

4.0 ENVIRONMENTAL IMPACT ANALYSIS

D. HYDROLOGY AND WATER QUALITY

INTRODUCTION

This section of the EIR analyzes the project's potential to result in the following hydrology and water quality-related impacts: violation of water quality standards; impacts to stormwater drainage infrastructure capacity; degradation of water quality; construction-related stormwater runoff impacts; operational stormwater runoff impacts; and impacts to beneficial uses in receiving water bodies. The following issues related to hydrology and water quality were scoped out of the EIR in the project's Initial Study (IS): depletion of groundwater supplies; alteration of drainage patterns resulting in erosion or siltation; alteration of drainage patterns resulting in flooding; floodplain-related flood hazards to housing or other structures; flood hazards related to failure of a levee or dam; inundation by seiche, tsunami, or mudflow; significant increases in the flow velocity or volume of stormwater runoff; and significant increases in erosion of the project site or surrounding areas. Data used to prepare this section was obtained from the *Water Quality Management Plan for Huntington Beach Vans Skate Park*, prepared by Rick Engineering Company in October 2011. In addition, the BECSP EIR and the City of Huntington Beach General Plan were utilized in preparation of this section. A reference-list of entries for all cited materials is provided in Chapter 7, *Document Preparation and References*, of this EIR.

1. ENVIRONMENTAL SETTING

a. Existing Conditions

(1) Project Site

The project site is relatively flat and gently slopes in a southerly direction. The topography drops approximately four-feet from the northerly boundary along McFadden Avenue to the southerly boundary along Center Avenue. The 2.72-acre site is vacant and consists of dirt and minimal vegetation. The site is currently 100 percent pervious. The existing site drainage sheet flows in a southwesterly direction towards Center Avenue.

The depth to historic high groundwater is ± 7 feet. Borings conducted on the site encountered groundwater between 12 and 14 feet.¹ The project site's soil type is classified as Hydrologic Group C, which means that the pervious area soils have a moderately high runoff rate and somewhat poor infiltration.² The borings also indicate artificial fill and debris are located throughout the site. Based on the soil conditions and high groundwater, the site could be considered substandard for infiltration.

¹ *Preliminary Water Quality Management Plan (WQMP) for the Huntington Beach Vans Skate Park, prepared by Rick Engineering Company on October 13, 2011.*

² *Highest infiltration and lowest runoff is associated with Hydrologic Group A, and lowest infiltration and highest runoff is associated with soil Hydrologic Group D.*

(2) Off-Site Drainage Patterns

The project site is within the Anaheim Bay-Huntington Beach Watershed. Runoff from the site flows in a southerly direction towards Center Avenue. From Center Avenue, flows are directed westerly towards Gothard Street. According to the BECSP EIR, a new/upgraded storm drain is needed along Gothard Street between Center Avenue and Edinger Avenue.³ Stormwater in Gothard Street flows south along Gothard Street to the intersection of Edinger Avenue and Gothard Street. There, it enters the storm drain system that flows westerly then south to the Murdy Channel. A pump station at Heil Avenue lifts water in the Murdy Channel, and flow in Murdy Channel discharges to the East Garden Grove-Wintersburg Channel [Orange County Flood Control District (OCFCD) facility C05] to the south. According to the Preliminary WQMP prepared for the proposed project, the East Garden Grove-Wintersburg Channel is earthen and considered unstable in at least one section of the channel that would accommodate storm water runoff from the project site. The East Garden Grove-Wintersburg Channel runs primarily east to west within the project vicinity and discharges to Outer Bolsa Bay, Huntington Harbour, Anaheim Bay, and eventually, the Pacific Ocean.

In addition, there is no concern for off-site run-on to the project site. The project site is bounded by McFadden Avenue to the north and Center Avenue to the south (which are both improved roadways with curb and gutter). The project site is bound by a railroad to the east and a vacant parcel to the west which drains in a southwesterly direction.

(3) Regional Hydrology and Drainage

The City of Huntington Beach is located within the Santa Ana River Basin (SARB), a 2,800-square-mile area located roughly between Los Angeles and San Diego. The SARB is a group of connected inland basins and open coastal basins drained by surface streams flowing generally southwestward to the Pacific Ocean. The SARB can be divided into an upper basin and a lower basin. The project site is located within the lower basin drainage and surface flows are dominated by the flood control dam at El Prado. The Santa Ana River canyon, which separates Chino Hills from the Santa Ana Mountains, is the major drainage of Orange County. The lower Santa Ana River has been channelized and modified so that in most years flow does not reach the Pacific Ocean, but is used to recharge groundwater instead.

The project site is located within the Anaheim Bay – Huntington Harbour Watershed of the SARB and covers 80.35 square miles. The Watershed is in the northwest corner of Orange County and includes portions of the City of Anaheim, Cypress, Fountain Valley, Garden Grove, Huntington Beach, Los Alamitos, Santa Ana, Seal Beach, Stanton and Westminster. Its main tributaries are Bolsa Chica Channel, East-Garden Grove Wintersburg Channel and the Westminster Channel.

The Orange County Flood Control District (OCFCD) is responsible for the design, construction, operation, and maintenance of regional flood control facilities. The County flood channels are maintained annually, and maintenance includes debris and vegetation removal. The existing storm drainage channels were originally designed to accommodate 25-year flood events or less, which was the standard at the time.⁴ However, when the channels were constructed, they were generally built to accommodate only 65 percent of the 25-year

³ BECSP EIR Figure 4.7-1a, Existing Project Site Drainage Characteristics and Capacity Constraints (Northern).

⁴ The 25-year flood event has a 4 percent chance of occurring in any given year. The 100-year flood event has a 1 percent chance of occurring in any given year.

flood event. The channels were built with restrictive channel bottoms, which reduce the amount of water the channel can carry and slows the flow rate of runoff water. The County now uses 100-year flood event standards for new storm drain construction and drainage improvements, and portions of the existing channels have been improved to accommodate up to a 100-year flood event.

(4) Local Hydrology and Drainage

Drainage from within the City is conveyed through streets and gutters to City storm drain systems consisting of underground pipes, pump stations, and open channels, which ultimately route runoff into OCFCD facilities. The City owns and operates fifteen storm drainage channel pump stations that are generally located near principal Orange County drainage channels. Runoff is collected through the City's drainage facilities at each pump station, and then transferred to the nearest OCFCD channel, which ultimately conveys water to the Pacific Ocean. The City's channels, originally designed to accommodate up to 65 percent of the 25-year flood events, were typically constructed at ground level (or at-grade); however, the at-grade channels accelerate flooding potential because the amount of water that may be pumped into an at-grade channel is less than what can be pumped into a below-grade channel.

