4.7 HYDROLOGY AND WATER QUALITY

This section evaluates the potential impacts of implementation of the Cypress College Facilities Master Plan (proposed project) on hydrology and water quality. This evaluation includes an assessment of the direct, indirect, short-term, and long-term effects of the proposed project on surface water, flow patterns, flow rates, and water quality. The evaluation is based on data, publications, and resources provided by public agencies such as the State Water Resources Control Board (SWRCB), the Santa Ana Regional Water Quality Control Board (RWQCB), and the *North Orange County Community College District Storm Water Management Program* (Ninyo & Moore 2015).

4.7.1 Existing Conditions

Cypress College is located on flat terrain in the City of Cypress in northern Orange County. The hydrology of the area is highly urbanized, largely controlled by a network of stormwater inlets, catch basins, underground pipes, and channels that convey stormwater runoff from roofs, streets, and sidewalks to regional flood control channels and eventually out to the Pacific Ocean.

Regional Hydrography

The climate within northern Orange County is characterized by mild winters and warm summers. According to the Western Regional Climate Center, the closest weather station to the project site is the Long Beach Airport, which has recorded average annual temperatures between 54.8 degrees Fahrenheit (°F) and 74.2°F and average annual precipitation of 12 inches (WRCC 2016). With the exception of rare, localized, summertime convective storms, the majority of precipitation occurs between the months of November and April, predominantly in the form of light- to moderate-intensity rain events lasting no more than 1 to 2 days.

Cypress College is located within the jurisdiction of the Santa Ana RWQCB (Region 8), which administers a water quality control plan (Basin Plan) and other water quality programs within the Santa Ana River Basin. The Santa Ana River Basin is a 2,800-square-mile area located roughly between Los Angeles and San Diego that encompasses a group of connected inland basins and open coastal basins drained by surface streams that flow in a generally southwesterly direction to the Pacific Ocean. The boundaries of the Santa Ana River Basin are demarcated partly by physical watershed divides and partly by administrative boundaries (i.e., Orange County/Los Angeles County line) (Santa Ana RWQCB 2008).

The Santa Ana RWQCB divides the Santa Ana River Basin into hydrologic units, hydrologic areas, and hydrologic subareas for the purpose of water quality planning. Cypress College is within the southeastern portion of the Los Angeles−San Gabriel River Hydrologic Unit (805.00), and more specifically within the Anaheim Hydrologic Area Split (845.60) and Anaheim

Hydrologic Subarea Split (845.61) (Santa Ana RWQCB 2008). The Los Angeles−San Gabriel River Hydrologic Unit includes only the northern edge of Orange County. The Anaheim Hydrologic Subarea Split watershed is primarily drained by the Carbon Creek flood control channel and Moody Creek flood control channel, both of which connect with Coyote Creek and eventually merge with the San Gabriel River before its outlet into the Pacific Ocean (Figure 4.7-1, Cypress College Hydrological Setting). Both channels are identified as "flowlines" within the U.S. Geological Survey (USGS) National Hydrography Dataset (NHD) and "blue-line" drainages on the USGS 7.5-minute Los Alamitos quadrangle map.

No tributaries to the Carbon Creek flood control channel or Moody Creek flood control channel occur within the boundaries of the campus. Cypress College has a man-made water pond located on the center of the campus.

Watershed Characteristics

The coastal watersheds within Orange County have been extensively altered by urban development, such that surface water drainage has generally been directed to underground stormwater pipelines. These pipelines discharge to concrete, earthen, or otherwise engineered channels for eventual delivery to the Pacific Ocean, or in the case of the project area, to the Pacific Ocean just south of Alamitos Bay. The highly urbanized nature of the watersheds poses several problems from both a hydrologic and water quality standpoint. For example, peak flows within the watershed have faster arrival times and are higher in magnitude than would occur under natural conditions in response to large rain events. The wide coverage of impervious surfaces also reduces the extent to which rainfall infiltrates into the ground and recharges the underlying groundwater aquifer.

