5.8 HYDROLOGY AND WATER QUALITY

This section of the DEIR evaluates the potential impacts of the proposed project to hydrology and water quality conditions in the project's vicinity. Hydrology deals with the distribution and circulation of water, both on land and underground. Water quality deals with the quality of surface and groundwater. Surface water includes lakes, rivers, streams, and creeks; groundwater is under the earth's surface.

The information in this section is based partly on the *Solana Torrance Preliminary Drainage Study* by KHR Associates, dated October 9, 2018. A complete copy of this technical study is included as Appendix G to this DEIR.

Ten comments relating to hydrology and water quality were received in response to the Initial Study / Notice of Preparation circulated for the proposed project. The potential impacts on water quality from construction and operation of the proposed development have been analyzed in this section.

5.8.1 Environmental Setting

5.8.1.1 REGULATORY FRAMEWORK

Clean Water Act

The federal Water Pollution Control Act (or Clean Water Act [CWA]) is the principal statute governing water quality. It establishes the basic structure for regulating discharges of pollutants into the waters of the United States and gives the US Environmental Protection Agency (EPA) authority to implement pollution control programs, such as setting wastewater standards for industry. The statute's goal is to completely end all discharges and to restore, maintain, and preserve the integrity of the nation's waters. The CWA regulates direct and indirect discharge of pollutants; sets water quality standards for all contaminants in surface waters; and makes it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a permit is obtained under its provisions. The CWA mandates permits for wastewater and stormwater discharges; requires states to establish site-specific water quality standards for navigable bodies of water; and regulates other activities that affect water quality, such as dredging and the filling of wetlands. The CWA funds the construction of sewage treatment plants and recognizes the need for planning to address nonpoint sources of pollution. Section 402 of the CWA requires a permit for all point source (a discernible, confined, and discrete conveyance, such as a pipe, ditch, or channel) discharges of any pollutant (except dredge or fill material) into waters of the United States.

National Pollutant Discharge Elimination System

Under the National Pollutant Discharge Elimination System (NPDES) program (under Section 402 of the CWA), all facilities that discharge pollutants from any point source into waters of the United States must have a NPDES permit. The term "pollutant" broadly applies to any type of industrial, municipal, and agricultural waste discharged into water. Point sources can be publicly owned treatment works (POTWs), industrial facilities, and urban runoff. (The NPDES program addresses certain agricultural activities, but the majority are considered nonpoint sources and are exempt from NPDES regulation.) Direct sources discharge directly to

receiving waters, and indirect sources discharge to POTWs, which in turn discharge to receiving waters. Under the national program, NPDES permits are issued only for direct, point-source discharges. The National Pretreatment Program addresses industrial and commercial indirect dischargers. Municipal sources are POTWs that receive primarily domestic sewage from residential and commercial customers. Specific NPDES program areas applicable to municipal sources are the National Pretreatment Program, the Municipal Sewage Sludge Program, Combined Sewer Overflows, and the Municipal Storm Water Program. Nonmunicipal sources include industrial and commercial facilities. Specific NPDES program areas applicable to these industrial/commercial sources are: Process Wastewater Discharges, Non-process Wastewater Discharges, and the Industrial Storm Water Program. NPDES issues two basic permit types: individual and general. Also, the EPA has recently focused on integrating the NPDES program further into watershed planning and permitting (USEPA 2012).

The NPDES has a variety of measures designed to minimize and reduce pollutant discharges. All counties with storm drain systems that serve a population of 50,000 or more, as well construction sites one acre or more in size, must file for and obtain an NPDES permit. Another measure for minimizing and reducing pollutant discharges to a publicly owned conveyance or system of conveyances (including roadways, catch basins, curbs, gutters, ditches, man-made channels and storm drains, designed or used for collecting and conveying stormwater) is the EPA's Storm Water Phase I Final Rule. The Phase I Final Rule requires an operator (such as a city) of a regulated municipal separate storm sewer system (MS4) to develop, implement, and enforce a program (e.g., best management practices [BMPs], ordinances, or other regulatory mechanisms) to reduce pollutants in post-construction runoff to the city's storm drain system from new development and redevelopment projects that result in the land disturbance of greater than or equal to one acre. The MS4 Permit covering most of Los Angeles County—except for the Antelope Valley and the part of the San Gabriel Mountains draining northward to the Mojave Desert—is Order No. R4-2012-0175 issued by the Los Angeles Regional Water Quality Control Board in 2012.

The City of Torrance Public Works Department, the Community Development Department, and the Fire Department have assigned staff to make sure the City is in compliance with the NPDES permit. Public Works handles the interagency liaisons, capital improvement projects relative to permit compliance, and water quality monitoring for compliance with total maximum daily loads (TMDLs)—that is, the maximum concentration of a pollutant allowed in a water body. Community Development handles the site inspections, implementation of BMPs, development plan checks, public education programs, and administration. The Fire Department serves as first responders for incidents related to runoff, illicit discharges, and hazardous spills and oversees the Commercial & Facilities Management Program, including inspections and enforcement (Torrance 2017).

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act (Water Code sections 13000 et seq.) is the basic water quality control law for California. Under this Act, the State Water Resources Control Board (SWRCB) has ultimate control over state water rights and water quality policy. In California, the EPA has delegated authority to issue NPDES permits to the SWRCB. The state is divided into nine regions related to water quality and quantity characteristics. The SWRCB, through its nine Regional Water Quality Control Boards, carries out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a water quality control plan or basin plan that recognizes and reflects the regional differences in existing water quality, the

beneficial uses of the region's ground and surface water, and local water quality conditions and problems. The City of Torrance is in the Los Angeles Basin, Region 4, in the Dominguez Watershed. The Water Quality Control Plan for the Los Angeles Basin was adopted in 2014. This Basin Plan gives direction on the beneficial uses of the state waters in Region 4, describes the water quality that must be maintained to support such uses, and provides programs, projects, and other actions necessary to achieve the standards established in the Basin Plan.

Los Angeles County Low Impact Development Standards Manual

The County prepared the 2014 Low Impact Development Standards Manual (LID Manual) to comply with the requirements of the MS4 permit. The LID Manual is an update and compilation of the following documents:

- Development Planning for Storm Water Management: A Manual for the Standard Urban Storm Water Mitigation Plan (September 2002)
- Technical Manual for Stormwater Best Management Practices in the County of Los Angeles (February 2004)
- Stormwater Best Management Practice Design and Maintenance Manual (August 2010)
- Low Impact Development Standards Manual (January 2009)

The LID Manual addresses the following objectives and goals:

- Lessen the adverse impacts of stormwater runoff from development and urban runoff on natural drainage systems, receiving waters, and other water bodies.
- Minimize pollutant loadings from impervious surfaces by requiring development projects to incorporate properly designed, technically appropriate BMPs and other LID strategies.
- Minimize erosion and other hydrologic impacts on all projects located within natural drainage systems that have not been improved by requiring projects to incorporate properly designed, technically appropriate hydromodification control development principles and technologies.