The Drainage Element of the Citywide Urban Runoff Management Plan incorporates a city-based Master Plan of Drainage (MPD), which is a comprehensive drainage study that identifies and creates an inventory of existing storm drain facilities; identifies those areas where system elements do not meet the latest goals established by the City; ranks the severity of the difference between existing capacity and the capacity needed to achieve those goals; prepares planning-level cost opinions for system upgrades; and recommends system improvements to initiate corrections as funding becomes available. The City then initiates individual drainage projects within its budgetary, political, and discretionary constraints. Hydrologic and hydraulic modeling has determined that several areas within the City's drainage system are undersized for the current storm flows and conveyance standards and are subject to potential flooding.

(5) Surface Water Quality

(a) Surface Water Quality

Storm water discharges from the urbanized areas in Orange County consist mainly of surface runoff from residential, commercial, and industrial developments. In addition, there are storm water discharges from agricultural land uses in the non-urbanized area of Orange County, including farming and animal operations.

Discharges from various areas within the City, drain directly or indirectly into urban streams, city lakes, bays, wetlands, estuaries, and the Pacific Ocean. The City owns, operates, and maintains a storm drainage system for the purpose of conveying storm runoff to reduce or eliminate flooding under peak storm flow conditions. The storm drainage system begins with the streets and roads, and includes inlets, storm drains, open channels, pump stations, detention basins, and other appurtenances. While the primary purpose of the storm drain system is to reduce or eliminate flood hazards, the system carries both dry and wet- weather urban runoff and the pollutants associated with runoff from urban land use and activities. For purposes of this analysis, dry and wet weather urban runoff is defined as follows:

- Dry Weather Urban Runoff - Occurs when there is no precipitation-generated runoff. Typical sources include landscape irrigation runoff; driveway and sidewalk washing; non-commercial vehicle washing; groundwater seepage; fire flow; potable water line operations and maintenance discharges;

and permitted or illegal non storm water discharges. Irrigation runoff and washing processes generally contribute to dry weather urban runoff only during the dry season (typically from April through September.). It can be a significant source of bacteria and other constituents that can be introduced through day-to-day urban activities as well as illicit discharges, dumping, or spills.

- Wet Weather Urban Runoff - Refers collectively to non-point source discharges that result from precipitation events. Wet weather discharges includes all stormwater runoff. Stormwater discharges are generated by runoff from land and impervious areas such as paved streets, parking lots, and building rooftops during rainfall and snow events that often contain pollutants in quantities that could adversely affect water quality. Most urban stormwater discharges are considered diffuse sources and are regulated by the Stormwater national Pollutant Discharge Elimination System (NPDES) Permit or Construction General Permit (refer to Regulatory Framework discussion below).

Several major channels owned and maintained by Orange County are also within the City. These channels receive runoff from areas within the City as well as substantial drainage areas in other upstream jurisdictions. It is estimated that runoff from the City makes up about 35-40 percent of the total dry and wet weather flows in these channels.

The discussion of water quality in this analysis is within the context of urban runoff because the project site is located within an urbanized area. Urban runoff (both dry and wet weather) discharges into storm drains and, in some cases, flows directly to creeks, rivers, lakes, and the ocean. Polluted runoff can have harmful effects on drinking water, recreational water, and wildlife.

Urban runoff pollutants include a wide array of environmental, chemical, and biological compounds from both point and nonpoint sources. In the urban environment, stormwater characteristics depend on site characteristics (e.g., land use, perviousness, pollution prevention, types and amounts of BMPs), rain events (duration, amount of rainfall, intensity, and time between events), operations and maintenance practices (e.g., street sweeping), soil type and particle sizes, multiple chemical conditions, the amount of vehicular traffic, and atmospheric deposition. The U.S. Environmental Protection Agency (EPA) estimates that short-term runoff from construction sites, without adequate erosion and runoff control measures, can contribute more sediment to receiving waters than that which is deposited by natural processes over a period of several decades.⁵

The quality of urban runoff in the City is typical of most urban areas and includes a variety of common contaminants.⁶ These pollutants consist primarily of suspended sediments, fertilizers and pesticides, animal waste, and contaminants that are commonly associated with automobiles (e.g., petroleum compounds such as oil, grease, and hydrocarbons). In addition, urban stormwater often contains high levels of soluble and particulate heavy metals generated from traffic, industrial facilities, and occasionally, residential sources.

⁵ U.S. Environmental Protection Agency (U.S. EPA). 1997. *Establishment of Numeric Criteria for Priority Pollutants for the State of California; California Toxics Rule*. EPA-823-F-97-008.

⁶ City of Huntington Beach, *Citywide Urban Runoff Management Plan, 2005*.

b. Regulatory Framework

(1) Federal

(a) Clean Water Act

The Clean Water Act (CWA) was designed to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. The US EPA has delegated responsibility for implementation of portions of the CWA, including water quality control planning and control programs, such as the NPDES Program, to the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs). While the NPDES system is administered by federal and State programs, the local authority provides the specific details with which projects must comply. Thus, the NPDES program, as implemented in the City of Huntington Beach, is described in detail under the Local regulations.

(b) Total Maximum Daily Loads

The CWA Section 303(d) established the Total Maximum Daily Load (TMDL) Program. The purpose of the TMDL program is for states to identify streams, lakes, and coastal waters that do not meet certain water quality standards and are not expected to meet standards solely through technology-based controls of point source discharges. For such watersheds, a TMDL for the constituent(s) for which the water body is impaired must be determined.

The TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still achieve the target water quality objective. All sources of the constituent(s) must be identified and loads quantified. Load reductions are determined and then allocated among the sources. Finally, an implementation plan is prepared to achieve the load reductions.

As indicated above, the project site is located in the Anaheim Bay-Huntington Harbour Watershed and discharges to the East Garden Grove Wintersburg Channel, which drains to Huntington Harbour, Anaheim Bay, and Bolsa Chica State Beach. Anaheim Bay is listed on the 2006 CWA Section 303(d) list for Pesticides, Metals, Organic Compounds, and Sediment (Dieldrin, Nickel, Polychlorinated Biphenyls (PCBs), and Sediment Toxicity). Huntington Harbour is listed on the 2006 CWA Section 303(d) list for Pesticides, Metals, Pathogens, Organic Compounds, and Sediment (Chlordane, Copper, Lead, Nickel, Pathogens, PCBs, and Sediment Toxicity). Bolsa Chica State Beach is listed on the 2006 CWA Section 303(d) list for Metals (Copper and Nickel).⁷

(2) State

Responsibility for the protection of water quality in California resides with the SWRCB and nine RWQCBs. The SWRCB establishes statewide policies and regulations for the implementation of water quality control programs mandated by federal and state water quality statutes and regulations. The RWQCBs develop and implement Water Quality Control Plans (Basin Plans) that consider regional beneficial uses, water quality characteristics, and water quality problems. The Santa Ana Regional Water Quality Control Board (SARWQCB) implements a number of federal and State laws, the most important of which are the State Porter-Cologne Water Quality Control Act and the Federal Clean Water Act.