The Lower San Gabriel River/Coyote Creek watershed covers an area of 85.49 square miles along the northern edge of Orange County (County of Orange 2011). It includes portions of the Cities of Anaheim, Brea, Buena Park, Cypress, Fullerton, La Habra, La Palma, Los Alamitos, Placentia, and Seal Beach. The primary surface water body within the watershed is Coyote Creek, which flows from Los Angeles County to the San Gabriel River. Carbon Creek flows from the foothills to the San Gabriel River and has six detention basins. Other creeks/channels include Brea Creek, Moody Creek, Fullerton Creek, and Los Alamitos Channel. The watershed is nearly fully built out, with predominantly residential land uses (County of Orange 2011).

On-Site Drainage Patterns

Surface water runoff from the project site consists primarily of surface water runoff generated within the boundaries of Cypress College, with minimal off-site surface flow contribution. The Cypress College campus consists of a combination of pervious and impervious surfaces that influence where and how quickly stormwater collects and drains. Based on vegetation mapping

of the site, the impervious surfaces on site, which consist of structures, paved walkways, and parking lots, make up approximately 63.2% of the surfaces on campus, with the rest consisting of lawns, landscaping, a decorative pond, ruderal vegetation, and athletic fields (see the Biological Constraints Report, Appendix A to Appendix A of the EIR).

Surface water runoff due to storm events flows down roof drains; across pavement; and into curbs, gutters, and inlets into the campus storm drain system. The campus storm drains direct flows collected on campus to two interconnection points with the City of Cypress municipal storm drain system (District 2003). The City's 72-inch underground storm drain line enters the campus from the east (near the intersection of Holder Street and Lakeshore Drive), goes west through the athletic field area, then southwest though parking lots 4 and 5, and exits the campus in a southerly direction (near the intersection of Orange Avenue with the railroad right-of-way) (OCFCD 2012). This storm drain line then conveys flows to the south for discharge into the Carbon Creek Channel, which consists of an earthen (upstream) and concrete (downstream) trapezoidal channel maintained by the Orange County Flood Control District (OCFCD 2012). The Carbon Creek Channel runs in a generally westerly direction until it discharges to Coyote Creek. Coyote Creek and the San Gabriel River are operated and maintained by the Los Angeles County Flood Control District.

As shown in Table 4.7-1, the present or potential beneficial uses designated within the Gabriel River/Coyote Creek watershed by the Santa Ana RWQCB are as follows: water contact recreation; non-contact water recreation; commercial and sport fishing; wildlife habitat; habitat for rare, threatened, or endangered species; spawning, reproduction, and development; marine habitat; and shellfish harvesting. The meaning and purpose of "beneficial uses" are further discussed in Section 4.7.2.

Table 4.7-1
Beneficial Uses of Receiving Water Bodies

Beneficial Use	Tidal Prisms of San Gabriel River – River Mouth to Marina Drive	Coyote Creek	Lower Santa Ana River Basin (Groundwater)
Municipal and domestic supply (MUN)	+	X	X
Agricultural supply (AGR)			X
Industrial (IND)	X		X
Process water supply (PROC)			X
Water contact recreation (REC 1)	X	X	
Non-contact water recreation (REC 2)	X	X	
Commercial and sports fishing (COMM)	X		
Warm freshwater habitat (WARM)		X	
Preservation of biological habitats of special significance (BIOL)			

Table 4.7-1
Beneficial Uses of Receiving Water Bodies

Beneficial Use	Tidal Prisms of San Gabriel River – River Mouth to Marina Drive	Coyote Creek	Lower Santa Ana River Basin (Groundwater)
Wildlife habitat (WILD)	X	X	
Habitat for rare, threatened, or endangered species (RARE)	X		
Spawning, reproduction, and development (SPWN)			
Marine habitat (MAR)	X		
Shellfish harvesting (SHEL)	X		
Estuarine habitat (EST)	X		

Source: Santa Ana RWQCB 2008.
Notes:
X = Present or potential beneficial use
+ = Water body has been excepted specifically from the MUN designation in accordance with the criteria specified in the Sources of Drinking Water Policy.