The use of LID BMPs in project planning and design is intended to preserve a site's predevelopment hydrology by minimizing the loss of natural hydrologic processes such as infiltration, evapotranspiration, and runoff detention. LID BMPs try to offset these losses by introducing structural and non-structural design components that restore these water quality functions into the project's land plan.

Best Management Practices

Best management practices for minimizing water pollution are termed *measures* in the LID Manual and *best management practices* in the MS4 Permit; they are referred to as BMPs here.

- **Site Assessment** – the design of the proposed project drainage system and water quality components is based on an assessment of site layout, geotechnical conditions, local groundwater conditions, and existing drainage.

- **Site Design** – site design BMPs reduce or eliminate post-project runoff. Site design BMPs include protecting and restoring natural areas; minimizing land disturbance, and minimizing impervious area.

- **Source Control BMPs** - source control BMPs reduce the potential for pollutants to enter runoff. Source control BMPs are classified in two categories:

  - **Structural source control measures:** examples include roof runoff controls, protection of slopes and channels, efficient irrigation, and storm drain system signage.

  - **Nonstructural source control measures:** reduce the potential for pollutants resulting from activities onsite to enter runoff. Examples include education of owners and employees; activity restrictions, such as requiring that trash can lids be closed at all times and prohibiting outdoor cooking and car washing; and periodic inspections of water quality features such as catch basins and filters.

- **Treatment Control BMPs** - treatment control BMPs remove pollutants from contaminated stormwater before the water is discharged offsite. Examples include biofiltration through constructed project landscape elements such as bioswales, infiltration trenches, and/or infiltration basins; and filters.

City of Torrance Municipal Code

The City of Torrance is one of the co-permittees on the MS4 Permit (Order No. R4-2012-0175). Stormwater quality provisions of the municipal code are set forth in Division 4 Chapters 10, Stormwater and Urban Runoff Pollution Control, and 11, Low Impact Development Strategies for Development and Redevelopment. These municipal code requirements parallel some of the requirements of the LID Manual and thus are not discussed in detail here.

5.8.1.2 APPLICABLE PLANS AND PROGRAMS

Storm Water Pollution Prevention Plans

Pursuant to the CWA, in 2012, the SWRCB issued a statewide general NPDES Permit for stormwater discharges from construction sites (NPDES No. CAS000002). Under this Statewide General Construction Activity permit, discharges of stormwater from construction sites with a disturbed area of one or more acres are required to either obtain individual NPDES permits for stormwater discharges or to be covered by the General Permit. Coverage by the General Permit is accomplished by completing and filing a Notice of Intent with the SWRCB and developing and implementing a Storm Water Pollution Prevention Plan (SWPPP). Each applicant under the General Construction Activity Permit must ensure that a SWPPP is prepared prior to grading and is implemented during construction. The SWPPP estimates sediment risk from construction activities to receiving waters; must list BMPs implemented on the construction site to protect stormwater runoff; and must contain a visual monitoring program, a chemical monitoring program for "non-visible"

pollutants to be implemented if there is a failure of BMPs, and a monitoring plan if the site discharges directly to a water body listed on the state's 303(d) list of impaired waters.

National Flood Insurance Program

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 mandate the Federal Emergency Management Agency (FEMA) to evaluate flood hazards. FEMA provides Flood Insurance Rate Maps (FIRMs) for local and regional planners to promote sound land use and floodplain development, identifying potential flood areas based on the current conditions. To delineate a FIRM, FEMA conducts engineering studies referred to as Flood Insurance Studies. Using information gathered in these studies, FEMA engineers and cartographers delineate Special Flood Hazard Areas on FIRMs.

The Flood Disaster Protection Act requires owners of all structures in identified Special Flood Hazard Areas to purchase and maintain flood insurance as a condition of receiving federal or federally related financial assistance, such as mortgage loans from federally insured lending institutions. Community members within designated areas are able to participate in the National Flood Insurance Program (NFIP) afforded by FEMA. The NFIP is required to offer federally subsidized flood insurance to property owners in communities which adopt and enforce floodplain management ordinances that meet minimum FEMA criteria. The National Flood Insurance Reform Act of 1994 further strengthened the NFIP by providing a grant program for state and community flood mitigation projects. The act also established the Community Rating System, a system for crediting communities that implement measures to protect the natural and beneficial functions of their floodplains, as well as managing erosion hazards.

The City of Torrance, under NFIP, has adopted Chapter 9, Flood Hazard Insurance, in Division 7 of its municipal code, which establishes regulations, standards and policies to ensure flood protection. These regulations address development and redevelopment, compatibility of uses, required predevelopment drainage studies, compliance with discharge permits, enhancement of existing waterways, cooperation with the US Army Corps of Engineers and the City of Torrance for updating, and method consistency with the Regional Water Quality Control Board and proposed BMPs.

5.8.1.3 EXISTING CONDITIONS

Regional Drainage

The project site is in the Dominguez Watershed, which spans about 133 square miles in southwest Los Angeles County, extending from the northern slopes of the Palos Verdes Hills north to the City of Inglewood (see Figure 5.8-1, *Dominguez Watershed*). The major stream in the watershed is the Dominguez Channel, an engineered channel extending about 16 miles from the City of Hawthorne in the north to Los Angeles Harbor in the south (LACDPW 2004). The main direction of drainage in the watershed is south and southeast to the Los Angeles Harbor. The regional drainage system is managed by the Los Angeles County Flood Control District (LACFCD), who also establishes design criteria for development that would discharge into its facilities.

Local Surface Waters and Drainage

Most of the proposed development area (Lot 1) of the project site is in a topographic depression remaining from past mining activity; the lowest elevation is approximately 190 feet above mean sea level (amsl). The lower pad is at elevation of approximately 190 to 220 feet and the upper pad is at approximately 235 feet to 245 feet. Runoff from slopes facing the proposed development area collect in the depression on the property, and drain towards the center of the site. During very intense storms the water level in the depression may rise enough to flow northward to Via Valmonte. The nearest storm drains to the site are in Hawthorne Boulevard just south of the intersection with Via Valmonte, and in Via Valmonte to the northwest of Hawthorne Boulevard. The storm drain in Hawthorne Boulevard is a 39-inch reinforced concrete pipe (RCP), and the storm drain in Via Valmonte is a 30-inch RCP. The nearest catch basins are also along Hawthorne Boulevard and Via Valmonte, south and northwest of the intersection of the roadways respectively, and along Via Valmonte north and northwest of the site (LACDPW 2017).

The storm drains in Hawthorne Boulevard and Via Valmonte are part of a network of storm drains extending north to the Walteria Sump about 0.9 mile north of the project site. Stormwater in the Walteria Sump evaporates, percolates into the ground, or is pumped to Machado Lake about 3.2 miles east of the project site. Machado Lake discharges into Bixby Slough, a reinforced concrete box storm drain, which discharges into Los Angeles Harbor (LACDPW 2017).The County Manual for the Standard Urban Storm Water Mitigation Plan limits stormwater runoff from developed property to 1.01 cubic feet per second per acre. This stormwater runoff quotient (Q) is used as a design parameter for all development projects. In addition, the County's stormwater system design storm is a 50-year, 4-day storm.

