IV. Environmental Impact Analysis

H.1 Water Resources—Hydrology and Surface Water Quality

1. Introduction

This section of the Draft EIR provides an analysis of the potential surface water hydrology and surface water quality impacts associated with the Proposed Project. This section is based on the *Hydrology Technical Report* and the *Surface Water Quality System Technical Report*, both prepared by KPFF Consulting Engineers in February 2012. These technical reports are included as Technical Appendices O and P, to this Draft EIR.

2. Environmental Setting

a. Regulatory Framework

Numerous federal, State, and local regulations regarding hydrology and surface water quality are relevant to and would be implemented by the Proposed Project. These regulations are provided in Appendix G of this Draft EIR. As discussed therein, at the federal level, the Clean Water Act (CWA) forms the basic national framework for the management of water quality and control of pollutant discharges. The CWA also established the National Pollutant Discharge Elimination System (NPDES) permit and mandated the development of a Best Management Practices (BMPs) program at the state level. In addition, the CWA requires preparation of a 303 (d) list, which identifies those water bodies that are not achieving water quality standards or receiving beneficial uses and for what pollutants. Furthermore, the Federal Antidegradation Policy (40 Code of Federal Regulations (CFR) 131.12) requires states to develop statewide anti-degradation policies and identify methods for implementing them.

At the State level, the Porter-Cologne Water Quality Control Act established the legal and regulatory framework for California's water quality control including implementation of the provisions set forth in the CWA. In addition, the California Antidegradation Policy regulates all waters of the State. Moreover, the California Toxics Rule established water quality criteria for certain toxic substances to be applied to waters in the State. In addition, in California, the NPDES stormwater permitting program is administered by the State Water Resources Control Board (SWRCB) through its *General Permit*. A construction site subject to the *General Permit* must prepare and implement a Stormwater Pollution Prevention Plan (SWPPP), which documents the selection and

implementation of BMPs for a specific construction project. The NPDES permit also requires the implementation of a Standard Urban Stormwater Mitigation Plan (SUSMP) throughout the operational life of a project in order to reduce the discharge of pollutants in stormwater by outlining BMPs which must be incorporated into the design plans of new development and redevelopment projects.

Additionally, at the regional level, the *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* 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 Anti-Degradation Policy, and describes implementation programs to protect all waters in the Los Angeles Region. Furthermore, 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.

At the local level, the Los Angeles County Department of Public Works' Hydrology Manual requires projects to have drainage facilities to meet the Urban Flood level of protection (runoff from a 25-year frequency storm falling on a saturated watershed). In addition, the *Water Quality Compliance Master Plan for Urban Runoff* identifies and describes the various watersheds in the City, summarizes the water quality conditions of the City's waters, identifies known sources of pollutants, describes the BMPs that are being implemented by the City and discusses existing Total Maximum Daily Load (TMDL) Implementation Plans and Watershed Management Plans. Moreover, the City supports the policies of the NPDES Construction General Permit and the requirements of the Los Angeles County Municipal NPDES permit through the *Development Best Management Practices Handbook, Part A Construction Activities and Part B Planning Activities*, and associated ordinances. Additionally, earthwork activities, including grading, are governed by the Los Angeles Building Code, which is contained in Los Angeles Municipal Code (LAMC), Chapter IX, Article 1. Furthermore, Section 64.70 of the LAMC sets forth the City's Stormwater and Urban Runoff Pollution Control Ordinance. Finally, Ordinance No. 181899 expands the applicability of the existing SUSMP requirements by imposing rainwater Low Impact Development (LID) strategies on projects that require building permits in order to mitigate the impacts of increased runoff and stormwater pollution as close to its source as possible.

b. Existing Conditions

(1) Regional

The Project Site is located within the greater Los Angeles area and lies within the Los Angeles Basin as designated by the Regional Water Quality Control Board (RWQCB). The Los Angeles Basin consists of the coastal areas of Los Angeles County, south of the divide of the San Gabriel Mountains and Santa Susana Mountains, plus a small part of the coastal portion of Ventura County, south of the divide of the Santa Monica Mountains.[1] This Basin is drained by four watersheds: the Los Angeles River; the Rio Hondo River; Ballona Creek; and the San Gabriel River. Numerous tributaries discharge into these major drainages, most of which have intermittent flow. With the exception of a few rivers in the mountainous areas, most of the tributaries have been converted to flood control channels lined with concrete and stone rip-rap. As shown in Figure IV.H.1-1 on page IV.H.1-4, the Project Site is specifically located within the Santa Monica Bay Watershed Management Area (WMA) of the Los Angeles Basin. As indicated by the Los Angeles Regional Water Quality Control Board (LARWQCB), surface water flows in the Santa Monica Bay through 28 catchment basins that can be grouped into nine subwatershed areas, based on their geographic characteristics, as illustrated in Figure IV.H.1-2 on page IV.H.1-5.[2] As shown therein, the nine subwatershed areas within the Santa Monica Bay WMA include the North Coast, Malibu Creek, Topanga Creek, Santa Monica Canyon, Pico Kenter, Ballona Creek, El Segundo LAX, South Bay, and Palos Verdes, with Malibu Creek and Ballona Creek being the two largest watersheds. As shown in Figure IV.H.1-3 on page IV.H.1-6, within the Santa Monica Bay WMA, the Project Site is specifically located within the Ballona Creek subwatershed area.

(a) Santa Monica Bay Watershed Management Area

As indicated above, the Project Site is located within the Santa Monica Bay WMA of the Los Angeles Basin. According to the Santa Monica Bay WMA Summary prepared by the LARWQCB, many of the beneficial uses of the WMA have been impaired or are

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1 *Water Quality Control Plan: Los Angeles Region Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, Los Angeles Regional Water Quality Control Board, www.swrcb.ca.gov/rwqcb4/water_issues/programs/basin_plan/, accessed October 17, 2011.*

2 *LARWQCB. State of the Watershed—Report on Water Quality, The Santa Monica Bay Watershed Management Area, 2nd Edition, November 2011, www.swrcb.ca.gov/rwqcb4/water_issues/programs/regional_program/wmi/ws_santamonica.shtml, accessed January 12, 2012.*