⁷ *WQMP for the Huntington Beach Vans Skate Park, prepared by Rick Engineering Company on October 13, 2011.*

All projects resulting in discharges, including the proposed project, whether to land or water, are required to obtain approval of Waste Discharge Requirements (WDRs) by the RWQCBs. Land and groundwater related WDRs (i.e., non-NPDES WDRs) regulate discharges of privately or publicly treated domestic wastewater and process and wash-down wastewater. WDRs for discharges to surface waters also serve as NPDES permits, which are further described below.

(a) Porter-Cologne Water Quality Act

The State of California's Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) provides the basis for water quality regulation within California, including the California Toxics Rule (CTR), Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP), Inland Surface Water Quality Standards, California Urban Water Management Act, and NPDES permits. The SWRCB administers water rights, water pollution control, and water quality functions throughout the state, while the RWQCBs conduct planning, permitting, and enforcement activities. The Porter-Cologne Water Quality Control Act authorizes the SWRCB to adopt, review, and revise policies for all waters of the state (including both surface and groundwater) and directs the RWQCBs to develop regional Basin Plans. Section 13170 of the California Water Code also authorizes the SWRCB to adopt water quality control plans on its own initiative.

(b) Waste Discharge Requirements

The water quality objectives are achieved primarily through the establishment and enforcement of waste discharge requirements. All dischargers of waste to waters of the State are subject to regulation under the Porter-Cologne Act. This includes both point and diffuse source dischargers. All current and proposed discharges to land must be regulated under WDRs, waivers of WDRs, a basin plan prohibition, or some combination of these administrative tools. Discharges of waste directly to State waters would be subject to an individual NPDES permit, which also serves as a WDR.

The RWQCBs have primary responsibility for issuing WDRs. The RWQCBs may issue individual WDRs to cover individual discharges or general WDRs to cover a category of discharges. WDRs may include effluent limitations or other requirements that are designed to implement applicable water quality control plans, including designated beneficial uses and the water quality objectives established to protect those uses and prevent the creation of nuisance conditions.

(c) National Pollutant Discharge Elimination System (NPDES)

The SWRCB and RWQCBs also implement, monitor, and enforce the NPDES storm water permitting and waste discharge requirements within their jurisdiction. In general, the regulations require all communities with populations over 50,000 to develop programs for reducing pollutants carried by stormwater runoff into waters of the United States. The SWRCB and RWQCBs also develop and implement state or regional general permits regulating certain types of discharges. These permits serve as the mechanism for enforcement of the program.

(i) NPDES General Permit for Storm Water Discharges Associated with Construction Activity (Construction General Permit)

The SWRCB permits all regulated construction activities under the NPDES General Permit for Storm Water Discharges Associated with Construction Activity (Order No. 2009-009-DWQ (NPDES No. CAS000002)). In accordance with NPDES regulations, to minimize the potential effects of construction runoff on receiving water quality, California requires that any construction activity affecting 1 acre or more must obtain coverage under the Construction General Permit.

The Construction General Permit requires projects that disturb 1 or more acres obtain coverage under the Construction General Permit. This includes submittal of a Notice of Intent (NOI) to comply with permit conditions and the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which must be prepared before construction and coverage under the Construction General Permit begins. Components of SWPPPs typically include specifications for BMPs to be implemented during project construction for the purpose of minimizing the discharge of pollutants in storm water from the construction area. In addition, a SWPPP includes measures to minimize erosion from and stabilization of disturbed surfaces, which is also incorporated into a WQMP in accordance with the Orange County Municipal Stormwater NPDES Permit, after construction is completed, and identifies a plan to inspect and maintain project BMPs and facilities during construction. Because the proposed project would disturb more than 1 acre, construction would be subject to the Construction General Permit.

(3) Local/Regional

(a) Santa Ana River Basin Water Quality Control Plan (Basin Plan)

The Santa Ana RWQCB (Region 8) has jurisdiction over the Santa Ana River Basin. The Santa Ana RWQCB (SARWQCB) is required by law to develop, adopt, and implement a Water Quality Control Plan for the entire region. The principal elements of the Water Quality Control Plan are a statement of beneficial water uses that the SARWQCB will protect; water quality objectives needed to protect the designated beneficial water uses; and strategies and time schedules for achieving the water quality objectives. The water quality objectives are achieved primarily through the establishment and enforcement of WDRs. Both beneficial uses and water quality objectives comprise the relevant water quality standards.

The Santa Ana Water Quality Control Plan (Basin Plan) specifically: (1) designates beneficial uses for surface and ground waters; (2) 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 (3) describes implementation programs to protect all waters in the region. In cases where the Basin Plan does not contain a criteria for a particular pollutant, other criteria are used to establish a water quality objective. These may be applied from SWRCB documents (e.g., the Inland Surface Waters Plan and the Pollutant Policy Document) or from water quality criteria developed under Section 304(a) of the Clean Water Act (e.g., California Toxics Rule).

The SARWQCB has set water quality objectives for all surface waters in the region. Chemical constituents are regulated depending upon the beneficial use of the water body. Water quality objectives are also set for groundwater and enclosed bays and estuaries. The proposed project would be subject to the requirements of the Basin Plan.

(b) General Waste Discharge Requirements for Discharges to Surface Waters That Pose An Insignificant (De Minimus) Threat to Water Quality (De Minimus Threat General Permit)

Low threat discharges are regulated under Order No. 2009-0030, NPDES No. CAS618030 Waste Discharge Requirements for Discharges for the County of Orange, Orange County Flood Control District and the incorporated cities of Orange County within the Santa Ana Region. Construction dewatering wastes (except stormwater) are regulated as de minimus threat discharges to surface waters that are subject to the terms and conditions of this Order and all dischargers must comply with the effluent limitations specified in the Construction General Permit Order No. 2009-009-DWQ CAS 000002. Development of the proposed project is not anticipated to require groundwater dewatering during construction and/or operation because the excavation depth would not exceed more than 7 feet below the ground surface which is the historic high groundwater level. However, in the unanticipated event that groundwater is encountered and dewatering is necessary, the project would need to comply with the applicable NPDES and Construction General Permits.

(c) Orange County Municipal Stormwater NPDES Permit (Stormwater NPDES Permit)

Stormwater discharges from the City are also currently regulated under the fourth-term regional individual permit—Santa Ana Region Waste Discharge Requirements for the County of Orange, Orange County Flood Control District, and The Incorporated Cities of Orange County within the Santa Ana Region Areawide Urban Stormwater Runoff Orange County (Order No. R8-2009-0030, NPDES No. CAS618030) (Municipal NPDES Permit).

The co-permittees of this Municipal NPDES Permit are responsible for the management of storm drain systems within their jurisdictions and are required to implement management programs, monitoring programs, implementation plans and all BMPs outlined in the Drainage Area Master Plan (DAMP) within each respective jurisdiction, and take any other actions as may be necessary to meet the Maximum Extent Practicable (MEP) standard. The Municipal NPDES Permit differs from the Construction General Permit in that it regulates stormwater runoff from sites and activities following construction, as opposed to during construction activities.