The 5.71-acre development portion of the project site and additional 6.37 on-site acres of upstream tributary drainage area result in a project site drainage area of 12.13 acres. Drainage conditions for the additional 12.55 acres of the project site, which together make up the entire 24.68 project site area, are not altered by the proposed project. Stormwater on the site generally drains north towards Via Valmonte. For stormwater runoff calculations, the Drainage Study divided the 12.13-acre drainage area affected by the proposed project into six smaller subareas (see Figure 5.8-2, *Existing Drainage Map*). Table 5.8-1, *Existing Runoff Rates, 50-Year Storm*, shows the estimated stormwater runoff from each of the six drainage areas assuming the LACFCD design storm. Currently, only subareas E1, E5 and E6 could result in stormwater runoff leaving the project site. Area E1 drains towards a catch basin on Via Valmonte. Areas E2, E3 and E4 sheet flow towards a low point on the site where the runoff is retained until evaporation and infiltration occur. Area E5 drains to the easterly towards Hawthorne Boulevard and then flows in the street towards catch basins at Hawthorne Boulevard and Via Valmonte, before travelling through the storm drain system. Area E6 and the southern portion of the site sheet flow toward a catch basin on Hawthorne Boulevard.

Table 5.8-1 Existing Runoff Rates, 50-Year Storm

Subarea[1]	Drains to:	Runoff from 50-year storm, cubic feet per second[2]
E1 (.54 AC)*	Catch basin on Via Valmonte	0.79
E2 (6.18 AC)*	Low point in project site	12.98
E3 (3.78 AC)	Low point in project site	5.52
E4 (0.58 AC)*	Low point in project site	1.22

Table 5.8-1 Existing Runoff Rates, 50-Year Storm

Subarea[1]	Drains to:	Runoff from 50-year storm, cubic feet per second[2]
E5 (1.05 AC)	Catch basins in Hawthorne Boulevard	1.95
E6 (0.12 AC)*	Catch basins in Hawthorne Boulevard	0.22

Source: KHR 2018.
Note: The site is currently 99 percent pervious.
*part of upstream drainage tributary area
1 Most of the project site is in subareas E3 and E5 (see Figure 5.8-2).
2 Existing runoff rate subtotals by destination are 18.5 cubic feet per second (cfs) to the project site; 0.79 cfs to Via Valmonte; and 3.39 cfs to Hawthorne Boulevard.

Surface Water Quality

Stormwater from the project site drains to the Walteria Sump where it evaporates, percolates into the ground, or is pumped to Machado Lake, and later discharged into Bixby Slough and into the Los Angeles Harbor. Machado Lake is listed as an impaired water body by the State Water Resources Control Board for algae, ammonia, ChemA, chlordane, DDT, dieldrin, eutrophic contamination, odor, polychlorinated biphenyls (PCBs), and trash.[1] Los Angeles-Long Beach Inner Harbor is listed for beach closures, benthic community effects (channel bottom water and soil), benzo(a)pyrene, chrysene, copper, DDT, PCBs, sediment toxicity, and zinc (SWRCB 2017).[2] TMDL status for each listed pollutant is shown in Table 5.8-2, *Pollutants in Receiving Water Bodies Listed on Section 303(d) List*.

Table 5.8-2 Pollutants in Receiving Water Bodies Listed on Section 303(d) List

Water Body	Pollutant	Total Maximum Daily Load (TMDL) Status
Machado Lake	Algae	Approved 2009
	Ammonia	Approved 2009
	ChemA[1]	Estimated completion 2019
	Chlordane *organochlorine insecticide*	Estimated completion 2019
	DDT *organochlorine insecticide*	Estimated completion 2019
	Dieldrin *organochlorine insecticide*	Estimated completion 2019
	Eutrophic *Depletion of oxygen in water due to presence of excess nutrients*	Approved 2009
	Odor	Approved 2009
	PCBs	Estimated completion 2019
	Trash	Approved 2008
Los Angeles/ Long Beach Inner Harbor	Beach closures	Estimated completion 2004
	Benthic community effects	Estimated completion 2019
	Benzo(a)pyrene *polyaromatic hydrocarbon*	Estimated completion 2021
	Chrysene *aromatic hydrocarbon*	Estimated completion 2021
	Copper	Estimated completion 2019
	DDT	Estimated completion 2019

[1] Chlordane, DDT, and dieldrin are organochlorine insecticides. ChemA refers to the sum of the chemicals aldrin, dieldrin. chlordane, endrin, heptachlor, heptachlor epoxide, hexachlorocyclohexane (HCH; including lindane), endosulfan, and toxaphene, all of which are organochlorine insecticides. Eutrophic water contains excess nutrients, inducing growth of plants and algae, which can deplete oxygen in water.
[2] Benzo(a)pyrene is a polyaromatic hydrocarbon; formed during incomplete combustion of organic matter; and is a potent mutagen and carcinogen. Chrysene, an aromatic hydrocarbon in coal tar, is toxic.

Table 5.8-2 Pollutants in Receiving Water Bodies Listed on Section 303(d) List

Water Body	Pollutant	Total Maximum Daily Load (TMDL) Status
	Polychlorinated biphenyls (PCBs)	Estimated completion 2019
	Sediment Toxicity	Estimated completion 2009
	Zinc	Estimated completion 2008

Sources: SWRCB 2017; NCBI 2016.
[1] ChemA refers to the sum of the chemicals aldrin, dieldrin. chlordane, endrin, heptachlor, heptachlor epoxide, hexachlorocyclohexane (HCH; including lindane), endosulfan, and toxaphene, all of which are organochlorine insecticides.

Groundwater

The project site is not above a groundwater basin. However, land northeast of the site across Hawthorne Boulevard is over the West Coast Subbasin of the Coastal Plain of Los Angeles Groundwater Basin that underlies much of the southwest Los Angeles Basin (DWR 2017) (see Figure 5.8-3, *West Coast Subbasin*). According to the geotechnical report, there is no reported data for the historically highest groundwater level in the immediate area. The closest groundwater monitoring well to the site is approximately 1.4 miles to the northeast, with reported levels between 82.7 feet below ground surface (bgs) in 2008 and 164.4 feet bgs in 1971. Groundwater was not encountered in investigative soil borings drilled to a maximum depth of 120.5 feet bgs within the proposed building area of Lot 1 or to 111.5 feet bgs at the top of Slope 3.

Groundwater Quality

Wellhead treatment is used at some wells in the West Coast Subbasin to remove volatile organic compound contaminants. Brackish groundwater—slightly salty due to seawater intrusion into the groundwater basin—is treated at two facilities. The Brewer Desalting Facility in Torrance has a capacity of 2.1 million gallons per day (mgd) and is operated by the West Basin Municipal Water District. The Goldsworthy Desalter, also in Torrance, is operated by the Water Replenishment District of Southern California; an expansion of that facility to 5 mgd capacity is scheduled for completion in 2019 (California Resource Agency 2019). There is no groundwater management plan in effect pertaining to the project site, as the site is not over a groundwater basin.