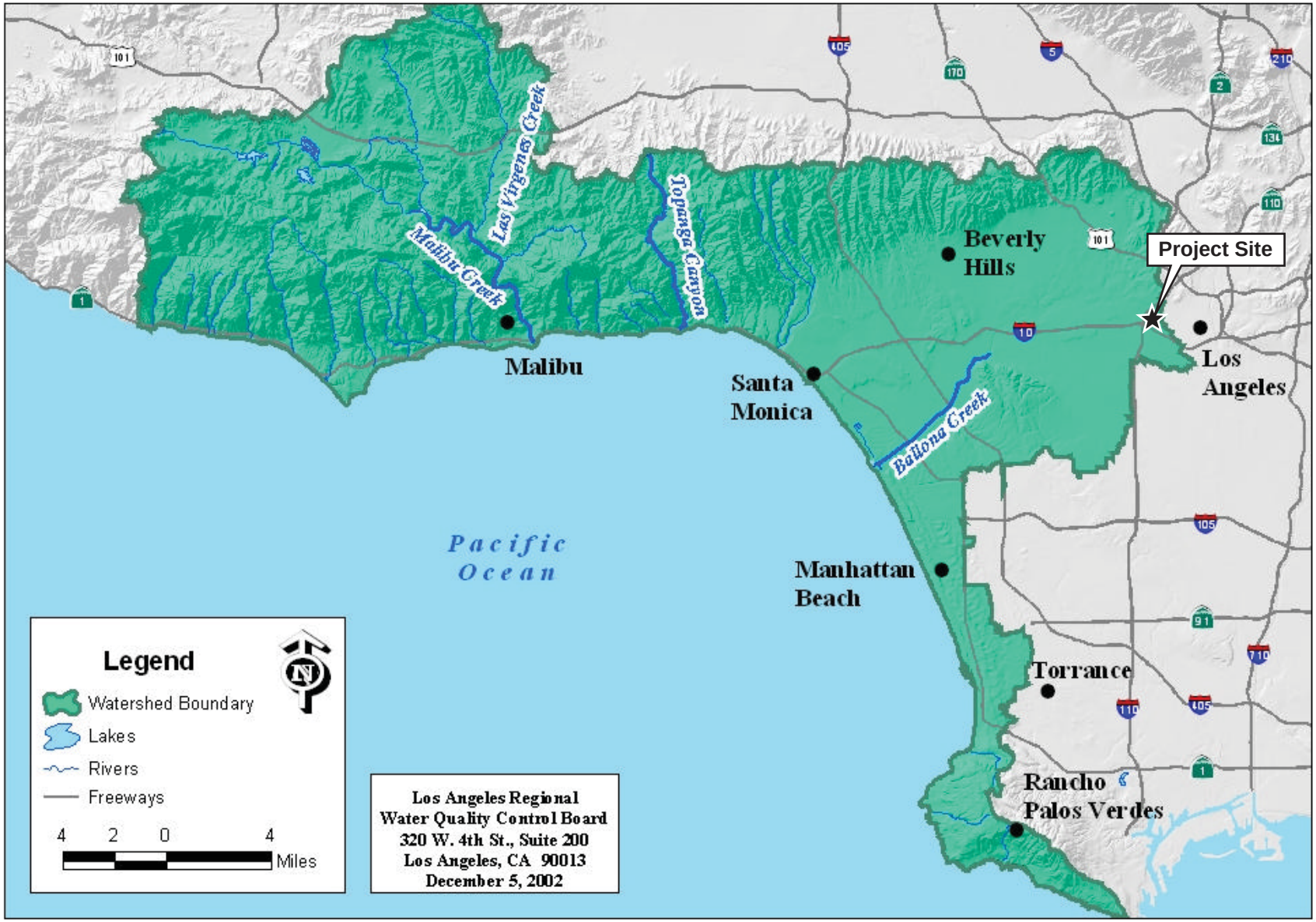

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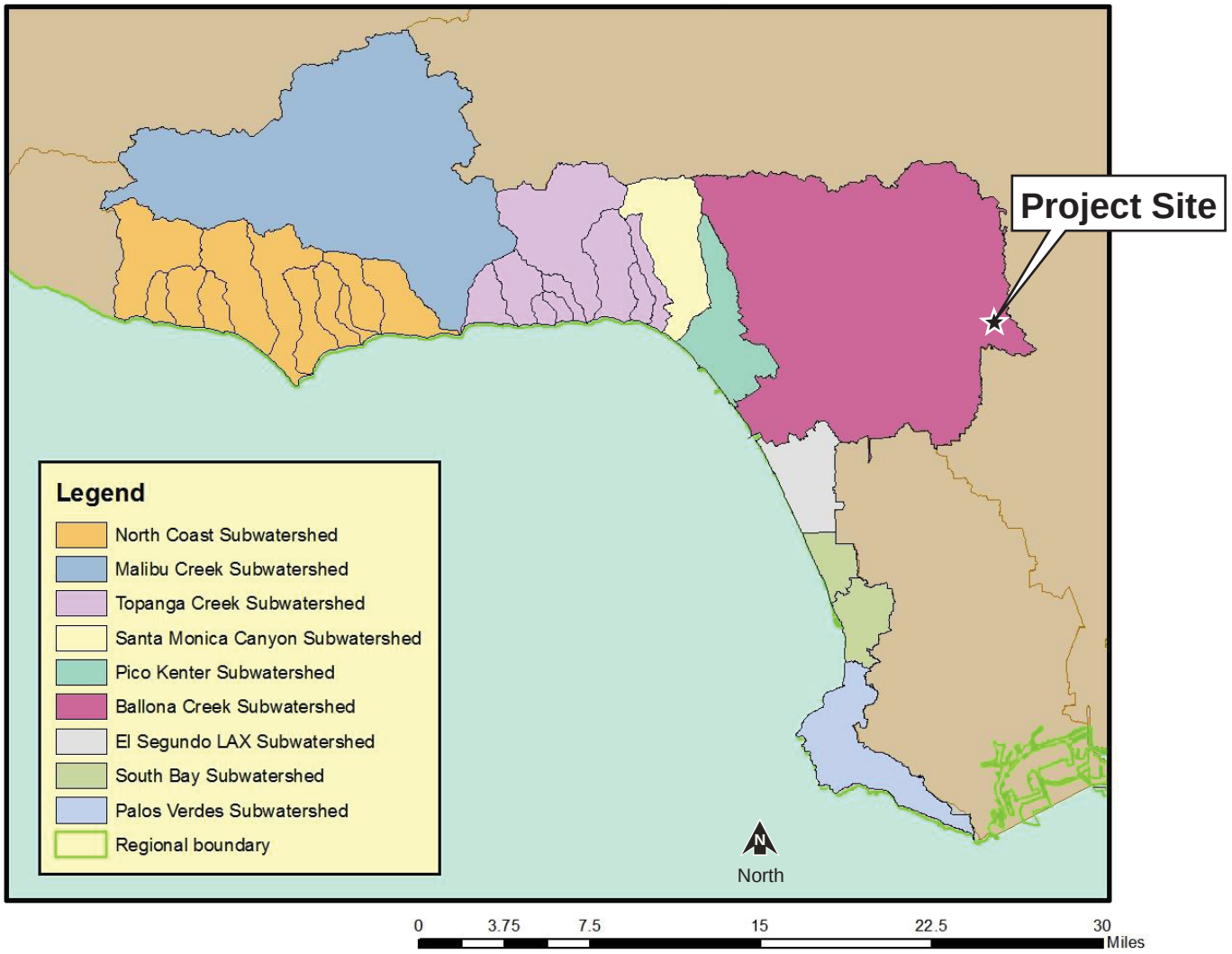
Figure IV.H.1-1
Santa Monica Bay Watershed Management Area

Source: Los Angeles Regional Water Quality Control Board, December 5, 2002



Source: State of the Watershed - Report on Water Quality Santa Monica Bay Watershed Management Area 2nd Edition, November 2011.

