Development Plan would be prepared and implemented for the Project that would specify BMPs to promote bioretention or other functions to detain water onsite to manage post-construction stormwater runoff associated with a 0.75-inch, 24-hour storm event. In addition, the design runoff would be managed so as not to exceed the recommended and allowable runoff flows determined by the Los Angeles County Department of Public Works. Therefore, with compliance with regulatory requirements, the Project would not substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or flooding on- or off-site, and would not 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 require the construction of new stormwater drainage facilities. As such, operation of the Project would result in a less-than-significant impact on surface water hydrology.

(b) Surface Water Quality

As is typical of most urban developments, stormwater runoff from the Project Site has the potential to introduce pollutants into the stormwater system. As previously described, as part of the NPDES and County requirements, a Low Impact Development Plan would be prepared for the Project which would outline the stormwater treatment measures or post-construction BMPs required to control pollutants of concern associated with storm events up to the 0.75-inch precipitation level. BMPs would include source control and treatment control BMPs to remove pollutants from stormwater discharges. As described above, the Project Site currently does not have structural BMPs for the treatment of stormwater runoff from the existing impervious surfaces. Therefore, implementation of BMPs to capture and naturally filter stormwater from the Project Site would result in an improvement in surface water quality runoff from the Project Site compared to existing conditions. Therefore, with compliance with NPDES and County requirements which would require the implementation of BMPs that would serve to improve runoff from the Project Site, operation of the Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality. Thus, operational impacts on surface water quality would be less than significant.

Table IV.G-1
Comparison of Tributary Acreage and Runoff—Existing and Proposed

	Tributary Acreage[a]	Flow Rate[b] (cfs)	Volume[c] (cf)
Existing	37.90	119.92	381,586
Proposed	37.89	123.44	392,476
Net Effect	(>1%)	2.9%	2.9%

[a] *Acreage changes are due to grading.*

[b] *The calculated flow rate is the amount of flow that occurs, spread across the site, during a 50-year storm event*

[c] *The calculated volume is the amount of runoff that is collected from all tributary areas during a 50-year storm event*

Source: Mollenhauer, 2014.

(c) Groundwater

The percolation of precipitation that falls on pervious surfaces is variable, dependent upon the soil type, condition of the soil, vegetative cover, and other factors. Implementation of the Project would include both the addition and removal of impervious surfaces throughout the Project Site boundary. Currently, the Project Site is approximately 11 percent impervious surfaces and 89 percent pervious surfaces. As described above, implementation of the Project would increase impervious surfaces to approximately 13 percent. However, as discussed in the Hydrology and Water Quality Report, the soils underlying the Project Site are not conducive to infiltration as they are underlain by bedrock. Notwithstanding, no water supply wells are located within the Project Site or within 1 mile of the Project Site and, due to the relatively high topographical relief and the exposed or shallow bedrock throughout the majority of the Project Site, shallow groundwater does not occur within the Project Site. Therefore, Project development would not 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. Additionally, compliance with all applicable existing regulations at the Project Site would prevent the Project from affecting or expanding any potential areas affected by contamination, increasing the level of contamination, or causing regulatory water quality standards at an existing production well to be violated, as defined in the California Code of Regulations, Title 22, Division 4, Chapter 15 and the Safe Drinking Water Act. As such, operation of the Project would not result in significant impacts to groundwater.

4. Cumulative Impacts

a. Surface Water Hydrology and Water Quality

The geographic context for the cumulative impact analysis on surface water hydrology and water quality is the Santa Monica Bay Watershed. The Project in conjunction with the cumulative growth in the Santa Monica Bay Watershed (inclusive of the related projects) through 2020 would cumulatively increase stormwater runoff flows and could possibly increase the amount of pollutants potentially resulting in cumulative impacts to surface water hydrology and water quality. However, as with the Project, cumulative growth in the Santa Monica Bay Watershed (inclusive of the related projects) would be subject to NPDES and local requirements, including implementation of SWPPPs, SUSMPs, and Low Impact Development Plans with appropriate BMPs to manage stormwater runoff and water quality during construction and operation. Furthermore, the local jurisdiction would review each future development project on a case-by-case basis to ensure sufficient local and regional drainage capacity is available to accommodate stormwater runoff. Therefore, with compliance with applicable laws, rules and regulations, cumulative impacts on surface water hydrology and water quality would be less than significant.

b. Groundwater

Cumulative groundwater hydrology impacts could result from the overall use of groundwater basins located in proximity to the Project Site and the related projects. In addition, interruptions to existing injection or supply wells or designated spreading grounds would have the potential to affect groundwater levels. As described above, no water supply wells, spreading grounds, or injection wells are located within a 1-mile radius of the Project Site. In addition, Project development would not involve the temporary or permanent extraction of groundwater from the Project Site or otherwise use the groundwater. Furthermore, while implementation of the Project would result in an increase in impervious surface area, per County requirements, the Project would implement BMPs to capture the first flush or first 0.75 inch of rainfall for any storm event and offset the potential reduction in percolation resulting from Project development. However, development of the related projects could result in changes in impervious surface area within their respective project sites which would decrease the potential for groundwater recharge. As the related projects are located in a highly urbanized area, any reduction in groundwater recharge due to the overall net change in impervious area within the related project sites would be minimal in the context of the regional groundwater basin. Additionally, compliance with all applicable existing regulations at the Project Site would prevent the Project from affecting or expanding any potential areas affected by contamination, increasing the level of contamination, or causing regulatory water quality standards at an existing production well to be violated, as defined in the California Code of

Regulations, Title 22, Division 4, Chapter 15 and the Safe Drinking Water Act. As with the Project, the related projects would be unlikely to cause or increase groundwater contamination because compliance with existing statutes and regulations would similarly prevent the related projects from affecting or expanding any potential areas affected by contamination, or increasing the level of contamination, or causing regulatory water quality standards at an existing production well to be violated. Therefore, cumulative impacts to groundwater would be less than significant.

5. Mitigation Measures

The Project would result in less than significant impacts to surface water hydrology, water quality, and groundwater during construction and operation. No mitigation measures would be required.

6. Conclusion

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