This Municipal NPDES Permit requires that discharges from the Municipal Separate Storm Sewer Systems (MS4s) shall not cause or contribute to exceedances of receiving water quality standards (designated beneficial uses and water quality objectives) for surface waters or groundwaters. The DAMP and its components shall be designed to achieve compliance with receiving water limitations. It is expected that compliance with receiving water limitations will be achieved through an iterative process and the application of increasingly more effective BMPs. The existing DAMP will have to be revised in accordance with the fourth-term Municipal NPDES Permit.

Provisions for compliance inspection are incorporated in the Municipal NPDES Permit and include requirements for site inspections, including review of erosion and sediment control and BMP implementation plans and effectiveness for residential projects and commercial and industrial developments. Each co-permittee is also required to enforce its ordinances and permits at all construction sites.

Requirements for new development and significant re-development include the establishment of a mechanism to ensure (prior to issuance of any local permits or other approvals) that all construction sites

that are required to obtain coverage under the State's Construction General Permit for construction activities have filed an NOI with the State Board to be covered by the relevant construction permit and that a SWPPP is prepared and implemented.

This Municipal NPDES Permit also includes requirements for periodic stormwater monitoring for the County of Orange, Orange County Flood Control District, and Incorporated Cities of Orange County within the Santa Ana Region Areawide Urban Stormwater Runoff area.

(d) Orange County Municipal Stormwater NPDES Permit (Stormwater NPDES Permit)

Under the Municipal NPDES Permit (Order No. R8-2009-0030 NPDES No. CAS 618030), each permittee, including the City of Huntington Beach, shall ensure that an appropriate WQMP is prepared for the following categories of new development/significant redevelopment projects (priority development projects) below. The WQMP shall be developed in accordance with the approved Model WQMP and shall incorporate Low Impact Development (LID) principles in the WQMP. At a minimum, structural BMPs shall be designed and built in accordance with the approved Model WQMP and must be sized to comply with one of the following numeric sizing criteria listed in the Municipal NPDES Permit. Specific development projects included in the proposed Specific Plan area would be considered a priority project, requiring a project-specific WQMP if they fall into one of the categories summarized below:

Priority Development Projects Categories:

- All significant redevelopment projects, where significant redevelopment is defined as projects that include the addition or replacement of 5,000 square feet or more of impervious surface on a developed site.
- New development projects that create 10,000 square feet or more of impervious surface (collectively over the entire project site).
- Automotive repair shops (with SIC codes 5013, 5014, 5541, 7532-7534, 7536-7539).
- Restaurants where the land area of development is 5,000 square feet or more.
- All hillside developments on 5,000 square feet or more, which are located on areas with known erosive soil conditions or where the natural slope is twenty-five percent or more.
- Developments of 2,500 square feet of impervious surface or more, adjacent to (within 200 feet) or discharging directly into environmentally sensitive areas, such as areas designated in the Ocean Plan as Areas of Special Biological Significance or waterbodies listed on the CWA Section 303(d) list of impaired waters.
- Parking lots of 5,000 square feet or more of impervious surface exposed to storm water.
- Streets, roads, highways and freeways of 5,000 square feet or more of paved surface shall incorporate USEPA guidance, "Managing Wet Weather with Green Infrastructure: Green Streets" in a manner consistent with the maximum extent practicable standard.
- Retail gasoline outlets of 5,000 or more square feet with a projected average daily traffic of 100 or more vehicles per day.

- Emergency and public safety projects in any of the above-listed categories may be excluded if the delay caused due the requirement for a WQMP compromises public safety, public health and/or environmental protection.

The permittees shall require non-priority development projects to document, via a WQMP or similar mechanism, site design, source control, and any other BMPS that may or may not include treatment control BMPs. Minimum structural BMPs must either be sized to comply with either the volume-based or flow-based numeric sizing criteria (Municipal NPDES Permit Section XII.E). Any structural infiltration BMPs must also meet the minimum requirements per the Municipal NPDES Permit Section XII.B.5. The project qualifies as a Priority Project as it would result in greater than 5,000 square feet o of impervious surface on the project site.

(i) Low Impact Development (LID)

- The LID design goal shall be to maintain or replicate the pre-development hydrologic regime that creates a functionally equivalent post-development hydrologic regime. Each priority development project shall infiltrate, harvest and re-use, evapotranspire, or bio-treat the 85th percentile storm event (design capture volume). Any portion of the design capture volume that is not infiltrated, harvested and re-used, evapotranspired or bio-treated on site by LID BMPs shall be treated and discharged in accordance with Section XII.C.7 and/or Section XII.E of the Municipal NPDES Permit and associated documents (Model WQMP, DAMP, Local Implementation Plans). LID combines hydrologically functional site design with pollution prevention methods to compensate for land development impact on hydrology and water quality.
- LID site design principles shall reduce runoff to a level consistent with the maximum extent practicable standard during each phase of priority projects. Each project shall include site design BMPs during development of the preliminary and final WQMPs. During the early planning stages of a project, the LID principles shall be considered to address pollutants of concern identified in the Watershed Action Plans and TMDL Implementation Plans, and the LID BMPs shall be incorporated into the sites conceptual WQMP. Site design considerations that must be included in the WQMP are listed in the Municipal NPDES Permit.
- If there are constraining factors to implementation of LID principals on a site-specific basis, (such as soil conditions, including soil compaction, saturation (e.g., hydric soils) and permeability; groundwater levels; soil and/or groundwater contaminants (Brownfield developments); space restrictions (in-fill projects, redevelopment projects, high density development, transit-oriented developments); naturally occurring contaminants; and others), the LID principles could be integrated into other programs, such as: Smart Growth, New Urbanism, regional or sub-watershed management approaches, or through alternatives and in-lieu programs as specified in the Municipal NPDES Permit.

(ii) Hydromodification⁸

Each priority development project shall also be required to ascertain the impact of the development on the site's hydrologic regime and include the findings in the WQMP. If a hydrologic condition of concern exists, then the WQMP shall include an evaluation of whether the project will adversely impact downstream

⁸ *Hydromodification (also called hydrograph modification) refers to change in the rate, timing, and volume of runoff; a change in the shape of the flow versus time graph.*

erosion, sedimentation, or stream habitat. If the evaluation determines adverse impacts are likely to occur, the project proponent shall implement additional site design controls, on-site management controls, structural treatment controls, and/or in-stream controls to mitigate the impacts.

(e) Orange County Drainage Area Management Plan (DAMP)

The purpose of the DAMP is to satisfy Municipal NPDES Permit conditions for creating and implementing an URMP to reduce pollutant discharges to the maximum extent practicable (MEP) for protection of receiving waterbody water quality and support of designated beneficial uses. The DAMP contains guidance on both structural and nonstructural BMPs for meeting these goals.