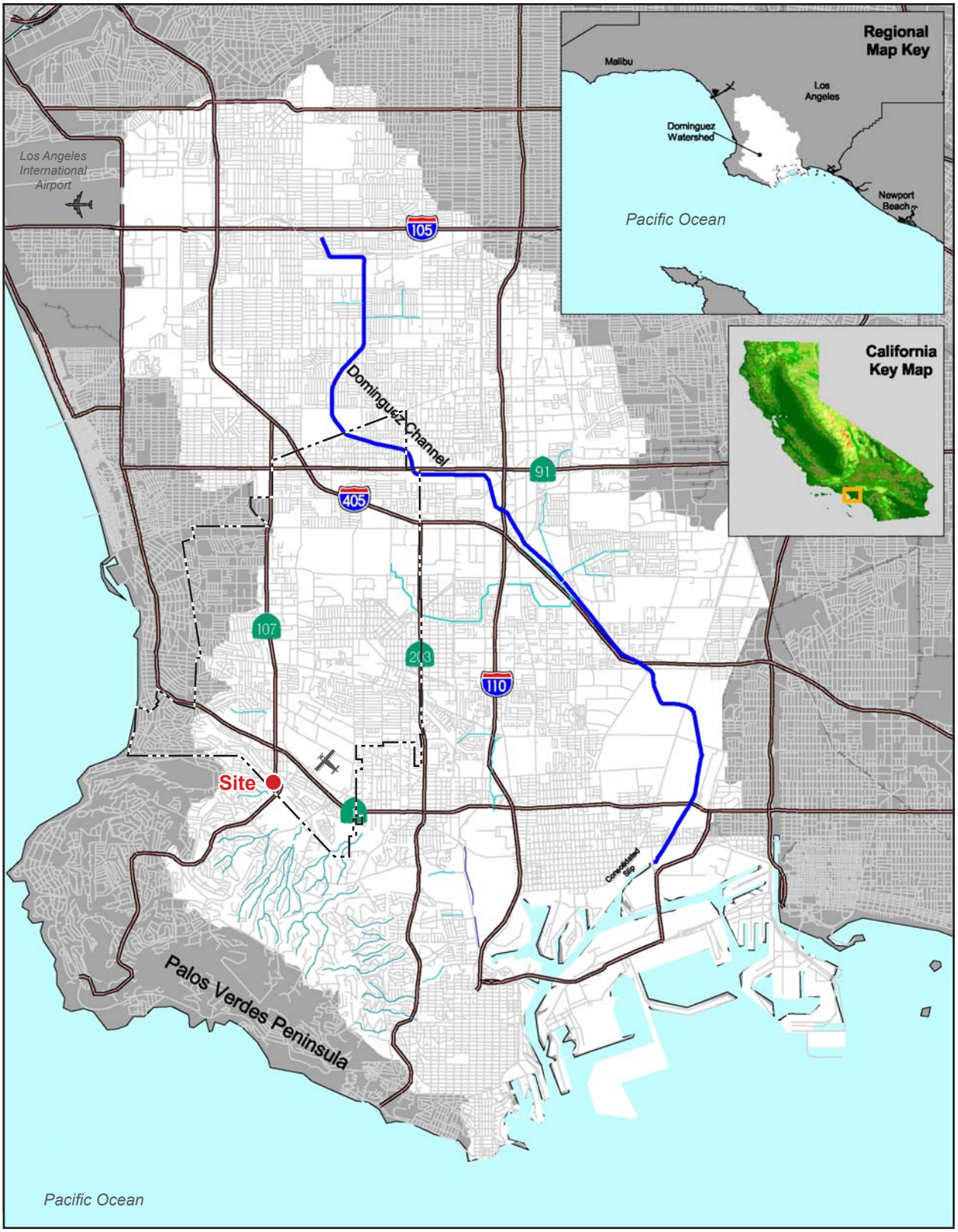
5.8.1.4 FLOOD HAZARDS

Designated Flood Zones

Approximately 1.2 acres of the project site near the northwest boundary—and partly in the proposed development area—are in a 100-year flood zone (flood zone A) mapped by FEMA (FEMA 2017) (see Figures 5.8.4, Site Plan Flood and 5.8-5, *Flood Zone Map*). Two pads have been graded on the site of the former mine pit—one at approximately 190 to 220 feet amsl, and one at approximately 235 to 245 feet amsl. The flood zone map does not reflect the existing pad grading. According to the applicant, a Letter of Map Revision (LOMR) will be submitted to FEMA to remove the area from Zone A. If approved, the entire site will be within Zone X, which is outside of 100-year and 500-year flood zones. With approval of the proposed project, the project applicant will seek approval of the LOMR. As approval of the LOMR is outside of the City's jurisdiction, this EIR does not assume that the LOMR will be approved.

Figure 5.8-1 - Dominguez Watershed

5. Environmental Analysis



Torrance City Boundary

0 3

Scale (Miles)

Source: Los Angeles County Department of Public Works, 2004

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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Figure 5.8-2 - Existing Drainage Map
5. Environmental Analysis