Surface Water Quality

Several water bodies within the Lower San Gabriel River/Coyote Creek watershed are designated as "water quality-limited" for water quality impairments under the federal Clean Water Act's (CWA's) Section 303(d) (Table 4.7-2). Being "water quality-limited" means that a water body is "not reasonably expected to attain or maintain water quality standards" without additional regulation. The law requires that the U.S. Environmental Protection Agency develop total maximum daily loads (TMDLs) for each impaired water body in the nation. The TMDLs specify the maximum amount of a pollutant a water body can receive and still meet water quality standards. A TMDL may also include a plan for bringing an impaired water body back within standards.

The Santa Ana RWQCB has set water quality objectives for all surface waters in the Santa Ana River Basin for constituents, including ammonia, bacteria, biostimulatory substances, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, salinity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity (Santa Ana RWQCB 2008). In addition, specific objectives for concentrations of chemical constituents are applied to bodies of water based on their designated beneficial uses (Santa Ana RWQCB 2008).

The most recently approved Section 303(d) List of Water Quality Limited Segments, as listed in the 2012 Integrated Report (SWRCB 2016), lists Coyote Creek, Reach 1 of the San Gabriel River, the San Gabriel River Estuary, and the near/offshore zones of San Pedro Bay as impaired water bodies under Section 303(d) of the CWA. Pursuant to listing, the Santa Ana RWQCB will be tasked with developing TMDLs for the listed impairments, such as ammonia, chlordane,

coliform bacteria, polychlorinated biphenyls (PCBs), and DDT. The only TMDLs approved by the U.S. Environmental Protection Agency that apply to the impaired water bodies are related to lead and copper. These impairments are relevant to the proposed project because runoff from the site (along with runoff from the whole watershed) eventually discharges into these waters.

Table 4.7-2
CWA Section 303(d) Impairments

Name	Pollutant/Stressor	Potential Sources	TMDL Status	Year
Coyote Creek	Ammonia	Point Source	Scheduled	2019
	Copper, dissolved	Source unknown	Approved	2007
	Diazinon	Source unknown	Scheduled	2019
	Indicator Bacteria	Source unknown	Scheduled	2009
	Lead	Major municipal point source-wet weather discharge	Approved	2007
	pH	Source unknown	Scheduled	2019
	Toxicity	Source unknown	Scheduled	2008
San Gabriel River Reach 1 (Estuary to Firestone)	Coliform Bacteria	Source unknown	Scheduled	2019
	pH	Source unknown	Scheduled	2009
San Gabriel River Estuary	Copper	Source unknown	Approved	2007
	Dioxin	Source unknown	Scheduled	2021
	Nickel	Source unknown	Scheduled	2021
	Oxygen, dissolved	Source unknown	Scheduled	2021
San Pedro Bay Near/Off-Shore Zones	Chlordane	Source unknown	Scheduled	2019
	DDT (tissues and sediment)	Source unknown	Scheduled	2019
	PCBs	Source unknown	Scheduled	2019
	Sediment Toxicity	Source unknown	Scheduled	2009

Source: SWRCB 2016.
Notes: CWA = Clean Water Act, TMDL = total maximum daily load, DDT = dichlorodiphenyltrichloroethane, PCBs = polychlorinated biphenyls.

Groundwater Hydrology and Quality

The Coastal Plain of the Orange County Groundwater Basin (Orange County Basin) underlies a coastal alluvial plain in the northwestern portion of Orange County. The basin is bounded by consolidated rocks exposed on the north in the Puente and Chino Hills, on the east in the Santa Ana Mountains, and on the south in the San Joaquin Hills. The basin is bounded by the Pacific Ocean on the southwest and by a low topographic divide approximated by the Orange County–Los Angeles County line on the northwest. The basin underlies the lower Santa Ana River and part of the San Gabriel River watershed. The Orange County Basin is dominated by a deep structural depression containing a thick accumulation of freshwater-bearing interbedded marine and continental sand, silt, and clay deposits (DWR 2004).