(f) City of Huntington Beach Local Implementation Plan (City of Huntington Beach LIP)

The current specific water pollution control program elements are documented in the DAMP and corresponding City of Huntington Beach Stormwater NPDES Permit Local Implementation Plan (City of Huntington Beach LIP). The City has developed the City of Huntington Beach LIP using the DAMP as its basis. As with the DAMP, the City of Huntington Beach LIP proposes a wide range of continuing and enhanced BMPs and control techniques that will be implemented and reported on as part of the Fourth Term Permit reports.

The City of Huntington Beach LIP has also incorporated the model construction program described in the DAMP. The construction program includes requirements, guidelines, and methods that construction site owners, developers, contractors and other responsible parties must use for pollution prevention to protect water quality from construction discharges. Regardless of size or priority, all construction projects are required to implement BMPs to prevent runoff and discharges into the storm drain system or water bodies. At a minimum, all construction projects must include erosion and sediment controls, as well as waste and materials management controls. The City of Huntington Beach LIP designates the construction-specific BMPs that the City has determined acceptable for use within the City's jurisdiction.

(g) City of Huntington Beach Citywide Urban Runoff Management Plan

The Citywide Urban Runoff Management Plan (CURMP) provides a broad framework for managing the quantity and quality of all urban runoff that reaches receiving waters from the land surfaces and through the storm drain system within the City. The Water Quality Element of the CURMP focuses primarily on managing runoff quality, while the Drainage Element addresses flood hazards and inconveniences. The CURMP identifies potential common solutions that can address both water quality and quantity concerns.

(i) Section 3: Water Quality Element

The Water Quality Element provides a basis for implementing a comprehensive program for improving water quality through a combination of methods to reduce the level of urban runoff and pollutants emanating from private as well as public property and thus enhancing the quality of water discharged from the municipal storm drain system within the City.

Water Quality Management Plan

During the project review, approval and permitting process, the City requires all new development and significant redevelopment to address the quantity and quality of storm water runoff from the completed

development. A project-specific Water Quality Management Plan (WQMP) describing how the project will address runoff is required for all projects listed under the City's "Priority Project Category."

The WQMP describes how the proposed project will meet the following requirements:

- Incorporate and implement all applicable Source Control BMPs
- Consider the implementation of Site Design BMPs (e.g., pervious pavement, bioretention), and document those BMPs included and those not included; and
- Either implement Treatment Control BMPs or participate in or contribute to an acceptable regional or watershed management program.

The City has general/standard conditions of approval to protect receiving water quality from short- and long-term impacts of new development and significant redevelopment. Prior to issuance of any grading or building permit for projects that disturb soil of one or more acres, the Applicant shall demonstrate, by providing a copy of the Notice of Intent submitted to the SWRCB and a copy of the subsequent issuance of a Waste Discharge Identification number, that coverage has been obtained under the Construction General Permit. Projects subject to this requirement shall also prepare, submit, and implement a Stormwater Pollution Prevention Plan, including erosion control measures. This also includes the requirement that the Applicant demonstrate that all structural and non-structural BMPs described in the WQMP have been installed and implemented in accordance with approved plans and specifications prior to close-out of a grading or building permit and/or issuance of a Certificate of Use or Occupancy.

(ii) Section 4: Drainage Element

The Drainage Element of the CURMP incorporates a city-based MPD that is a comprehensive drainage study of the community that identifies and creates an inventory of existing storm drain facilities, identifies those areas where system elements do not meet the latest goals established by the City, ranks the severity of the difference between existing capacity and the capacity needed to achieve those goals, prepares planning level cost opinions for system upgrades, and recommends system improvements to initiate the corrections.

(h) City of Huntington Beach Municipal Code

In order to comply with NPDES permit requirements, the City of Huntington Beach has codified requirements in their municipal code. The following sections of the City's municipal code would be applicable to the proposed project:

- Chapter 14.25 (Stormwater and Urban Runoff Management)
- Chapter 14.48 (Drainage)
- Chapter 14.52 (Water Efficient Landscape Requirement)
- Chapter 17.05 (Grading and Excavation Code)

(i) City of Huntington Beach General Plan

The following goals, objectives, and policies within the Huntington Beach General Plan are applicable to hydrology and water quality.

Goal U3 Provide a flood control system which is able to support the permitted land uses while preserving the public safety; upgrade existing deficient systems; and pursue funding sources to reduce the costs of flood control provisions in the City.

- **Objective U3.1** Ensure that adequate storm drain and flood control facilities are provided and properly maintained in order to protect life and property from flood hazards.
 - **Policy U3.1.1** Maintain existing public storm drains and flood control facilities, upgrade and expand storm drain and flood control facilities.
 - **Policy U3.1.3** Monitor the demands and manage development to mitigate impacts and/or facilitate improvements to the storm drainage system.
- **Objective U3.2** Ensure the costs of infrastructure improvements to the storm drain and control system are borne by those who benefit.
 - **Policy U3.2.1** Require improvements to the existing storm drain and flood control facilities necessitated by new development be borne by the new development benefiting from the improvements; either through the payment of fees; or by the actual construction of the improvements in accordance with State Nexus Legislation.
- **Objective U3.3** Ensure that storm drain facilities (channels and outputs) do not generate significant adverse impacts on the environment in which the facilities traverse or empty.
 - **Policy U3.3.1** Evaluate any existing environmental degradation or potential degradation from current or planned storm drain and flood control facilities in wetlands or other sensitive environments.
 - **Policy U3.3.2** Where feasible, utilize natural overland flows, open channels, and swale routings as preferred alignments for components of drainage systems.
 - **Policy U3.3.3** Require that new developments employ the most efficient drainage technology to control drainage and minimize damage to environmentally sensitive areas.

2. ENVIRONMENTAL IMPACTS

a. Significance Thresholds

Appendix G of the CEQA Guidelines, the Initial Study Environmental Checklist form, includes questions relating to hydrology and water quality that are utilized as the thresholds of significance in this section (Thresholds 1-10). Additional thresholds have been added by the City to ensure that hydrology and water quality impacts of the proposed project are adequately addressed in this EIR (Thresholds 11-16). Accordingly, the proposed project may create a significant environmental impact if it would result in one or more of the following:

Threshold 1: Violate any water quality standards or waste discharge requirements (refer to Impact Statement 4.D-2).