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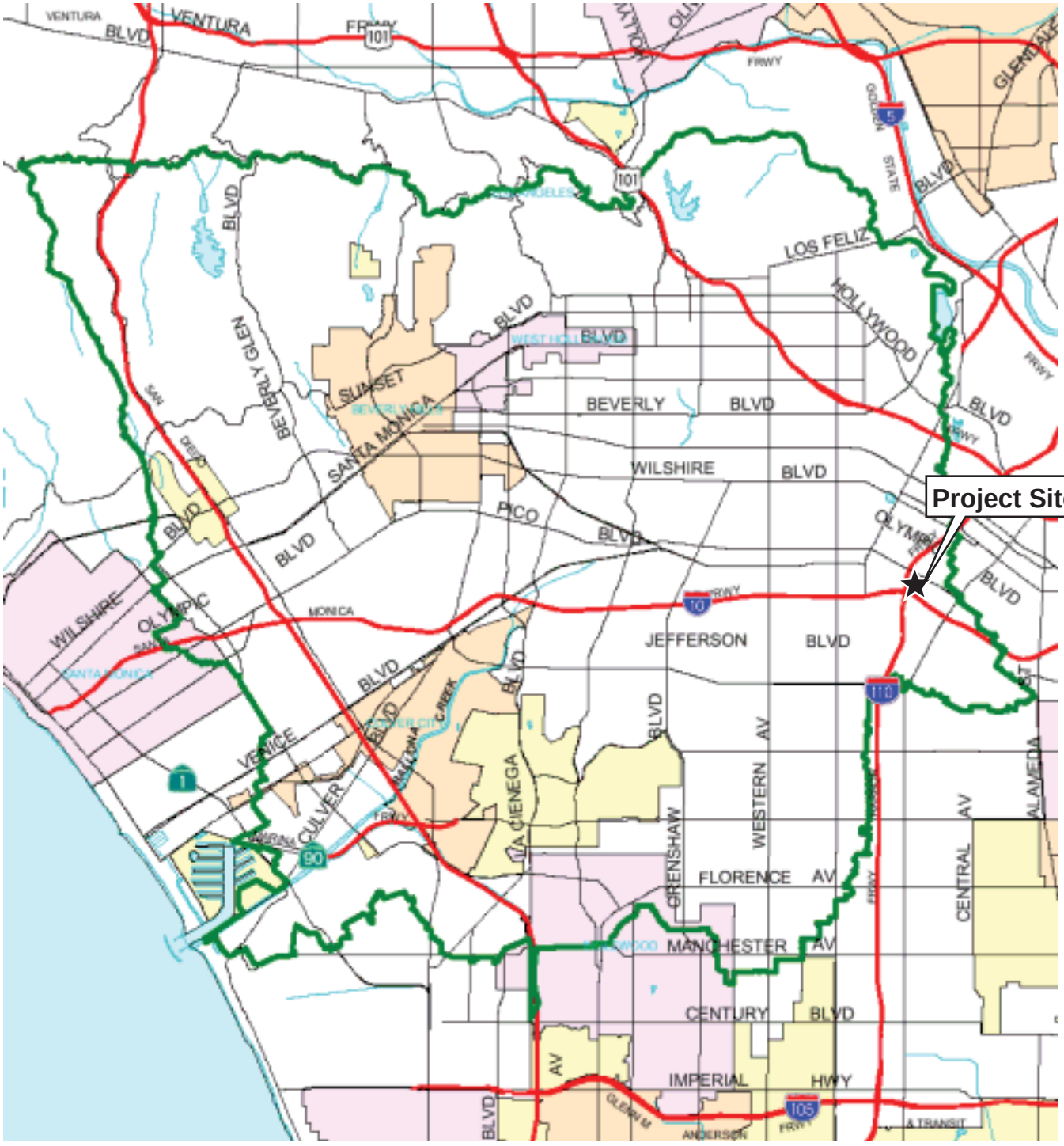
Figure IV.H.1-2
Subwatersheds and Catchment Areas of the
Santa Monica Bay Watershed Management Area



Source: Los Angeles County Department of Public Works, 2011.

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Figure IV.H.1-3
Ballona Creek Watershed

threatened to be impaired due to pollutant loadings originating from human activities.[3] Dischargers permitted under the Los Angeles County's NPDES Municipal Permit or individual permits for discharging to the Santa Monica Bay WMA include the following:

- 193 NPDES dischargers, including seven major NPDES permit dischargers, three Publicly Owned Treatment Works (two with direct ocean discharge), one refinery, and three generating stations;
- 175 dischargers covered under general permits;
- 87 dischargers covered by an industrial stormwater permit; and
- 401 dischargers covered by the construction stormwater permit.

A majority of the 193 NPDES permitted dischargers are located in the Ballona Creek watershed. Moreover, a large number of the general industrial stormwater permitted facilities drain to Ballona Creek.

(b) Ballona Creek

As previously described, the Project Site is located within the Ballona Creek watershed. Ballona Creek is a nine-mile long flood protection channel that drains the Los Angeles Basin extending to the Santa Monica Mountains on the north, roughly the I-110 Harbor Freeway to the east (a small portion of the watershed, which includes the Project Site, extends east of the I-110 Harbor Freeway), and the Baldwin Hills to the south. The Ballona Creek Watershed includes approximately 130 square miles. The Ballona Creek watershed is comprised of all or parts of the Cities of Beverly Hills, Culver City, Inglewood, Los Angeles, Santa Monica, West Hollywood, and unincorporated Los Angeles County. The Ballona Creek Watershed is comprised of approximately 64 percent residential uses, 8 percent commercial uses, 4 percent industrial uses, and 17 percent open space.[4]

The tributaries to the Ballona Creek include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous storm drains. Ballona Creek is

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[3] *Santa Monica Bay Watershed Management Area Plan Summary, Los Angeles Regional Water Quality Control Board, www.swrcb.ca.gov/rwqcb4/water_issues/programs/regional_program/wmi/ws_santamonica.shtml, accessed online on October 17, 2011.*

[4] *Los Angeles County Department of Public Works. Los Angeles County Department of Public Works: Ballona Creek Watershed, July 5, 2011, http://ladpw.org/wmd/watershed/bc/. Note that data, as reported, regarding the percentage of land uses within the Ballona Creek Watershed are approximate and do not total 100 percent.*

designed to discharge to Santa Monica Bay at approximately 71,400 cubic feet per second from a 50-year frequency storm event.

The CWA sets forth water quality standards and criteria based on a water body's designated beneficial uses through preparation of a 303(d) list. This list identifies those water bodies that are not achieving water quality standards or receiving beneficial uses and for what pollutants. Once a water body is identified as impaired, a TMDL for the constituent of concern (pollutant) must be developed for that water body. 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. Ballona Creek is listed on the 2010 CWA Section 303(d) List for the following pollutants: cadmium (sediment), coliform bacteria, dissolved copper, cyanide, lead, selenium, toxicity, trash, and viruses.[5]

(2) Local

The Project Site is located in downtown Los Angeles and is bounded on the west by the I-110 Freeway, on the north by Chick Hearn Court, on the east by Figueroa Street and on the south by Venice Boulevard. As shown in Figure IV.H.1-4 on page IV.H.1-9, three tributary areas contribute stormwater runoff to and from the Project Site. Stormwater runoff from on and off-site is conveyed through and within the Project Site by three existing storm drains, which are tributary to Ballona Creek. These include a 54-inch storm drain located near the intersection of Venice Boulevard and the I-10 off-ramp, a 42-inch storm drain main located adjacent to the Cherry Street Garage, and a 33-inch storm drain main located adjacent to the Bond Street Parking Lot. Tributary areas that drain into these storm drains include tributary areas 1, 2, and 3. Tributary area 1 (T-1) encompasses 246.06 acres, including an approximately 42.79-acre portion comprising most of the eastern half of the Project Site, with the remaining area extending off-site. Tributary area 2 (T-2) encompasses 26.98 acres, including an approximately 10.98-acre portion that comprises the northern portion of the West Hall and the areas of the existing Cherry Street Garage and Bond Street Parking Lot, with the remaining area extending off-site. Tributary area 3 (T-3) encompasses 19.09 acres, including an approximately 17.96-acre portion that comprises the majority of the western portion of the Project Site, with the remaining area extending off-site. The 54-inch storm drain main collects surface water from T-1, the 42-inch storm drain main collects surface water runoff from T-2, and the 33-inch storm drain main collects surface water runoff from T-3.