The Orange County Basin is a three-aquifer system consisting of shallow, principal, and deep aquifers. As of 1998, the total groundwater storage capacity of the Orange County Basin was estimated at 38 million acre-feet (DWR 2004). The upper aquifer system consists of Holocene alluvium, older alluvium, stream terraces, and the upper Pleistocene deposits represented by the La Habra Formation (DWR 2004). The average thickness of the upper aquifer system is 800 feet (DWR 2004). The upper aquifer system contains a lower percentage of water-bearing strata in the northwest and coastal areas since clays and clayey silts dominate.

Based on monitoring wells associated with off-site cleanup sites (e.g., gas stations) adjacent to the campus, the depth to water in the area is relatively shallow, approximately 7–13 feet below ground surface (SWRCB 2016).

Flood Hazards

Flood zones for the 100-year and 500-year floods are mapped in the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps. Storm drainage and flood control for the project site are accommodated by a combination of City and County of Orange (County) facilities. The project site is not within a 100-year flood hazard zone mapped by FEMA; the 100-year flood zone is contained within the banks of Carbon Creek (USGS 2016). However, the site is within a 500-year flood zone (City of Cypress 2001).

According to the City's General Plan Map SAF-2, the project site is partially within the inundation zone of the Carbon Canyon Dam (City of Cypress 2001). Carbon Canyon Dam, located in the City of Brea within the Carbon Creek Watershed, was constructed in 1961 for flood control purposes and is owned by the U.S. Army Corps of Engineers and managed by Orange County (County of Orange 2011).

Localized urban flooding, such as ponding, can also occur in instances where heavy rains clog storm drains with debris or when their capacity is exceeded. However, that type of flooding is temporary, shallow, and not normally a threat to life or safety.

The project is too far inland and sufficiently elevated above mean sea level such that it is not subject to a significant tsunami hazard. The California Geological Survey has mapped tsunami inundation zones using a selected suite of tsunami source events for modeling, representing realistic local and distant earthquakes and hypothetical extreme undersea, near-shore landslides. According to these maps, the project is not within a tsunami inundation zone (CGS 2009)

4.7.2 Relevant Plans, Policies, and Ordinances

Federal and State

The statutes that govern the project activities that may affect water quality are the federal CWA (33 U.S.C. 1251 et seq.) and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act; California Water Code, Section 13000 et seq.). These acts provide the basis for water quality regulation in the project area.

The California Legislature has assigned the primary responsibility to administer and enforce statutes for the protection and enhancement of water quality to the SWRCB and its nine RWQCBs. The SWRCB provides state-level coordination of the water quality control program by establishing statewide policies and plans for the implementation of state and federal regulations. The nine RWQCBs throughout California adopt and implement Basin Plans that recognize the unique characteristics of each region with regard to natural water quality, actual and potential beneficial uses, and water quality problems. Each RWQCB adopts and implements a Basin Plan that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan (California Water Code, Sections 13240–13247). These plans and policies filter down to the local level because the Basin Plans and National Pollutant Discharge Elimination System (NPDES) permits require cities and counties to incorporate water-quality protection measures into their ordinances and permitting processes. The project area is located within the jurisdiction of the Santa Ana RWQCB.

Table 4.7-3 lists the major water quality-related regulations that apply to most projects with land-disturbing activity proposed within the County. These permits are issued statewide by the SWRCB and implemented throughout the state by the RWQCBs; other permits, like dewatering or de minimus permits, are issued and implemented on a region-by-region basis. Additionally, the RWQCBs issue Municipal Separate Storm Sewer System (MS4) permits to the County and cities. These permits include additional requirements for managing construction sites and require integration of drainage designs that match predevelopment runoff volumes.