- Threshold 2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted) (refer to Chapter 6, *Other Mandatory CEQA Considerations*, and the Initial Study contained in Appendix A. A less than significant impact would occur in this regard.).
- Threshold 3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site (refer to Chapter 6, *Other Mandatory CEQA Considerations*, and the Initial Study contained in Appendix A. A less than significant impact would occur in this regard.).
- Threshold 4: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off the site (refer to Section 6, *Other Mandatory CEQA Considerations*, and the Initial Study contained in Appendix A. A less than significant impact would occur in this regard.).
- Threshold 5: Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff (refer to Impact Statement 4.D-1).
- Threshold 6: Otherwise substantially degrade water quality (refer to Impact Statement 4.D-2).
- Threshold 7: Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map (refer to Chapter 6, *Other Mandatory CEQA Considerations*, and the Initial Study contained in Appendix A. No impact would occur in this regard.).
- Threshold 8: Place within a 100-year flood hazard area structures which would impede or redirect flood flows (refer to Chapter 6, *Other Mandatory CEQA Considerations*, and the Initial Study contained in Appendix A. No impact would occur in this regard.).
- Threshold 9: Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam (refer to Chapter 6, *Other Mandatory CEQA Considerations*, and the Initial Study contained in Appendix A. No impact would occur in this regard.).
- Threshold 10: Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow (refer to Chapter 6, *Other Mandatory CEQA Considerations*, and the Initial Study contained in Appendix A. No impact would occur in this regard.).

- Threshold 11: Potentially impact stormwater runoff from construction activities (refer to Impact Statement 4.D-1 and 4.D-2).
- Threshold 12: Potentially impact stormwater runoff from post-construction activities (refer to Impact Statement 4.D-1 and 4.D-2).
- Threshold 13: Result in a potential for discharge of stormwater pollutants from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas, loading docks, or other outdoor work areas (refer to Impact Statement 4.D-2).
- Threshold 14: Result in the potential for discharge of stormwater to affect the beneficial uses of the receiving waters (refer to Impact Statement 4.D-2).
- Threshold 15: Create or contribute significant increases in the flow velocity or volume of stormwater runoff to cause environmental harm refer to Chapter 6, *Other Mandatory CEQA Considerations*, and the Initial Study contained in Appendix A. No impact would occur in this regard.).
- Threshold 16: Create or contribute significant increases in erosion of the project site or surrounding areas (refer to Chapter 6, *Other Mandatory CEQA Considerations*, and the Initial Study contained in Appendix A. A less than significant impact would occur in this regard.).

b. Methodology

The evaluation of hydrology and water quality impacts is based on the comparison of the proposed project to the thresholds stated above and applicable regulatory requirements. The analysis is based on the information contained in the WQMP prepared for the project by Rick Engineering Company, dated October 13, 2011.

c. Project Features

The Preliminary WQMP for the proposed project is intended to comply with the requirements of the local NPDES Stormwater Program requiring the preparation of the plan. The final WQMP will reflect up-to-date conditions on the site consistent with the current Orange County Drainage Area Management Plan (DAMP) and the intent of the non-point source NPDES Permit for Waste Discharge Requirements for the County of Orange, OCFCD and the incorporated Cities of Orange County within the Santa Ana Region.

The WQMP identifies BMPs that will be included in the design of the proposed project, which include, but may not be limited to the following:

Infiltration BMPs

- BMP-1 Porous Landscaping - Porous planter areas/landscaping shall be utilized to allow stormwater to infiltrate and evaporate through them.

BMP-2 Permeable Pavement and Media – Permeable pavement and media shall be utilized to allow stormwater to filter through them to remove pollutants prior to entering and underground detention area.

Evapotranspiration, Rainwater Harvesting BMPs

BMP-3 Underground Detention – Storage media shall be placed beneath the pavers to act as an underground detention are for stormwater.

Non-Structural Source Control BMPs [BMP nos. (i.e., N1, N2, etc.) match those prescribed in WQMP]

BMP-N1 Education for Property Owners, Tenants and Occupants – The owner shall distribute educational materials provided in the WQMP and review them yearly, as well when there is change in ownership.

BMP-N2 Activity Restrictions – Any activity that may affect surrounding areas or the downstream receiving waters (such as car washed or leaving trash bin lids open) is strictly prohibited.

BMP-N3 Common Area Landscape Management - Inspect landscaping and irrigation systems on a monthly basis and repair/replace if needed.

BMP-N4 BMP Maintenance – Inspect systems; remove trash and debris and repair/replace if needed. The BMPs shall be monitored before and after a major storm event and monthly.

BMP-N10 Uniform Fire Code Implementation - The project shall implement all applicable requirements of the Uniform Fire Code.

BMP-N11 Common Area Litter Control – Wastes (debris, vegetation, etc) shall be properly disposed. No stormwater runoff shall pass through trash storage areas. Trash storage areas shall be checked before and after a major storm event and monthly to reduce debris.

BMP-N12 Employee Training - The owner shall distribute educational materials provided in the WQMP and review them yearly, as well when there is a new employee.

BMP-N14 Common Area Catch Basin Inspection – Inspect systems; remove trash and debris and repair/replace if needed. The catch basins shall be monitored before and after a major storm event and monthly. Cleaning shall be required annually.

BMP-N15 Street Sweeping Private Streets and Parking Lots – A street sweeper shall clean the privately maintained streets and parking areas to reduce debris on a monthly basis.

Structural Source Control BMPs [BMP nos. (i.e., S1,S2, etc.) match those prescribed in WQMP]

- BMP-S1 Storm Drain Stenciling and Signage – Inspect stenciling and signage and repair/replace if needed. The stenciling and signage shall be monitored annually.

- BMP-S3 Trash and Waste Storage Areas – Wastes (debris, vegetation, etc) shall be properly disposed. No stormwater runoff shall pass through trash storage areas. Trash storage areas shall be checked before and after a major storm event and monthly to reduce debris.

- BMP-S4 Irrigation Systems – The use of efficient irrigation systems and landscape design, water conservation, smart controllers and source control shall be implemented as part of the project irrigation plans.

- BMP-S5 Slopes/Channels – The project shall protect all slopes and channels and provide energy dissipation.

In addition, the BECSP Development Code, which includes development standards, development regulations, and guidelines, governs all development actions within the BECSP area, including the project site. The project would be subject to development standards specific to the project site’s BECSP designation as Town Center – Neighborhood, included as BECSP Section 2.1.4 (Town Center - Neighborhood).

As part of the project design, parking lot sub-base storage areas would be constructed that would detain the incremental increase in runoff from the site to ensure that the post development runoff volume does not exceed that of the predevelopment condition and time of concentration is not less than that for the predevelopment condition. The parking lots would be sized to store the incremental increase of stormwater runoff volume produced by the development of the site for the 100-year design storm, which is more than the hydrologic condition of concern (HCOC) required 2-year design storm as set forth in the *Technical Guidance Document* (TGD) available for the Orange County Stormwater Program.⁹

d. Effects Found Not To Be Significant

Threshold	Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?
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The proposed project would develop the proposed skate park and retail use on the project site, which would result in an increase in impermeable surface area on-site. This reduction in pervious surface area could potentially reduce the amount of water reaching groundwater aquifers beneath the site; however, per applicable stormwater regulations, all project-related stormwater generated on-site (i.e., the incremental increase in stormwater flow volume versus pre-project conditions) would be required to be contained within the project boundaries. In order to achieve this, the project design includes permeable gravel paving in the northern parking area, as well as a subdrain and retention/percolation system beneath the skate park, retail use, and southern parking area. These features would serve to effectively contain all project-related

⁹ *Technical Guidance Document (TGD) for the Orange County Stormwater Program is available at ocwatersheds.com.*

stormwater on-site and allow it to eventually percolate into the subsurface soil layers and ultimately local groundwater aquifers. Since all stormwater would be contained on-site and allowed to percolate into the soil, no substantial adverse effects on groundwater supplies or groundwater hydrology would occur from project implementation. In addition, City requirement CR4.7-1 and BECSP EIR mitigation measures MM4.7-1 and MM4.7-2 (included in Attachment B to the project's Initial Study [Appendix A of this EIR]) would be implemented to ensure that impacts remain less than significant. Therefore, further evaluation of this issue in an EIR is not required.