Source: KHR Associates, 2018

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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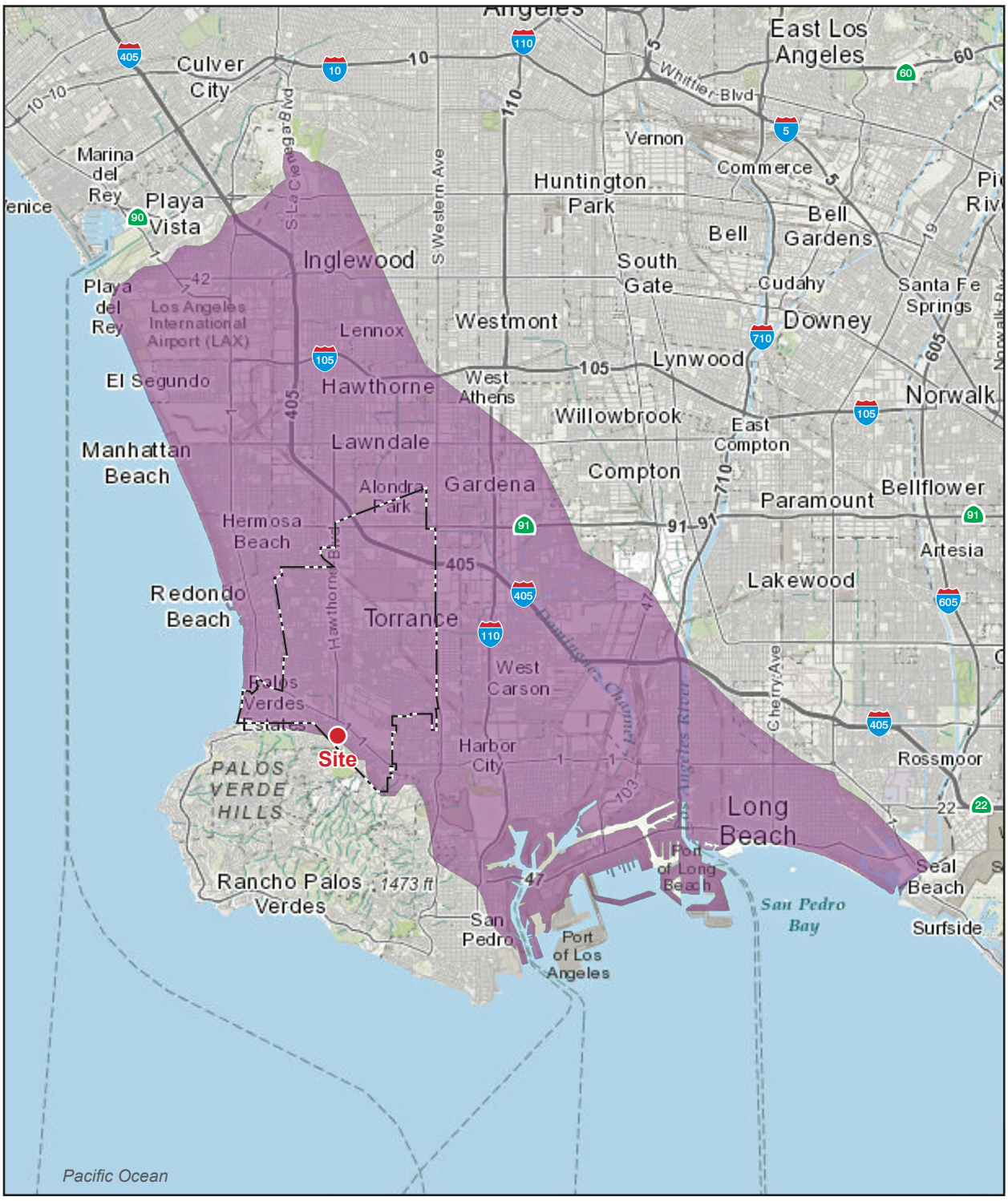
Figure 5.8-3 - West Coast Subbasin
5. Environmental Analysis



Torrance City Boundary

West Coast Subbasin

0 5
Scale (Miles)

Source: Department of Water Resources, 2016

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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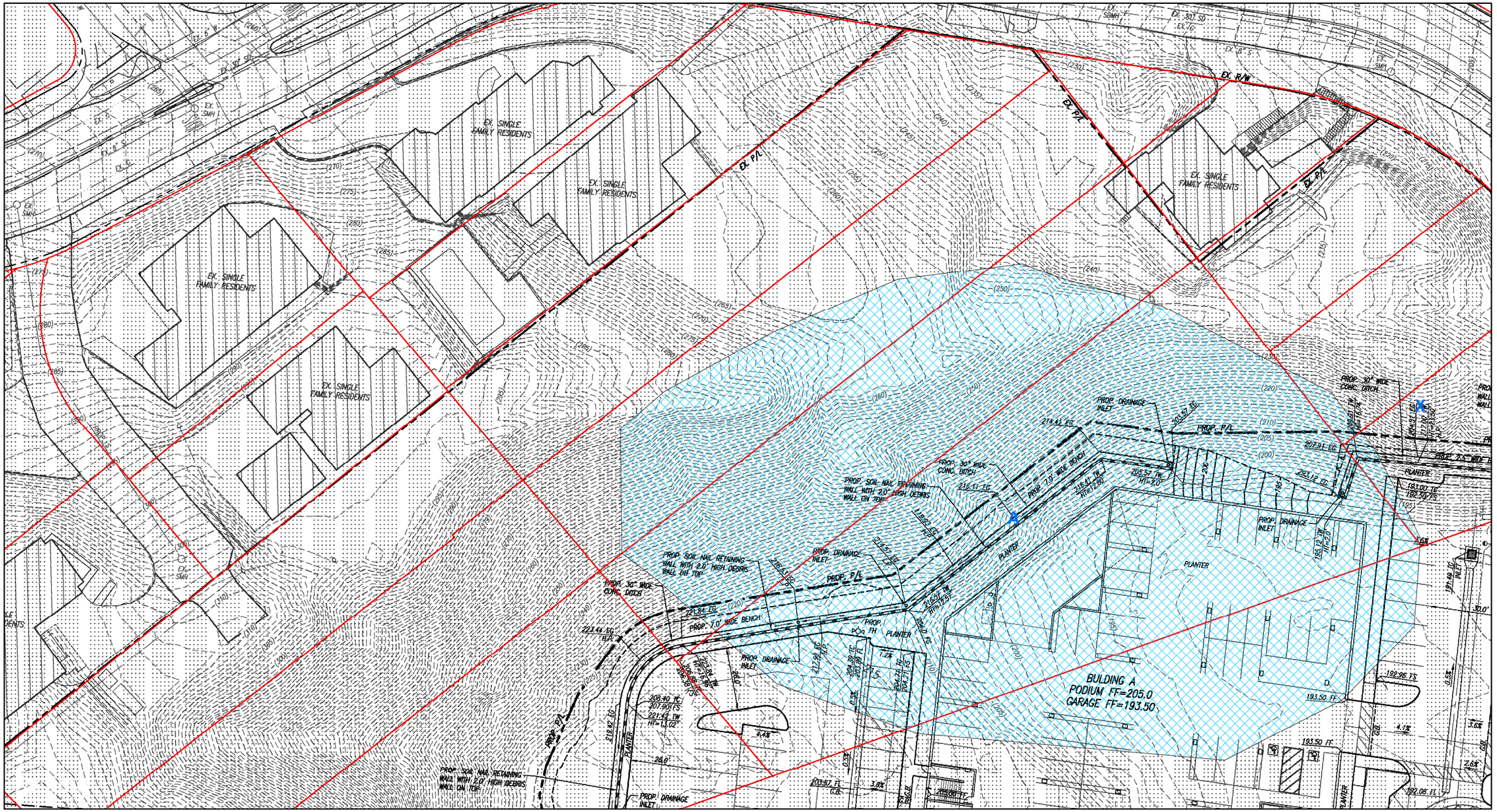
Figure 5.8-4 - Site Plan Flood