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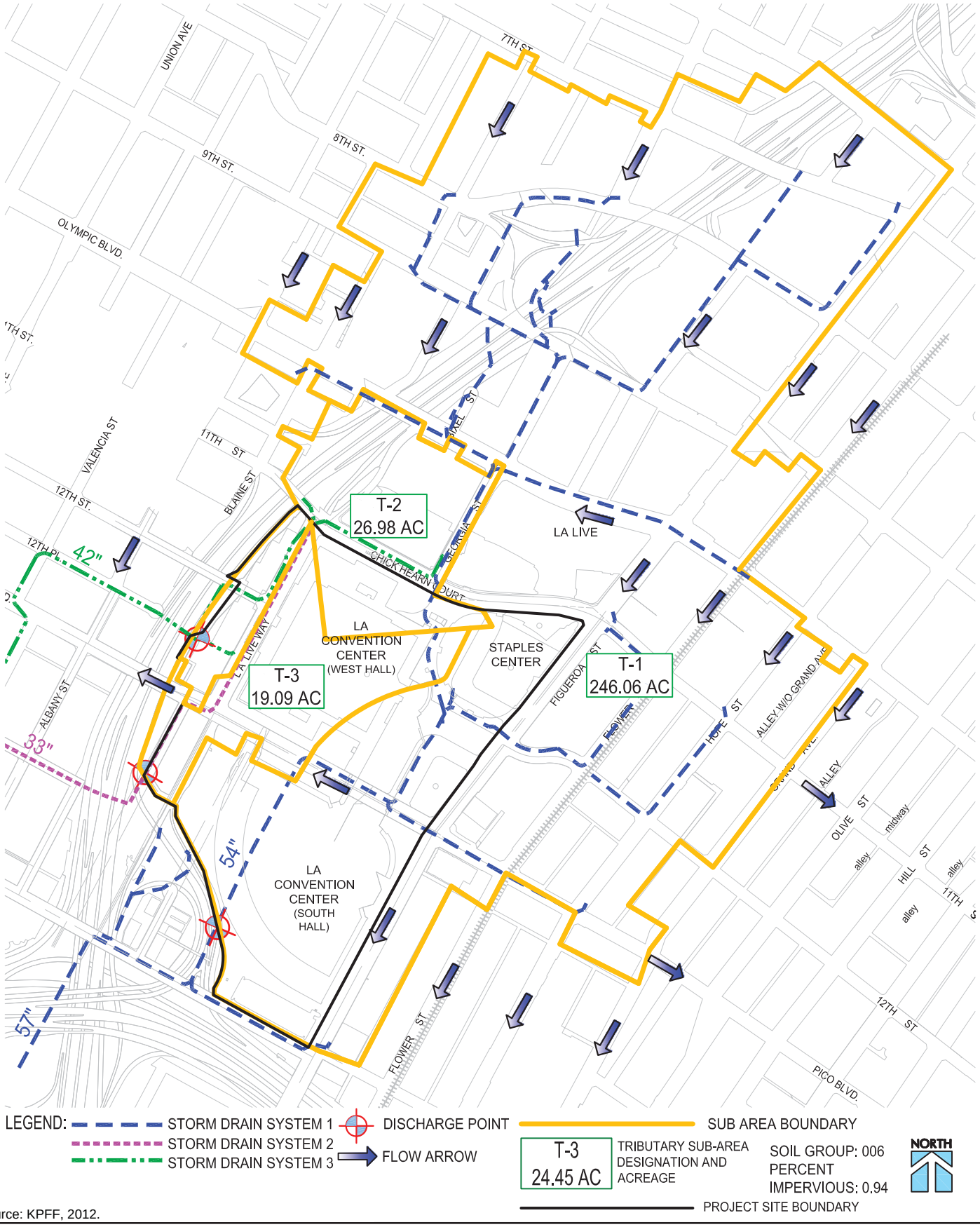
[5] *California Environmental Protection Agency, State Water Resources Control Board. 2010 Integrated Report on Water Quality with Web-Based Interactive Map, April 2010, www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml, accessed December 9, 2011.*



Source: KPFF, 2012.

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Figure IV.H.1-4
Existing Hydrology and Storm Drain System in Project Vicinity

The existing Project Site is generally flat and is covered by approximately 94 percent of impervious surfaces including buildings, surface parking lots, and city streets. Storm drain inlets within the Project Site boundaries currently collect surface water runoff from the existing site. Catch basin inlets within L.A. Live Way, Pico Boulevard, and Figueroa Street capture any off-site runoff. Stormwater runoff is conveyed from the Project Site to the storm drain system by a network of pipes, ultimately discharging to the public storm drain system owned, operated and maintained by the City of Los Angeles.

As described above, the Project Site falls within tributary areas 1, 2, and 3. Tributary areas 1 and 2 extend off-site but flow across the Project Site. As shown in Figure IV.H.1-5 on page IV.H.1-11, based on the City of Los Angeles Drainage Maps, the Project Site is further divided into seven drainage basins. Existing runoff flows during a 50-year storm event for the seven drainage basins of the Project Site are provided in Table IV.H.1-1 on page IV.H.1-12.

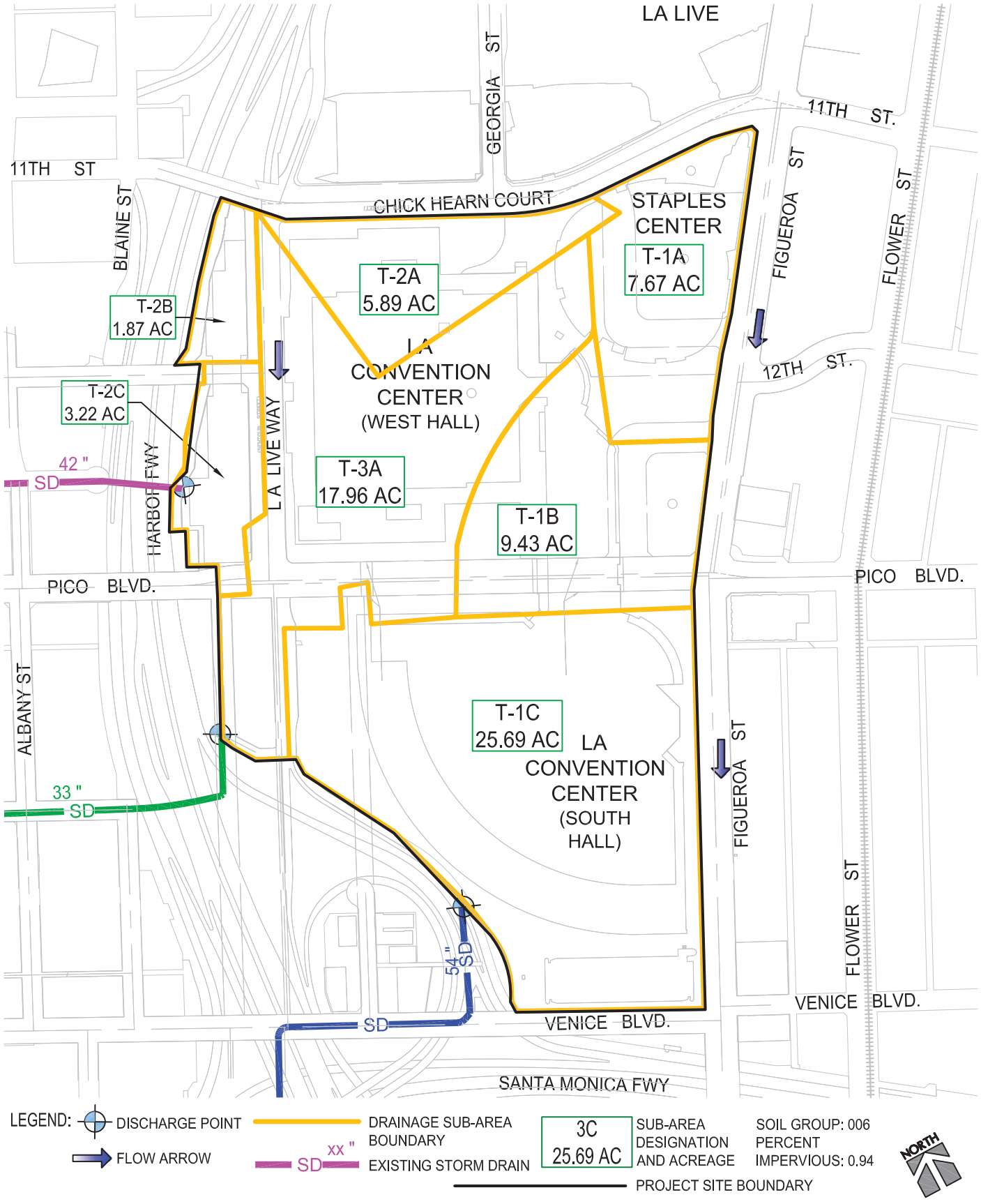
Since the majority of the Project Site is developed with buildings and pavements that cover virtually the entire site footprint, these impervious surfaces eliminate the potential of natural soils and vegetation to absorb pollutants and promote infiltration. Pollutants of concern that have the potential to affect stormwater quality generally fall into one of the following seven categories: sediments; nutrients; bacteria/viruses; oil/grease; metals; organics; and pesticides. These pollutants of concern are described below:

- Sediment is a common component of stormwater and can also be a pollutant. Sediment can also transport other pollutants that are attached to it, including nutrients, trace metals, and hydrocarbons. Sediment is the primary component of turbidity, total suspended solids (TSS), and suspended sediment concentration (SSC).