Threshold	Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site?
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No streams or rivers currently exist on the project site, and stormwater currently is conveyed off-site to local gutters via sheet flow. Following construction activities, the site would be characterized by increased impermeable surface area, which would increase stormwater flows in local storm drains if allowed to flow from the site. However, as discussed above, all stormwater generated by the project would be contained on-site through permeable paving and percolation through subdrains and porous sub-base. Additionally, on-site soils would be stabilized with structures/paving materials or landscaped, which would minimize the potential for substantial on-site erosion or siltation to occur. Furthermore, City requirement CR4.5-1 and BECSP EIR mitigation measure MM4.5-1 (included in Attachment B to the project's Initial Study [Appendix A of this EIR]) would be implemented to ensure that impacts remain less than significant. Given that the project would not result in a net increase in off-site stormwater flows and on-site soil would be effectively stabilized by structures, paving, and landscaping, impacts would be less than significant in this regard and further evaluation of this issue in an EIR is not required.

Threshold	Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site?
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The proposed project, as indicated previously, would be designed to contain all stormwater flows generated on-site by the project via permeable paving and subdrain system to retain stormwater under the site. While the proposed project would alter the existing drainage pattern of the site, it would not result in a substantial increase in runoff such that flooding would occur on- or off-site, since the additional stormwater flows associated with the increased impermeable surface area would be contained on-site. Additionally, City requirement CR4.7-1 and BECSP EIR mitigation measures MM4.7-1, MM4.7-3, and MM4.7-4 (included in Attachment B to the project's Initial Study [Appendix A of this EIR]) be implemented to ensure that impacts remain less than significant. As such, further evaluation of this issue in an EIR is not required.

Threshold	Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
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The project site is not located within a designated 100-year flood hazard area, and no housing is included among the proposed improvements. As such, no impacts in this regard would occur and further evaluation of this issue in an EIR is not required.

Threshold	Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows? ?
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The project site is not located within a designated 100-year flood hazard area. As such, no impacts in this regard would occur and further evaluation of this issue in an EIR is not required.

Threshold	Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?
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No dams or large bodies of water are located near or upstream of the project site such that adverse effects associated with flooding from dam failure or another large water source could occur. Therefore, given the location of the project site, no flooding impacts related to dam failure are expected and further evaluation of this issue in an EIR is not required.

Threshold	Would the project result in inundation by seiche, tsunami, or mudflow?
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No open bodies of water or hillside areas are located near or upstream of the project site such that adverse effects associated with seiches or mudflows could occur. Similarly, the project site is located approximately four miles inland from the Pacific Ocean at the closest point, and therefore adverse tsunami-related effects are not expected. Therefore, given the location of the project site, no impacts related to seiche, tsunami, or mudflows would result from project implementation and further evaluation of this issue in an EIR is not required.

Threshold	Would the project create or contribute significant increases in the flow velocity or volume of stormwater runoff to cause environmental harm?
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The proposed project would be required to contain all project-related stormwater volume on-site, and therefore stormwater flows during storm events would be comparable to existing conditions. As such, the proposed project would not create or contribute significant increases in the flow velocity or volume of stormwater runoff to cause environmental harm, and further evaluation of this issue in an EIR is not required.

Threshold	Would the project create or contribute significant increases in erosion of the project site or surrounding areas?
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Construction activities would be carried out in accordance with the requirements of the General Construction Permit issued by the RWQCB and in accordance with the project's SWPPP, which would preclude the potential for significant adverse erosion effects. Following construction activities, the site would be characterized by increased impermeable surface area, which would increase stormwater flows in local storm drains if allowed to flow from the site. However, as discussed above, all stormwater generated by the project would be contained on-site through permeable paving and percolation through subdrains and porous sub-base. Additionally, on-site soils would be stabilized with structures/paving materials or landscaped, which would minimize the potential for substantial on-site erosion to occur. Additionally, City requirement CR4.5-1 and BECSP EIR mitigation measure MM4.5-1 (included in Attachment B to the project's

Initial Study [Appendix A of this EIR]) would be implemented to ensure that impacts remain less than significant. Given that the project would not result in a net increase in off-site stormwater flows and on-site soil would be effectively stabilized by structures, paving, and landscaping, impacts would be less than significant in this regard and further evaluation of this issue in an EIR is not required.

e. Analysis of Project Impacts

The proceeding analysis of project impacts includes four “Impacts Statements”: 4.D-1 to 4.D-4.

(1) Stormwater Drainage, Runoff, and Erosion

Threshold	Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?
Threshold	Would the project otherwise substantially degrade water quality?
Threshold	Would the project potentially impact stormwater runoff from construction activities?
Threshold	Would the project potentially impact stormwater runoff from post-construction activities?

4.D-1 Post development runoff volume would not exceed that of the predevelopment condition and the time of concentration would not be less than that for the predevelopment condition. Thus, the post-project site would not have any significant hydrology impacts downstream.

The 2.72-acre project site is currently vacant and consists of dirt and minimal vegetation. The site is currently 100% pervious area. The post-project site would consist of a skate park, permeable parking lots, a retail building, and landscaped areas. The post-project site would include 1.62 acres of pervious area (60%) and 1.10 acres of impervious area (40%).

As indicated in the Existing Setting section above, the East Garden Grove-Wintersburg Channel, which would transport runoff water from the project site, is an earthen channel that is considered unstable in at least one downstream section. In addition, a new/upgraded storm drain is needed along Gothard Street between Center Avenue and Edinger Avenue. These two issues are considered HCOCs.

The post-project site would be graded with a high point near the center and would drain north and south into the permeable parking lots at the ends of the site. The HCOCs are being addressed by the proposed parking lot sub-base storage areas that would detain the incremental increase in runoff and ensure that the post development runoff volume does not exceed that of the predevelopment condition and time of concentration is not less than that for the predevelopment condition. The parking lots would be sized to store the incremental increase of stormwater runoff volume produced by the development of the site for the 100-year design storm, which is more than the HCOC required 2-year design storm as set forth in the TGD available for the Orange County Stormwater Program.