Table 4.7-3
State and Regional Water Quality-Related Permits and Approvals

Program/Activity	Order Number/ NPDES Number	Permit Name	Affected Area
Construction Stormwater Program	2009-0009-DWQ/ CAS000002	National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit)	Statewide

Table 4.7-3
State and Regional Water Quality-Related Permits and Approvals

Program/Activity	Order Number/ NPDES Number	Permit Name	Affected Area
Municipal Stormwater Program	2013-0001-DWQ/ CAS000004	Waste Discharge Requirements for Small Municipal Separate Storm Sewer Systems (Small MS4 Permit)	Small MS4s
Non-Stormwater Discharge to Land	2003-0003-DWQ	Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality (WDR for Discharge to Land)	Statewide
Non-Stormwater Discharge to Surface Water	R8-2009-0003/ CAG998001	General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimus) Threat to Water Quality (de minimus Waste Discharge Requirement (WDRs) for Santa Ana Region)	Santa Ana Region within Orange County

Beneficial Use and Water Quality Objectives (CWA, Section 303)

The Santa Ana RWQCB is responsible for the protection of the beneficial uses of waters within southwestern San Bernardino County, western Riverside County, and northwestern Orange County. The Santa Ana RWQCB uses its planning, permitting, and enforcement authority to meet this responsibility and has adopted the Basin Plan to implement plans, policies, and provisions for water quality management (Santa Ana RWQCB 2008). The Basin Plan also includes water quality objectives that protect the identified beneficial uses; collectively, the beneficial uses and water quality objectives make up the water quality standards for the region.

The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the nation's waters" (33 U.S.C. 1251(a)). Under Section 303(d) of the CWA, the State of California is required to develop a list of impaired water bodies that do not meet water quality standards and objectives. California is required to establish TMDLs for each pollutant/stressor. A TMDL defines how much of a specific pollutant/stressor a given water body can tolerate and still meet relevant water quality standards.

The existing and potential beneficial uses designated in the Basin Plan, water quality impairments, and relevant TMDLs applicable to the project are described in Section 4.7.1, Existing Conditions, and shown in Tables 4.7-1 and 4.7-2.

Water Quality Certification (CWA, Section 401)

Section 401 of the CWA requires that an applicant for any federal permit (e.g., a U.S. Army Corps of Engineers Section 404 permit) obtain certification from the state that the discharge would comply with other provisions of the CWA and with state water quality standards. For example, an applicant for a permit under Section 404 of the CWA must also obtain water quality

certification per Section 401 of the CWA. Section 404 of the CWA requires a permit from the U.S. Army Corps of Engineers prior to discharging dredged or fill material into waters of the United States, unless such a discharge is exempt from CWA Section 404.[1] For the project area, the Santa Ana RWQCB must provide the water quality certification required under Section 401 of the CWA. Water quality certification under Section 401 of the CWA, and the associated requirements and terms, is required in order to minimize or eliminate the potential water quality impacts associated with the action(s) requiring a federal permit.

According to the Biological Resources Constraints Analysis prepared by Dudek (included in EIR Appendix A as Appendix A), the campus does not support any aquatic resources regulated by the U.S. Army Corps of Engineers, or the California Department of Fish and Wildlife, as jurisdictional wetlands, "waters of the U.S.," or "waters of the State." Therefore, implementation of the proposed project would not result in impacts to state and federal jurisdictional waters (and wetlands) or riparian habitat. Therefore, it is not anticipated that a permit under Section 404 of the CWA or certification per Section 401 will be needed.

NPDES Program (CWA, Section 402)

The CWA was amended in 1972 to provide that the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with an NPDES permit. The 1987 amendments to the CWA added Section 402(p), which establishes a framework for regulating municipal and industrial stormwater discharges under the NPDES program. In November 1990, the U.S. Environmental Protection Agency published final regulations that also establish stormwater permit application requirements for discharges of stormwater to waters of the United States from construction projects that encompass 5 acres or more of soil disturbance. Regulations (Phase II Rule) that became final on December 8, 1999, expanded the existing NPDES program to address stormwater discharges from construction sites that disturb land equal to or greater than 1 acre and less than 5 acres (small construction activity). The regulations also require that stormwater discharges from small MS4s be regulated by an NPDES permit. The primary NPDES permits applicable to similar types of projects in the region are described below.