- Nutrients, including nitrogen and phosphorus, are the major plant nutrients when fertilizing landscape areas and can often be found in stormwater. These nutrients can result in excessive growth of vegetation and algae, creating an impaired use of water in lakes and other sources of water supply.

- Oil and grease include a wide variety of hydrocarbon compounds, some of which are toxic to aquatic organisms. Sources of oil and grease include leakage and spills associated with vehicle engines, restaurants, and waste oil disposal.

- Metals including lead, zinc, cadmium, copper, chromium, and nickel are commonly found in stormwater. Many artificial surfaces contain metals, which enter stormwater as the surfaces corrode, flake, dissolve, etc. Over half of the trace metal load carried in stormwater is associated with sediments. Metals are of concern because some are toxic to aquatic organisms and have the potential to contaminate drinking water supplies.



Source: KPFF, 2012.

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Figure IV.H.1-5
Existing On-Site Hydrology

Table IV.H.1-1
Existing 50-Year Storm Event Flow Rate

Drainage Basin	Area (acres)[a]	Existing Flow Rate (cfs)
1A	7.67	15.36
1B	9.43	19.72
1C	25.69	46.41
2A	5.89	12.90
2B	1.87	4.54
2C	3.22	7.05
3A	17.96	29.09

cfs = cubic feet per second

[a] *Area includes approximately 3.73 acres of public streets surrounding and traversing the Project Site.*

Source: KPFF Consulting Engineers, February 2012.

- Synthetic organics can be found in stormwater in low concentrations. Synthetic organic compounds are often widely applied and have the potential for being improperly stored and disposed of. Additionally, deliberate dumping of these chemicals into the storm drains and inlets causes environmental harm to waterways.

- Pesticides have been detected repeatedly in stormwater at levels toxic to certain organisms. Stormwater can transport pesticides from target areas into receiving waters where they may impact non-target animals such as invertebrates and fish.

- Gross pollutants, also referred to as floatables, typically result from industrial and construction sites, creating an aesthetic "eye sore" in waterways. Gross pollutants also include plant debris, street litter, animal excrement, and other organic matter. Such of these substances may harbor bacteria and viruses, causing fish kills.[6]

[6] *California Stormwater Quality Association. Stormwater Best Management Practices Handbook: Construction, 2009.*

(3) Flood Zone

Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the Project Site, the Project Site is located within a Zone X (unshaded) area.[7] Zone X (unshaded) is classified by FEMA as areas determined to be outside of the 0.2 percent annual chance of flooding (i.e., 500-year return period/frequency) and protected by a levee from a 100-year flood.[8] The Project Site is not located within a 100-year flood zone as indicated in the FEMA FIRM for the Project Site. Therefore, the Proposed Project would not impede or re-direct flows within a 100-year flood hazard area, and further analysis of this issue is not warranted.

3. Environmental Impacts

a. Methodology

The analysis of potential impacts to surface water hydrology and surface water quality is based in part on the Hydrology Technical Report and the Surface Water Quality System Technical Report, both prepared by KPFF Consulting Engineers. These reports are provided in Appendix O and P of this Draft EIR.

As discussed in the Regulatory Framework Section, the City has adopted the Los Angeles County Department of Public Works Hydrology Manual as its basis of design for storm drainage facilities. The Los Angeles County Department of Public Works' Hydrology Manual requires that a storm drain conveyance system be designed for a 25-year storm event. The 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. A 25-year frequency design storm has a 1/25 probability of being equaled or exceeded in any year. As described below, the City of Los Angeles CEQA Thresholds Guide establishes the 50-year frequency design storm event as the threshold to evaluate potential impacts on surface water hydrology. Thus, to provide a more conservative analysis of the ability of storm drain infrastructure to accommodate the demand generated by the Proposed Project, the Hydrology Technical Report uses the 50-year frequency design storm event.

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[7] *Federal Emergency Management Agency. Map Service Center—Flood Maps, https://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1&userType=G, accessed December 29, 2011.*

[8] *Refer to page 6 of the Convention Center and Event Center Project Hydrology Technical Report, included as Appendix O.*

The analysis of surface water quality impacts identifies the types of pollutants associated with construction and operation of the Proposed Project and considers their potential effects on surface water quality. Consideration is given to Project Design Features that would minimize polluted stormwater runoff.

b. Thresholds of Significance

Appendix G of the CEQA Guidelines provides a set of sample questions that address impacts with regard to hydrology and water quality. These questions are as follows:

Would the project:

- Violate any water quality standards or waste discharge requirements?
- 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 hazard area as mapped on federal Flood Hazard Boundary or Flood Insurance Rate Maps or other flood hazard delineation maps?
- Place within a 100-year flood hazard area 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?
- Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?

(1) Surface Water Hydrology

In the context of the above questions from Appendix G of the CEQA Guidelines, the City of Los Angeles CEQA Thresholds Guide states that a project would normally have a significant impact on surface water hydrology if it would:

- 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

In the context of the above questions from Appendix G of the CEQA Guidelines, the City of Los Angeles CEQA Thresholds Guide states that a project would normally have a significant impact on surface water quality if it would:

- Result in discharges that would create pollution, contamination or nuisance as defined in Section 13050 of the California Water Code (CWC) 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.

c. Project Design Features

In compliance with NPDES and City requirements, BMPs would be implemented to address water quality during both construction and operation of the Proposed Project. The final selection of BMPs would be completed through coordination with the City as part of the building permit process subsequent to environmental review.

(1) Construction

To address stormwater runoff during construction activities for the Proposed Project, the Project Applicants would prepare and implement a site-specific SWPPP. In addition, the Project Applicants would be required to comply with City grading permit regulations, which require necessary measures, plans, and inspections to reduce sedimentation and erosion. The SWPPP would specify BMPs to be used during construction. BMPs to be implemented as part of the Proposed Project would 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 BMP would be based on minimizing areas of disturbance, stabilizing disturbed areas, and protecting slopes/channels. Such BMPs may include, but would not be limited to, use of geotextiles and mats, earth dikes, drainage swales, and slope drains;

- 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 BMP would be based on keeping sediments on site and controlling the site boundaries. Such BMPs may include, but would not be limited, to use of silt fences, sediment traps, and sandbag barriers, street sweeping and vacuuming, and storm drain inlet protection;

- 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. All sites 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, which 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.

(2) Operation

With regard to operation, the Project Applicants would prepare and implement SUSMP requirements throughout the operational life of the Proposed Project. The SUSMP features for the Project Site would outline the stormwater treatment measures or post-construction BMPs required to control pollutants associated with storm events up to the 0.75-inch precipitation level, per the City's Stormwater Program. The BMPs to be implemented with the Proposed Project would ensure that at a minimum no increase in flows would result with the Proposed Project. In addition, stormwater BMPs to address water quality in stormwater runoff would be incorporated into the design of the Proposed Project and outlined in the SUSMP. BMPs would include source control and treatment control BMPs. The final list of BMPs to be completed as part of SUSMP requirements would be subject to City review for compliance with the City's *Development Best*

Management Practices Handbook, Part B Planning Activities and the *SUSMP Infiltration Requirements and Guidelines*.