Source: FEMA, 2018

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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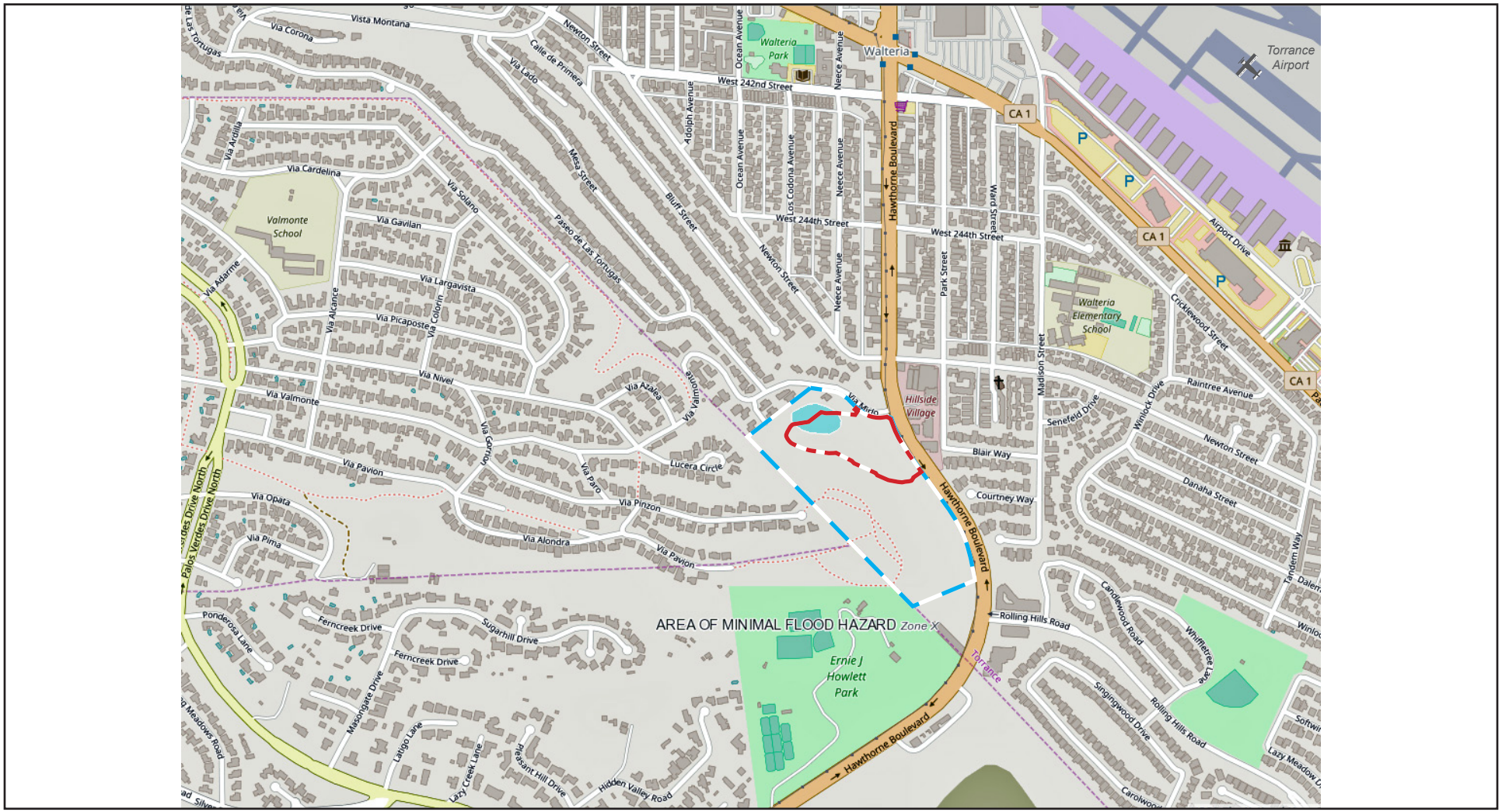
Figure 5.8-5 - Flood Zone Map

5. Environmental Analysis



Source: Federal Emergency Management Agency, 2017

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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5.8.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:[3]

HYD-1 Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

HYD-2 Substantially deplete decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

HYD-3 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would**:**

(i) result in substantial erosion or siltation on- or off-site**;**

(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

(iii) 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

(iv) impede or redirect flood flows?

HYD-4 In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

HYD-5 Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The Initial Study, included as Appendix A, substantiates that impacts associated with threshold HYD-2 would be less than significant. This impact will not be addressed in the following analysis.[4]

5.8.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

[3] The significance thresholds set forth here are from the CEQA Guidelines Update approved by the California Office of Administrative Law in December 2018.
[4] Impacts related to Threshold HYD-9 analyzed in the Initial Study were also identified as less than significant. Threshold 9 was deleted from CEQA Guidelines Appendix G in the CEQA Guidelines Update approved in December 2018. Flood hazards are now analyzed in thresholds HYD-3.iii and HYD-4.

Impact 5.8-1: During the construction phase of the proposed project, there is the potential for short-term unquantifiable increases in pollutant concentrations from the site. After project development, the quality of storm runoff (sediment, nutrients, metals, pesticides, pathogens, and hydrocarbons) may be altered. [Thresholds HYD-1, HYD-3.i and HYD-5]

Construction

Contaminants that can be released by construction projects and can contaminate stormwater include sediment, nutrients, bacteria and viruses, oil and grease, metals, organic (carbon-based) compounds, oxygen-demanding substances, pesticides, and trash and debris. Organic compounds are found in pesticides, solvents, and hydrocarbons. Oxygen-demanding substances include proteins, carbohydrates, and fats; microbial degradation of such substances increases oxygen demand in water (CASQA 2012).

In accordance with the updated General Construction Permit (Order No. 2012-0006-DWQ), the following permit registration documents must be submitted to the SWRCB prior to commencement of construction activities:

- Notice of Intent
- Risk Assessment (standard or site specific)
- Particle Size Analysis (if site-specific risk assessment is performed)
- Site Map
- Stormwater Pollution Prevention Plan
- Active Treatment System Design Documentation (if determined necessary)
- Annual Fee and Certification

Prior to the issuance of a grading permit, the project applicant is required to provide proof of filing of the permit registration documents with the SWRCB, including preparation of a SWPPP describing the BMPs to be implemented during project construction. The SWPPP's construction BMPs shall address pollutant source reduction and provide measures/controls necessary to minimize potential pollutants. These include, but are not limited to: erosion controls, sediment controls, tracking controls, nonstorm water management, materials and waste management, and good housekeeping practices.

- **Erosion controls** cover and/or bind soil surface, to prevent soil particles from being detached and transported by water or wind; examples include mulch, geotextiles, mats, hydroseeding, earth dikes, and swales.

- **Sediment controls** filter out soil particles that have been detached and transported in water; examples include barriers such as straw bales, sandbags, fiber rolls, and gravel bag berms; desilting basins; and cleaning measures such as street sweeping.

- **Tracking controls** minimize the tracking of soil offsite by vehicles; examples include stabilized construction roadways and construction entrances/exits, and entrance/outlet tire washes.

- **Non-storm Water Management Controls** prohibit discharge of materials other than stormwater, such as discharges from the cleaning, maintenance, and fueling of vehicles and equipment. Examples include BMPs for specifying methods for: paving and grinding operations; cleaning, fueling, and maintenance of vehicles and equipment; and concrete curing and finishing.

- **Waste Management and Controls** include spill prevention and control, stockpile management, and management of solid wastes and hazardous wastes. (CASQA 2012)

The SWPPP must be implemented at the project site and revised as necessary as administrative or physical conditions change. With the implementation of the SWPPP, construction water quality impacts would be less than significant.

Operation

Project operation could generate the same categories of pollutants that project construction could. For example, runoff from buildings and parking lots typically contain oils, grease, fuel, antifreeze, by-products of combustion (such as lead, cadmium, nickel, and other metals), fertilizers, herbicides, pesticides, and other pollutants. Precipitation at the beginning of the rainy season may result in an initial stormwater runoff (first flush) with high pollutant concentrations.