- **Construction General Permit (SWRCB Order 2009-09-DWQ (as amended)).** For stormwater discharges associated with construction activity in the State of California, the SWRCB has adopted the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (SWRCB Order 2009-0009-DWQ, or Construction General Permit) in order to avoid and minimize water quality impacts attributable to such activities. The Construction General Permit applies to all projects in

[1] The term "waters of the United States," as defined in the Code of Federal Regulations (40 CFR 230.3(s)), includes all navigable waters and their tributaries.

which construction activity disturbs 1 acre or more of soil. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling and excavation. The Construction General Permit requires the development and implementation of a stormwater pollution prevention plan (SWPPP), which would include and specify best management practices (BMPs) designed to prevent pollutants from contacting stormwater and keep all products of erosion from moving off site into receiving waters. Routine inspection of all BMPs is required under the provisions of the Construction General Permit. In addition, the SWPPP must contain a visual monitoring program, a chemical monitoring program for non-visible pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the Section 303(d) list for sediment.

If the land disturbance associated with the proposed project would be more than 1 acre, Cypress College will be subject to the requirements of the Construction General Permit. The SWRCB requires that when determining the ground disturbance of a proposed project, the whole of the action must be included; projects that are phased or involve components that are geographically separated must be considered together when part of the same plan of development (the "common plan of development"). Broad planning documents, such as land use master plans, conceptual master plans, or vision plans, are not considered common plan of development plans due to their conceptual nature. As projects proceed beyond the conceptual stages, however, and demolition plans, grading plans, building plans, and/or contract documents are developed, the boundaries of the common plan of development would be used to determine whether coverage under the Construction General Permit is required.

- **General Permit for the Discharge of Storm Water from Small MS4s (WQ Order No. 2013-0001-DWQ):** On April 30, 2003, as part of Phase II of the MS4 Program, the SWRCB issued a General Permit for the Discharge of Storm Water from Small MS4s (WQ Order No. 2003-0005-DWQ) to provide permit coverage for smaller municipalities (population less than 100,000), including non-traditional Small MS4s, which are facilities such as military bases, public educational campuses, prisons, and hospital complexes. On February 5, 2013, the Phase II Small MS4 General Permit was adopted and became effective on July 1, 2013. The North Orange County Community College District has prepared a Stormwater Management Program to align with WQ Order No. 2013-0001-DWQ (Ninyo & Moore 2015).

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act (codified in the California Water Code, Section 13000 et seq.) is the overarching water quality control law for California. As mentioned previously, it is implemented by the SWRCB and the nine RWQCBs. The SWRCB establishes statewide policy for water

quality control and provides oversight of the RWQCBs operations. In addition to other regulatory responsibilities, the RWQCBs have the authority to conduct, order, and oversee investigation and cleanup where discharges or threatened discharges of waste to waters of the state[2] could cause pollution or nuisance, including impacts to public health and the environment. Evident from the preceding regulatory discussion, the Porter-Cologne Act and the CWA overlap in many respects, as the entities established by the Porter-Cologne Act are in many cases enforcing and implementing federal laws and policies. However, there are some regulatory tools that are unique to the Porter–Cologne Act.

- **Dredge/Fill Activities and Waste Discharge Requirements (WDRs).** Actions that involve, or are expected to involve, discharge of waste are subject to water quality certification under Section 401 of the CWA (e.g., if a federal permit is being sought or granted) and/or WDRs under the Porter-Cologne Act. Chapter 4, Article 4 of the Porter-Cologne Act (California Water Code, Section 13260–13274) states that persons discharging or proposing to discharge waste that could affect the quality of waters of the state (other than into a community sewer system) shall file a Report of Waste Discharge with the applicable RWQCB. For discharges directly to surface water (i.e., waters of the United States), an NPDES permit is required, which is issued under both state and federal law; for other types of discharges, such as waste discharges to land (e.g., spoils disposal and storage), erosion from soil disturbance, or discharges to waters of the state (such as isolated wetlands), WDRs are required and are issued exclusively under state law. WDRs typically require many of the same BMPs and pollution-control technologies as required by NPDES-derived permits. Further, the WDRs application process is generally the same as for CWA Section 401 water quality certification, though in this case, it does not matter whether the particular project is subject to federal regulation.