Specific BMPs to be implemented as part of the SUSMP for the Proposed Project to manage post-construction stormwater run-off would include, but not be limited to, the following:

- Promote evapotranspiration and infiltration by increasing the overall footprint of landscaped areas and promoting the use of native and/or drought tolerant plants. The proposed Project Site would slightly increase the overall amount of pervious surface;
- Provide storm drain system stenciling and signage to discourage illegal dumping;
- Design material storage areas and loading docks within structures or enclosures to prevent leaks or spills of pollutants from entering the storm drain system;
- Provide evidence of ongoing BMP maintenance as part of a legal agreement with the City of Los Angeles. Recorded covenant and agreements for BMP maintenance are part of standard building permit approval processing; and
- Design post-construction structural or treatment control BMPs to either treat or infiltrate stormwater runoff. Stormwater treatment facilities and systems would be designed to meet the requirements of the SUSMP manual.
  - Volumetric Treatment Control BMPs would be designed to capture the volume of runoff from a 0.75-inch storm event, prior to discharging to the public storm drain system.
  - Flow based Treatment Control BMPs would be designed to the same standards as the volume-based control BMPs. The flow of runoff produced from the storm event shall be equal to or at least 0.2 inch per hour.
  - Treatment devices shall be sized and designed to meet the above requirements outlined in the SUSMP manual.

The Proposed Project would also comply with the LID standards, which are intended to promote the use of natural infiltration systems, evapotranspiration, and the reuse of stormwater. The goal of these LID practices is to remove nutrients, bacteria, and metals from stormwater, while also reducing the quantity and intensity of stormwater flows. Through the use of various infiltration strategies, LID is aimed at minimizing impervious

surface area. Where infiltration is not feasible, capture and reuse BMPs or biofiltration BMPs that will store, evaporate, detain, and/or treat runoff may be used.[9] BMPs that may be used at the Project Site are described as follows:

- 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. However, conditions that can limit the use of infiltration include soil properties, proximity to building foundations and other infrastructure, geotechnical hazards (e.g., liquefaction, landslides), and potential adverse impacts on groundwater quality (e.g., industrial pollutant source areas, contaminated soils, groundwater plumes). To ensure that infiltration would be physically feasible and desirable (i.e., not have adverse impacts), a categorical screening of site feasibility criteria must be completed prior to the use of infiltration BMPs.

- Capture and Use refers to a specific type of BMP that operates by capturing stormwater runoff and holding it for efficient use at a later time. On a commercial or industrial scale, capture and use BMPs are typically cisterns, which can be implemented both above and below ground. Cisterns are sized to store a specified volume of water with no surface discharge until this volume is exceeded. The primary use of captured runoff is for subsurface drip irrigation purposes. The temporary storage of roof runoff reduces the runoff volume from a property and may reduce the peak runoff velocity for small, frequently occurring storms. In addition, by reducing the amount of stormwater runoff that flows overland into a stormwater conveyance system, fewer pollutants are transported through the conveyance system into local streams and the ocean. The onsite use of the harvested water for non-potable domestic purposes conserves City-supplied potable water and, where directed to unpaved surfaces, can recharge groundwater in local aquifers.

- Biofiltration BMPs are landscaped facilities that capture and treat stormwater runoff through a variety of physical and biological treatment processes. Facilities normally consist of a ponding area, mulch layer, planting soils, plants, and in some cases, an underdrain. Runoff that passes through a biofiltration system is treated by the natural adsorption and filtration characteristics of the plants, soils, and microbes with which the water contacts. Biofiltration BMPs include

[9] *City of Los Angeles. Low Impact Development Best Management Practices Handbook. June 2011.*

vegetated swales, filter strips, planter boxes, high flow biotreatment units, bio-infiltration facilities, and bioretention facilities with underdrains. Biofiltration can provide multiple benefits, including pollutant removal, peak flow control, and low amounts of volume reduction through infiltration and evapotranspiration.

In addition, as the majority of pollutants of concern for stormwater runoff are captured and filtered out by soils, except for nitrates often used in landscaping fertilizers, both Project Applicants would control nitrates through the selection of native plants and minimal use of nitrogen-based fertilizers in on-going landscape maintenance.

d. Project Impacts

(1) Hydrology

(a) Construction

Construction activities associated with the Proposed Project would include the removal of the existing West Hall, parking areas, plazas/paving and landscaping as well as grading and excavation. It is anticipated that up to approximately 866,900 cubic yards of soil would be graded and exported to construct the Proposed Project. Such activities have the potential to temporarily alter existing drainage patterns and flows by exposing the underlying soils and making the Project Site temporarily more permeable. However, construction of new drainage facilities would be required in a manner and sequence that would preclude flooding. Specifically, any new storm drain connections would be installed to support development and would be in place and functioning as development progresses to serve their respective catchments. Installation of the new connections would primarily occur on-site and the new connections would be sized appropriately to convey runoff to the existing storm drain piping network in accordance with City standards.

In addition, as discussed below in Section (2), Surface Water Quality, during construction, a SWPPP would be implemented to provide for temporary stormwater management. This plan would prevent construction from adversely affecting the amount of surface water in a water body. In addition, the Proposed Project would be required to comply with applicable City grading permit regulations that require necessary measures, plans, and inspections to reduce sedimentation and erosion. Thus, with preparation and implementation of a SWPPP, compliance with applicable City grading regulations, and installation of new storm drain facilities, as applicable, construction of the Proposed Project would not cause flooding, substantially increase or decrease the amount of surface water in a water body, or result in a permanent, adverse change to the movement of surface water. As such, construction-related impacts to hydrology would be less than significant.

(b) Operations

As described above, 94 percent of the Project Site footprint currently comprises impervious surfaces. Implementation of the Proposed Project would develop new buildings, paved areas, and landscaped areas. Through the provision of additional landscaped areas, the Proposed Project would serve to reduce the area of impervious surfaces from 94 percent to 93 percent. Thus, as shown in Table IV.H.1-2 on page IV.H.1-21, the comparison between existing and proposed conditions shows that the Proposed Project would not result in an incremental increase in stormwater runoff flows and therefore would not adversely impact the existing storm drain system. In addition, the additional landscaped areas to be provided by the Proposed Project would allow for more opportunities to direct stormwater to flow through the planting media, thereby reducing the amount of runoff flows. Moreover, as shown in Figure IV.H.1-6 on page IV.H.1-22, runoff from the Project Site would continue to follow the same discharge paths and drain to the same outlet pipes as under existing conditions. Additionally, as discussed below in Section (2), Surface Water Quality, SUSMP and LID requirements would be implemented throughout the operational life of the Project. As part of these, requirements, BMPs would be implemented to ensure that at a minimum, no increase in flows from existing conditions would result with the Proposed Project. Since the Proposed Project peak flow rates are unchanged from the existing peak flow rates, detention facilities are not required for hydrologic purposes. Thus, the Proposed Project would not result in on or off-site flooding during a 50-year storm event, would not substantially reduce or increase the amount of surface water in a water body, and would not result in a permanent adverse change to the movement of surface water.

In addition, runoff within the Project Site would continue to follow the same discharge paths and drain to the same storm drains as under existing conditions. Based on the above, potential impacts to surface water hydrology during Proposed Project operation would be less than significant.

As stated above, the Project Site is not located within a FEMA or City of Los Angeles designated 100- or 500-year flood plain. In addition, the Proposed Project does not include a residential component. However, according to the City of Los Angeles General Plan Safety Element, within Project Site, the southeast corner of Venice Boulevard and Figueroa Street, is located within a potential inundation area. This area includes a small portion of the existing Venice Boulevard Garage, which would remain under the Proposed Project. Except for this area, none of the Project Site is located within a potential inundation area.