LID Manual

The proposed project is a Designated Project as defined in the LID Manual. The LID Manual sets forth several categories of Designated Projects, one of which is development projects equal to one acre or greater of disturbed area and adding more than 10,000 square feet of impervious surface area.

Requirements for Designated Projects

- Conduct site assessment and identify design considerations, including determining the feasibility of on-site infiltration.
- Apply site-specific source control measures.
- Calculate the Stormwater Quality Design Volume.
- Implement stormwater quality control measures.
- Implement alternative compliance measures, if necessary.
- Implement hydromodification requirements, if necessary.
- Develop a Maintenance Plan, if necessary.

Best Management Practices

Site Assessment

The design of the proposed project drainage system and water quality components is based on an assessment of site layout, geotechnical conditions, local groundwater conditions, and existing drainage.

Site Design

Site design BMPs reduce or eliminate post-project runoff. Site design BMPs include protecting and restoring natural areas; minimizing land disturbance, and minimizing impervious area.

Protect and Restore Natural Areas: The proposed project would protect 17.62 acres as passive natural open space. Another 0.99 acre of the site (brush management zone) would be left vacant; however, vegetation on that area would be altered and managed to minimize wildfire hazard.

Minimize Land Disturbance: See the preceding discussion of proposed open space.

Minimize Impervious Area: The project design includes about 2.21 acres of landscaping with the development area; the 0.99-acre brush management zone that would be maintained as vacant land with vegetation managed to minimize wildfire hazard; and the 17.62-acre open space reserve. Overall, about 82 percent of the proposed site would be pervious surfaces at project completion.

Source Control BMPs

Source control BMPs reduce the potential for pollutants to enter runoff. Source control BMPs are classified in two categories:

Structural source control measures: examples include roof runoff controls, protection of slopes and channels, efficient irrigation, and storm drain system signage.

Nonstructural source control measures: reduce the potential for pollutants resulting from activities onsite to enter runoff. Examples include education of owners and employees; activity restrictions, such as requiring that trash can lids be closed at all times and prohibiting outdoor cooking and car washing; and periodic inspections of water quality features such as catch basins and filters.

Treatment Control BMPs

Treatment control BMPs remove pollutants from contaminated stormwater before the water is discharged offsite. Examples include biofiltration through constructed project landscape elements such as bioswales, infiltration trenches, and/or infiltration basins; and filters.

Grates on storm drain inlets would prevent large debris from entering storm drains. The proposed drainage system would include proprietary separator units, which separate floatables, debris 2.4 millimeters (0.094 inches) or larger, sediment, and hydrocarbons. Three separator units are proposed: one near the central part of the southern development area boundary; one in a drive aisle just west of the intersection of the aisle with Via Valmonte; and one in the east part of the site (see Figure 3-14, *Proposed Drainage Plan*).

Operational water quality impacts would be less than significant after implementation of the above-described BMPs.

Water Quality Control Plan

The LID Manual sets forth guidance for meeting certain requirements of the above-described MS4 Permit; which, in turn, implements the Water Quality Control Plan for the Los Angeles Regional Water Quality Control Board Region. Project design and operation would comply with requirements set forth in the LID Manual, as described above. Thus, project development would not conflict with or obstruct implementation of the Water Quality Control Plan. Impacts would be less than significant.

Impact 5.8-2: Development pursuant to the proposed project would increase the amount of impervious surfaces on the site and would therefore increase surface water flows into drainage systems within the watershed. [Thresholds HYD-3.ii and HYD-3.iii]

Impervious Surfaces

The project proposes development buildings with total footprints of about 109,400 square feet or 2.51 acres; approximately 64,383 square feet (1.48 acres) of driveways and surface parking; and about 15,040 square feet (0.35 acres) of private decks, for a total of about 188,823 square feet (4.33 acres) of impervious area, that is, approximately 76 percent of the proposed development area of Lot 1, or 18 percent of the entire 24.68-acre project site.

Post-project Runoff

The increase in impervious surface, and removal of flood zone A–low area, would result in additional stormwater runoff. Based on the amount of impervious surface, the Drainage Study estimates that peak stormwater runoff from the proposed project would be 31.84 cubic feet per second. The County limits the amount of runoff that can leave the project site when connected to the public system to 1.01 cubic feet per second per acre from the altered project area of 12.13 acres (development area and upstream tributary), for a total of 12.25 cubic feet per second. Therefore, the proposed runoff from the site would be restricted onsite to satisfy the allowable discharge flow rate.

Proposed Drainage System

Collection System

In post-project conditions runoff from the project site would be collected by roof drains, area drains, and catch basins discharging to proposed storm drains. The paved parking and drive areas would be contoured to direct stormwater to catch basins. The proposed network of storm drains would span the entire altered project area and would discharge to an existing storm drain in Via Valmonte immediately west of its intersection with Hawthorne Boulevard (see Figure 3-14, *Proposed Drainage Plan*). Three underground infiltration tanks and associated aggregate filled trenches will be used for infiltration of the LID design storm and three underground infiltration tanks along with their associated aggregate filled trenches will be used to hold the difference in volume over the allowable discharge flow (Tanks A, B and C). Outlet pipes from the site drainage system are sized to only allow appropriate flows to the storm drain system for each sub area to comply with County stormwater discharge requirements.

Stormwater Quality and Storage

The proposed drainage system would include proprietary separator units that separate floatables, debris 2.4 millimeters (0.094 inches) or larger, sediment, and hydrocarbons (Contech 2017). Three separator units are proposed: one near the central part of the southern development area boundary; one in a drive aisle just west of the intersection of the aisle with Via Valmonte; and one in the east part of the site.

After passing through the separator units, runoff from the first flush—that is, 0.85 inches of rainfall in 24 hours—would be directed into three perforated corrugated metal pipe tanks (tank 1 in subarea 1, tank 2 in subarea 2, and tank 3 in subarea 3) designed to meet LID requirements. The three LID tanks would be set in aggregate-filled trenches to allow for infiltration and would have combined capacity of 17,733 cubic feet or about 132,652 gallons. The locations of the three LID tanks are shown on Figure 3-14, *Proposed Drainage Plan*.

Runoff exceeding the allowable discharge rate (12.25 cfs) and below the runoff rate from the design storm would be diverted into a second set of perforated corrugated metal pipe tanks and aggregate filled trenches (Tanks A, B and C). The locations of the three tanks are shown on Figure 3-14, *Proposed Drainage Plan*. The three excess flow tanks combined would have capacity of about 5,853 cubic feet or 43,783 gallons.

The proposed drainage system, including the six infiltration tanks and trenches, would limit the post-development, peak-stormwater-runoff discharge rates from the design storm to the maximum of 12.25 cubic feet per second.