The parking lot pavers and sub-base would filter the stormwater via filtration thru media and soil to remove pollutants and store it underground (see BMP-2 and BMP-3). A perforated pipe system would be constructed within the sub-base section to allow removal of any stormwater that does not infiltrate into the soil beneath. After the peak of the storm, the stored water would be pumped out of the perforated pipes and discharged into Center Avenue and McFadden Avenue thru curb outlets. The pump system would be designed so that the discharge would not to exceed the pre-project volumes and flow rates at any time. Similar to existing conditions, stormwater would flow down Center Avenue and McFadden Avenue thru the gutter and down Gothard Street to the intersection of Gothard Street and Edinger Avenue. The water would enter the City of Huntington Beach storm drain system thru an existing catch basin that leads to a 18-inch storm drain line in Gothard Street which discharges to the East Garden Grove Wintersburg Channel.

Based on the above, since the post development runoff volume would not exceed that of the predevelopment condition and the time of concentration would not be less than that for the predevelopment condition, the post-project site would not have any significant hydrology impacts downstream. Impacts would be less than significant.

(2) Water Quality

Threshold	Would the project violate any water quality standards or waste discharge requirements?
Threshold	Would the project otherwise substantially degrade water quality?
Threshold	Would the project potentially impact stormwater runoff from construction activities?
Threshold	Would the project potentially impact stormwater runoff from post-construction activities?
Threshold	Would the project result in a potential for discharge of stormwater pollutants from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas, loading docks, or other outdoor work areas?
Threshold	Would the project result in the potential for discharge of stormwater to affect the beneficial uses of the receiving waters?

4.D-2 Construction and operation of the project would comply with all applicable regulatory requirements regarding water quality. Compliance with applicable regulatory requirements and implementation of the project design features, including BMPs as part of the project’s WQMP, would ensure that construction and operational water quality impacts are less than significant.

(a) Construction

The proposed project would be subject to all existing regulations associated with the protection of water quality. The applicable WDRs, the Construction General Permit for construction activities and Municipal NPDES Permit are considered protective of water quality during construction and would, therefore, prevent a substantial violation of water quality standards and minimize the potential for contributing additional sources of polluted runoff during construction of the proposed project. These existing regulations,

programs, and policies would ensure that the potential for discharge of polluted stormwater from construction sites to affect beneficial uses of receiving waters and water quality standards, where applicable, would not be substantial. Implementation of existing regulatory requirements would ensure that on-site erosion and siltation are minimized and that construction of the proposed project would not result in the exceedance of water quality standards during construction. Based on the above, construction-related impacts would be less than significant.

(b) Operation

Operation of the proposed project would result in an increase in the amount of impervious surface at the project site compared to existing conditions. As such, implementation of the proposed project could increase the amount and concentration of pollutants in the annual stormwater runoff leaving the site, as compared to existing conditions. However, as described below, the proposed project would include various design features and would implement LID BMPs to ensure that impacts to water quality are minimized to the extent feasible.

As part of the project design, parking lot sub-base storage areas would be constructed that would detain the incremental increase in runoff from the site to ensure that the post development runoff volume does not exceed that of the predevelopment condition and time of concentration is not less than that for the predevelopment condition. The parking lots would be sized to store the incremental increase of stormwater runoff volume produced by the development of the site for the 100-year design storm.

According to the WQMP, stormwater is not expected to infiltrate into the ground because the depth to historic groundwater is ± 7 feet. Stormwater would be filtered thru the permeable pavement and media below to remove pollutants and it would be stored below ground before the perforated underdrains collect the stormwater and discharge it to the neighboring streets after the peak of the storm. The storage media beneath the pavers would act as an underground detention area for the stormwater. The planter areas within the proposed project would be porous and stormwater should infiltrate or evaporate within them. Stormwater from sidewalks and hardscape areas would be directed to the planter areas to promote infiltration and evapotranspiration.

Consistent with the requirements of the DAMP, the MS4 Permit (adopted May 2009), the City's Municipal Code (Chapter 14.25), and City's LIP, as well as mitigation measure BECSP MM4.7-3 and MM4.7-4, the proposed project has developed a project-specific WQMP that addresses appropriate stormwater quality LID BMPs and water quality management practices. Pursuant to the BECSP, since the proposed project is defined as a priority project, the WQMP includes both source control and treatment control BMPs, as well as Site Design BMPs and will implement LID principles, where applicable and feasible. The WQMP would be reviewed and approved by the City prior to receiving a Precise Grading permit for the proposed project. The project-specific LID BMPs identified in the WQMP are included under the "Project Features" section above. Implementation of the LID BMPs would ensure that the proposed project does not result in a potential for discharge of stormwater pollutants from the project site.

Compliance with applicable regulatory requirements, as well as implementation of the project design features and BMPs identified in the WQMP, would ensure that operation of the proposed project would not affect the beneficial uses of the receiving waters, result in the violation of water quality standards, and

minimize the potential for contributing additional sources of polluted runoff. This impact would be less than significant.

(3) General Plan and BECSP Consistency Analysis

4.D-3 Project implementation would be consistent with the BECSP and the City's General Plan. Thus, no conflicts with either of these planning documents and no impacts would occur in this regard.

Consistent with BECSP EIR mitigation measures MM4.7-3 and BECSP MM4.7-4 (included in Attachment B to the project's Initial Study [Appendix A of this EIR]) and General Plan Goal U3 and its associated objectives and policies, a WQMP has been prepared for the proposed project which indicates that the project would not increase runoff when compared to existing conditions. In addition, the proposed project would implement BMPs contained in the WQMP and comply with applicable existing regulations for the prevention of pollutants in stormwater runoff during construction and operation of the proposed project including NPDES General Permit for Construction Activities and associated SWPPP; Municipal NPDES Permit and associated WQMP, DAMP, LIP; and, Municipal Code Chapter 17.05 Grading and Excavation Code which would reduce the potential erosion within the project site, consistent with General Plan Objective U3.3. Therefore, implementation of the proposed project would not conflict with applicable BECSP and General Plan policies.

3. CUMULATIVE IMPACTS

4.D-4 The project combined with cumulative projects would not impact downstream hydrology or runoff water quality in the vicinity of the project area. Thus, cumulative hydrology and water quality impacts would be less than significant.

As indicated in the analysis above, the proposed project's underground detention system would ensure that the runoff volume from the post development site runoff would not exceed that of the predevelopment condition and time of concentration would not be less than that for the predevelopment condition. As such, the proposed project would not have the potential to result in cumulative off-site downstream hydrology impacts. Also, the project's design features and BMPs prescribed in the WQMP would remove and/or prevent pollutants from substantially degrading the water quality of runoff from the project site, thereby, minimizing the potential for cumulative water quality impacts. Further, project-by-project analysis of water quality impacts and compliance with State and federal regulatory requirements, as well as the requirements of the DAMP, the MS4 Permit, the City's Municipal Code (Chapter 14.25), and City's LIP, where applicable, would ensure that potentially significant cumulative impacts regarding water quality would be reduced to a less than significant level.