Table IV.H.1-2
Post-Project 50-Year Storm Event Flow Rate

Drainage Area	Area (acres)[a]	Proposed Flow Rate	Incremental Change from Existing to Proposed Condition (%)[b]
1A	7.67	15.36	0
1B	9.43	19.72	0
1C	25.69	46.41	0
2A	5.89	12.90	0
2B	1.87	4.54	0
2C	3.22	7.05	0
3A	17.96	29.09	0

[a] *Area includes approximately 3.73 acres of public streets surrounding and traversing the Project Site.*

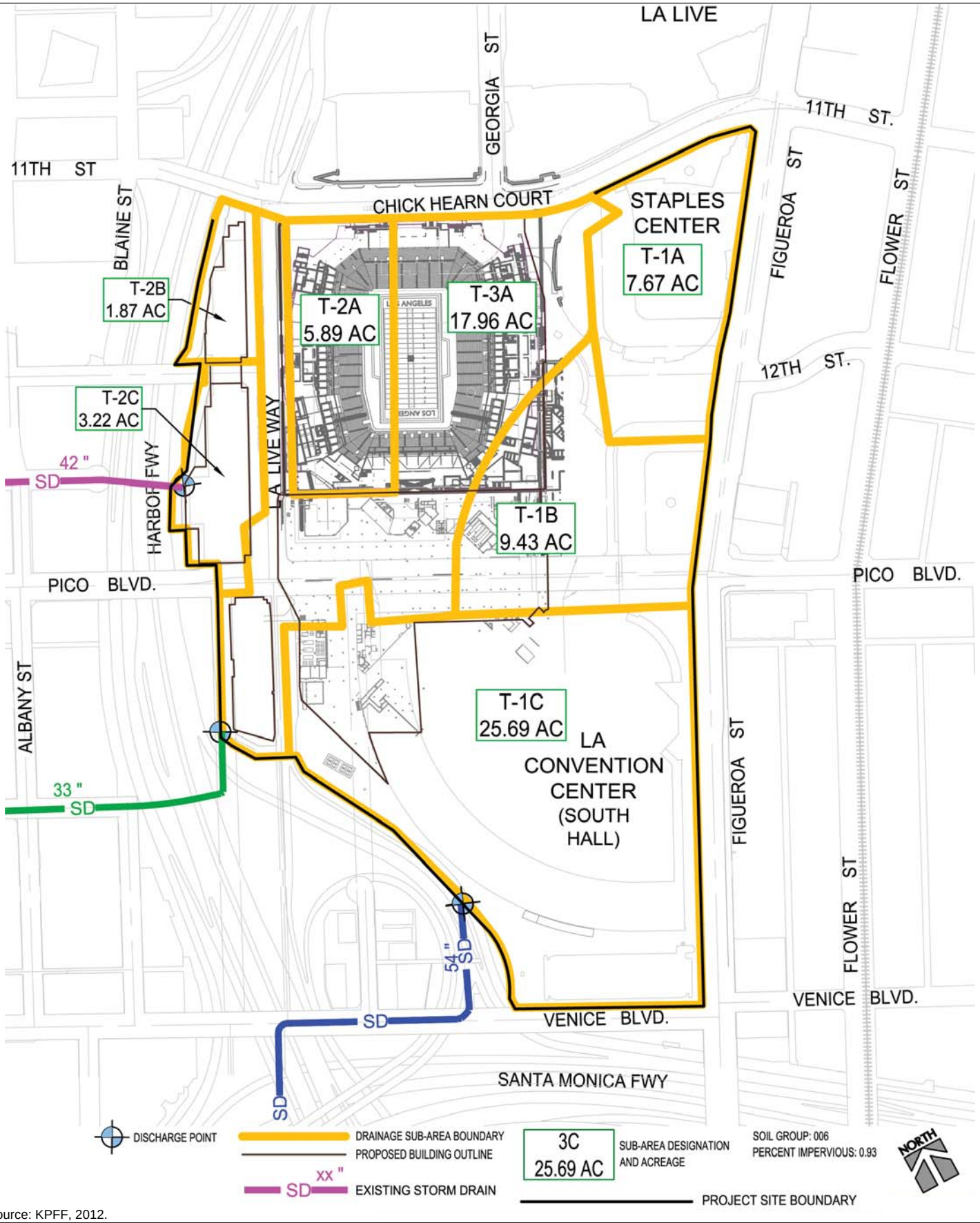
[b] *The analysis from the Tc Calculator shows that the Proposed Project would result in a slight decrease in impervious surface area (from 94 percent to 93 percent). Thus, a corresponding small, negligible decrease in the peak flow rate would occur. Due to numeric rounding limitations within the software, the incremental decrease in the peak flow rate is shown as zero.*

Source: KPFF Consulting Engineers, February 2012.

Dam safety regulations are the primary means of reducing damage or injury due to inundation occurring from dam failure.[10] The California Division of Safety of Dams regulates the siting, design, construction, and periodic review of all dams in the State. Mitigation of potential seiche hazards has also been implemented by the Los Angeles Department of Water and Power through regulation of the level of water in its storage facilities and the provision of walls of extra height to contain seiches and prevent overflow or inundation. In addition, dams and reservoirs are monitored during storms, and measures are instituted in the event of potential overflow. These measures apply to facilities within the City's borders and facilities owned and operated by the City within other jurisdictions.[11] Appropriate measures to be implemented in the event of potential overflow are specific to each dam and are based on the risk level associated with the dam. The City determines the risk of each dam that would impact the City based on the age and design of

[10] *City of Los Angeles, Department of City Planning, Los Angeles Citywide General Plan Framework, Draft Environmental Impact Report, January 19, 1995, pages 2.17-38 and 2.17-40.*

[11] *City of Los Angeles, Department of City Planning, Safety Element of the Los Angeles General Plan, adopted by the City Council November 26, 1996, page II-16.*



Source: KPFF, 2012.

matrix environmental

Figure IV.H.1-6
Proposed On-Site Hydrology

the dam, the holding capacity, as well as the density of existing and planned development within the inundation area.[12] In addition, the City's Local Hazard Mitigation Plan 2011, contains a comprehensive set of more than 400 hazard mitigation projects and programs designed to reduce the potential risks associated with the hazard categories identified in the City's Local Hazard Mitigation Plan 2011, including dam failure. Mitigation measures include a broad range of approaches to hazard mitigation including retrofit/relocation, code enforcement, development of new regulations, public education, surveillance and security, development of redundant facilities, among others.[13]

Based on the above, the risk of flooding from inundation by a seiche or a dam failure is considered low. Therefore, the Proposed Project would not expose people to substantial risk of injury due to inundation by a dam or a seiche. Impacts related to inundation by seiche/dam failure would be less than significant.

(2) Surface Water Quality

(a) 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 previously discussed, construction contractors disturbing greater than 1 acre of soil would be required to obtain coverage under the NPDES General Construction Activity Permit (Order No. 2009-0009-SWQ). In accordance with the requirements of the permit, the Project Applicants would prepare and implement a site-specific SWPPP. The SWPPP would specify BMPs to be used during construction. BMPs would include but not be limited to erosion control, sediment control, and non-stormwater management and materials management BMPs.

With implementation of these BMPs included as part of the SWPPP, the Proposed Project would reduce or eliminate the discharge of potential pollutants from the stormwater runoff to the maximum extent practicable. In addition, the Project Applicants would be required to comply with City grading permit regulations, which require standard measures, plans (including a wet weather erosion control plan if construction occurs during the rainy season), and inspections to reduce sedimentation and erosion. Therefore, with compliance with NPDES requirements and City grading regulations, construction of the Proposed

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[12] *City of Los Angeles, Department of City Planning, Safety Element of the Los Angeles General Plan, adopted by the City Council November 26, 1996, page 2.17-66.*

[13] *City of Los Angeles, Emergency Management Department, Local Hazard Mitigation Plan 2011; http://emergency.lacity.org/index.htm, accessed March 19, 2012.*

Project would not result in discharges that would cause: (1) pollution that would alter the quality of the waters of the State (i.e., Ballona Creek) to a degree which unreasonably affects beneficial uses of the waters; (2) contamination 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; or (3) nuisance that would be injurious to health, affect an entire community or neighborhood or any considerable number of persons, and occurs during or as a result of the treatment or disposal of wastes. Furthermore, construction of the Proposed Project would not result in discharges that would cause regulatory standards to be violated in Ballona Creek. Therefore, construction-related short term impacts on surface water quality would be less than significant.