Proposed Off-Site Storm Drain Improvements

The project includes two proposed off-site drainage improvements:

1. An expanded catch basin in the south gutter of Via Valmonte immediately west of its intersection with Hawthorne Boulevard.
2. Replacement of an existing 18-inch RCP storm drain from the aforementioned catch basin approximately 16 feet north to an existing 30-inch storm drain in Via Valmonte with a 24-inch RCP pipe (see Figure 3-14, *Proposed Drainage Plan*).

Both proposed off-site drainage improvements would be built within a developed roadway. Construction impacts would be addressed by the standard City requirements for dust and erosion control, noise, and other requirements as may be placed on the encroachment permit allowing construction in Via Valmonte.

Flood Hazard

As the proposed on- and off-site drainage improvements would limit post-project runoff discharge from the site to the existing 12.25 cubic feet per second and would retain the balance of the peak stormwater runoff on the project site through the use of underground infiltration tanks and aggregate trenches, the proposed project has the capacity to capture and safely discharge stormwater from a 50-year, four day storm. The proposed project would not cause substantial flood hazards on- or off-site. Additionally, Due to the fact that the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps are not updated regularly, the area which was filled in is shown as a special flood hazard area - Zone A, which is subject to inundation by the 1% annual

chance of flood. An application for a Letter of Map Revision (LOMR) is being submitted to FEMA to remove the area from Zone A so the entire site is within Zone X, which is outside the 0.2% annual chance floodplain.

Erosion and Siltation

Construction

Project construction would include implementation of temporary BMPs for minimizing erosion and sedimentation described in Impact 5.8-3 below. Erosion and siltation impacts from project construction would be less than significant after implementation of BMPs.

Operation

Project design and project operation would include implementation of BMPs for minimizing water pollutants, including sediment, as required under the Los Angeles County LID Manual. Such BMPs are described in Impact 5.8-3, below. Erosion and siltation impacts from project operation would be less than significant after implementation of BMPs.

Conclusion

Peak runoff rates from the development area would meet the discharge limits established by LACFCD. Therefore, project development would not have a substantial adverse impact on the capacities of off-site drainage systems, and impacts would be less than significant.

Impact 5.8-3: Project development would not impede or redirect flood flows and would not risk release of pollutants due to project inundation. [Thresholds HYD-3.iv and HYD-4]

100-Year Flood Zone

Approximately 1.2 acres on-site near the northwest boundary—and partly in the proposed development area—are in a 100-year flood zone; half of the area mapped as Flood Zone A is on Slope 1 identified by the Geotechnical Investigation Report (Geocon West 2017). Elevations in the 100-year flood zone on-site range from about 189 feet amsl to approximately 284 feet amsl. Two pads have been graded on the site of the former mine pit—one at approximately 190 to 220 feet amsl and one at approximately 235 to 245 feet amsl. The flood zone map does not reflect the pad grading onsite. An application for a Letter of Map Revision is being submitted to FEMA to remove the area from Zone A so the entire site would be within Zone X. If the LOMR is approved, the entire site would be outside of 100-year and 500-year flood zones. If the LOMR is not approved the project would be subject to the requirements of Chapter 9, Flood Hazard Insurance, of the Torrance Municipal Code.

Flood Risks due to Project Development

With Approved LOMR

If the LOMR is approved, the proposed project would not be within the 100-year flood zone and therefore would not impede or redirect flood flows. Application of LID BMPs required by City and state regulations

eliminate the potential to release pollutants due to inundation of the project by a 100-year flood. With approval of the proposed project, the applicant will seek approval of the LOMR. See Impact 5.8-1 for a discussion of proposed drainage improvements.

Without Approved LOMR

Division 7, Chapter 9, Article 5 of the Torrance Municipal Code establishes provisions for construction that would impact flood zones. Section 79.5.1 of Article 5 requires design elements such as clear path of flow, anchoring of buildings, finished floor elevations, and design elements that would automatically balance hydrostatic pressure during storm events. These provisions are required of all new construction and would be applied to the proposed project if the LOMR is not approved. As these regulations automatically apply; there is no need to establish separate mitigation imposing the requirements.

Stormwater improvements included in the proposed project are designed to LACFCD standards that limit the amount of stormwater runoff to 1.01 cubic feet per second per acre from the altered portions of the project. The project includes adequate underground infiltration storage to ensure that stormwater runoff does not exceed this limitation, as substantiated in Impact 5.8-1, above. Off-site improvements are proposed that would ensure adequate connection to the regional storm drain system. Water quality of first-flush stormwater is addressed through on-site filtration and adherence to BMPs. Impacts to water quality and discharge amounts are considered less than significant.

5.8.4 Cumulative Impacts

Surface Water, Drainage, and Flooding

The area considered for cumulative impacts to surface water, drainage, and flooding is the Dominguez Watershed. Other projects would increase impervious areas in the watershed, thus potentially increasing runoff. Other Designated Projects would be required to limit peak post-development runoff rates from the design storm to no greater than predevelopment rates from the same intensity storm.

Water Quality

The area considered for cumulative water quality impacts is the coverage area of MS4 Permit No. R4-2012-0175, encompassing nearly all of Los Angeles County except for the Antelope Valley and the part of the San Gabriel Mountains draining northward to the Mojave Desert.

As a gauge of the amount of future development forecast for Los Angeles County, the population is forecast to increase from about 10,159,000 in 2015 to 11,514,000 in 2040 (an increase of 1,355,000 or about 13 percent), and employment is forecast to increase from about 4,463,000 in 2015 to 5,226,000 in 2040, an increase of 763,000 or 17 percent (SCAG 2016).

Other construction projects one acre and larger would be required to prepare and implement SWPPPs, including construction BMPs described above. The design and operation of other projects would be mandated to conform with requirements of each affected permittee on the MS4 Permit—for example, municipal code provisions for cities and the LID Manual issued by the Los Angeles County Department of Public Works for

unincorporated areas of the county. Cumulative impacts would be less than significant after compliance with the foregoing requirements, and project impacts would not be cumulatively considerable.

5.8.5 Existing Regulations and Standard Conditions

Federal

- United States Code, Title 33, Sections 1251 et seq.: Clean Water Act
- United States Code Title 42, Sections 300f et seq.: Safe Drinking Water Act
- Code of Federal Regulations Title 40 Parts 122 et seq.: National Pollutant Discharge Elimination System (NPDES)

State

- California Water Code Sections 13000 et seq.: Porter-Cologne Water Quality Act
- Order No. 2012-0006-DWQ, Statewide General Construction Permit, State Water Resources Control Board

Los Angeles Regional Water Quality Control Board

- Order No. R4-2012-0175: Municipal Stormwater (MS4) Permit

Los Angeles County Department of Public Works

- Los Angeles County Low Impact Development Standards Manual

City of Torrance

- Municipal Code Division 4

  Chapter 10: Stormwater and Urban Runoff Pollution Control

  Chapter 11: Low Impact Development Strategies for Development and Redevelopment

- Municipal Code Division 7

  Chapter 9: Flood Hazard Insurance

5.8.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.8-1, 5.8-2, and 5.8-3.

5.8.7 Mitigation Measures

No mitigation measures are required.

5.8.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.8.9 References

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5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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