(b) Operations

As is typical of most major urban developments, stormwater runoff from the Project Site has the potential to introduce pollutants into the stormwater system. Anticipated and potential pollutants for the Proposed Project's various land uses are presented in Table IV.H.1-3 on page IV.H.1-25. The Proposed Project falls into the following categories that are subject to NPDES SUSMP requirements:

- A 100,000-square-foot or more impervious surface area industrial/commercial development;
- Restaurants of 5,000 square feet or more of surface area; and
- Parking lot of 5,000 square feet or more of surface area or with 25 or more parking spaces.

Therefore, in accordance with NPDES requirements, the Project Applicants would be required to prepare and implement SUSMP requirements throughout the operational life of the Proposed Project. Stormwater BMPs to address water quality in stormwater runoff would be incorporated into the design of the Proposed Project. As described above in subsection c, Project Design Features, BMPs would include source control and treatment control BMPs. Source control BMPs would be used to prevent pollutants from entering into stormwater discharges and may include effective site design and landscape planning, storm drain signage, properly managed maintenance bays and docks, properly managed trash storage areas, proper design and maintenance of outdoor material storage areas, and proper maintenance of structural/treatment control BMPS. Treatment BMPs remove pollutants from stormwater discharges and may include vegetative systems, vortex/ hydrodynamic systems, catch basin systems, infiltration/retention, pervious pavement, and media filtration. LID BMPs use the aforementioned to address infiltration, capture and use, and biofiltration, of stormwater runoff. In addition, the Proposed Project would reduce the percentage of impervious surfaces from 94 percent of the Project Site to 93 percent

Table IV.H.1-3
Anticipated and Potential Pollutants Generated by On-Site Land Uses

	Pathogens	Metals	Nutrients	Pesticides	Organic Compounds	Sediments	Trash & Debris	Oxygen Demanding Substances	Oil and Grease
Commercial/Industrial Development	P		P	P	P	P	A	P	A
Restaurants	A						A	A	A
Parking Lots		A	P	P		P	A	P	A
Streets, Highways, Freeways		A	P		A	A	A	P	A

A = Anticipated

P = Potential

Source: KPFF Consulting Engineers, February 2012.

through the installation of additional landscaped areas. The additional landscape areas provided by the Proposed Project would allow for more opportunities to direct stormwater to flow through the planting media where pollutants are filtered, absorbed, and biodegraded by the soil and plants, prior to infiltrating to the ground below. In addition, nitrates often used in landscaping fertilizers would be controlled through the selection of native plants and minimal use of nitrogen-based fertilizers in on-going landscape maintenance. As shown in Table IV.H.1-4 on page IV.H.1-27, different types of treatment BMPs target different pollutants and have different removal efficiencies.

With implementation of source control and treatment BMPs described in Table IV.H.1-4, which would be included as part of the SUSMP requirements to reduce the quantity and improve the quality of stormwater runoff that leaves the Project Site, and with the implementation of LID BMPs intended to promote the use of natural infiltration systems, evapotranspiration and the reuse of stormwater, the Proposed Project would reduce or eliminate the discharge of potential pollutants from the stormwater runoff to the maximum extent practicable and would result in a net reduction of pollutants compared to existing conditions. Therefore, operation of the Proposed Project would not result in discharges that would cause: (1) pollution which would alter the quality of the waters of the State (i.e., Ballona Creek) to a degree that unreasonably affects beneficial uses of the waters; (2) contamination of the quality of the waters of the State by waste to a degree that creates a hazard to the public health through poisoning or through the spread of diseases; or (3) a nuisance that would be injurious to health; affect an entire community or neighborhood, or any considerable number of persons; or occurs during or as a result of the treatment or disposal of wastes. Furthermore, operation of the Proposed Project would not result in discharges that would cause regulatory standards to be violated in Ballona Creek. Rather, the Proposed Project is anticipated to result in improved water quality due to the BMPs to be implemented. Thus, operational impacts on surface water quality would be less than significant.

4. Cumulative Impacts

The geographic context for the cumulative impact analysis on surface water hydrology and surface water quality is the Ballona Creek watershed. The Proposed Project in conjunction with forecasted 2017 growth in the Ballona Creek watershed (inclusive of the related projects) would cumulatively increase stormwater runoff flows potentially resulting in cumulative impacts to surface water hydrology. However, in accordance with City requirements, related projects and other future development projects would be required to implement BMPs such that post-development peak stormwater runoff discharge rates would not exceed the estimated pre-development rates. Furthermore, the City of Los Angeles Department of Public Works would review each future development project on a case-by-case basis to ensure that sufficient local and regional drainage capacity is

Table IV.H.1-4
Efficiency of Treatment Control BMPs by Target Pollutant[a]

	Sediments	Nutrients	Trash	Metals	Bacteria	Oil/Grease	Organics
Vegetated Swale	Medium	Low	Low	Medium	Low	Medium	Medium
Vegetated Buffer Strip	High	Low	Medium	High	Low	High	Medium
Vortex/Hydrodynamic System[b]	Medium	Low	Unknown	Low	Unknown	Unknown	Unknown
Catch Basins System[b]	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Infiltration/Retention	High	High	High	High	High	High	High
Media Filtration	High	Low	High	High	Medium	High	High

[a] *Low, Medium, and High are used to indicate how efficient a particular type of BMP is at reducing pollutants.*

[b] *Performance of system varies per manufacturer and model.*

Source: KPFF Consulting Engineers, February 2012.

available to accommodate stormwater runoff. Similar to the Proposed Project, forecasted growth in the Ballona Creek watershed also would be subject to NPDES requirements regarding water quality for both construction and operation. Moreover, since the identified related projects are generally in an already highly urbanized area, future land use changes or development are not likely to cause substantial changes in regional surface water quality. Additionally, it is anticipated that related projects and other future development projects would also be subject to SUSMP requirements and implementation of measures to comply with TMDLs. Increases in regional controls associated with other elements of the MS4 Permit also would improve regional water quality over time. Therefore, with compliance with all applicable laws, rules, and regulations, cumulative impacts on surface water hydrology and surface water quality would be less than significant.

5. Project Design Features and Mitigation Measures

a. Project Design Features

The following project design features shall be implemented as part of the Proposed Project:

Project Design Feature H.1-1: Prior to the issuance of a grading permit, the Project Applicants shall provide evidence to the City 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 General Construction Permit and a certification that a Storm Water Pollution Prevention Plan has been prepared. Such evidence shall consist of a copy of the Notice of Intent stamped

by the State Water Resources Control Board or Regional Board, or a letter from either agency stating that the Notice of Intent has been filed. The Stormwater Pollution Prevention Plan shall include a menu of Best Management Practices to be selected and implemented based on the phase of construction and the weather conditions to effectively control erosion.

Project Design Feature H.1-2: Prior to issuance of a B-Permit or building permit, the Project Applicants shall prepare and submit for review and approval a Standard Urban Stormwater Mitigation Plan that shall include Best Management Practices (e.g., infiltration systems, bio-filtration, structural treatment systems) and demonstrate compliance with Low Impact Development Ordinance requirements to the City of Los Angeles Department of Public Works or Department of Building and Safety, as applicable.

Project Design Feature H.1-3: The Project Applicants shall control nitrates through the selection of native plants and minimal use of nitrogen-based fertilizers in on-going landscape maintenance.

b. Mitigation Measures

With compliance with regulatory requirements and implementation of the project design features described above, Project-level impacts on surface water hydrology and surface water quality would be less than significant. In addition, cumulative impacts on surface water hydrology and surface water quality would be less than significant. Therefore, no mitigation measures would be required.

6. Level of Significance After Mitigation

As indicated above, Project-level and cumulative impacts on surface water hydrology and surface water quality would be less than significant, and, no mitigation measures would be required.