  The Statewide General Waste Discharge Requirements for Discharge to Land (2003-0003-DWQ), for example, applies to projects that discharge to land where the discharge has a low threat to water quality. These are typically low-volume discharges with minimal pollutant concentrations, such as well water discharges, small temporary dewatering projects, and hydrostatic testing discharges of clear water. The primary difference between this permit and the permits under the NPDES programs described previously is the destination of the water. This permit regulates discharges to land while the previous sections discuss discharges to storm drains or receiving waters. For instance, if a dewatering discharge will be piped to an infiltration basin during construction, this permit should be used.

[2] "Waters of the state" are defined in the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Section 13050(e)).

SBx7-7

SBx7-7, which became effective on February 3, 2010, is the water conservation component to the Delta legislative package. It seeks to implement water use reduction goals established in 2008 to achieve a 20% statewide reduction in urban per capita water use by December 31, 2020. The bill requires each urban retail water supplier to develop urban water use targets to help meet the 20% goal by 2020 and an interim 10% goal by 2015. The bill establishes methods for urban retail water suppliers to determine targets to help achieve water reduction targets. The retail water supplier must select one of the four compliance options. The retail agency may choose to comply with SBx7-7 as an individual or as a region in collaboration with other water suppliers. Under the regional compliance option, the retail water supplier still has to report the water use target for its individual service area. The bill also includes reporting requirements in the 2010, 2015, and 2020 Urban Water Management Plans.

California Sustainable Groundwater Act

The Sustainable Groundwater Management Act (SGMA) is a package of three bills (Assembly Bill 1739, Senate Bill 1168, and Senate Bill 1319) that provides local agencies with a framework for managing groundwater basins in a sustainable manner. The SGMA establishes minimum standards for sustainable groundwater management, roles and responsibilities for local agencies that manage groundwater resources, as well as priorities and timelines to achieve sustainable groundwater management in the next 20 years. Central to the SGMA is the identification of critically over-drafted basins and the prioritization of groundwater basins, the establishment of Groundwater Sustainability Agencies (GSAs), and the preparation and implementation of Groundwater Sustainability Plans (GSPs). GSAs must be formed by June 30, 2017, and GSPs must consider all beneficial uses and users of groundwater in the basin, as well as include measureable objectives and interim milestones that ensure basin sustainability. A basin may be managed by a single GSP or multiple coordinated GSPs.

At the state level, the Department of Water Resources (DWR) has the primary role in the implementation, administration, and oversight of the SGMA, with the SWRCB stepping in should a local agency be found to not be managing groundwater in a sustainable manner. DWR is currently in the process of developing regulations and guidelines for the implementation of the SGMA. The Coastal Plain of Orange County Groundwater Basin is not in critical overdraft and is considered a medium-priority basin, which means one or more GSPs must be accepted as adequate by DWR by January 31, 2022. A GSA for the groundwater basin has not been formally established. However, the Orange County Water District has been managing groundwater resources under an adopted Groundwater Management Plan since 1989, and in the most recent update, ensured the plan was updated to be consistent with the requirements of SGMA (OCWD 2015).

Local

Northern Orange County Integrated Regional Watershed Management Plan

The Northern Orange County Watershed Management Area encompasses 241,000 acres (376 square miles) in Northern Orange County. The Northern Orange County Watershed Management Area is bordered by Los Angeles County to the north and west and by San Bernardino County to the east. The three watersheds in this area are the San Gabriel River/Coyote Creek, Anaheim Bay–Huntington Harbour, and the Santa Ana River. The purpose of the Northern Orange County Integrated Regional Watershed Management Plan is to facilitate effective continued collaboration and create opportunities to leverage agency resources for solution-oriented water resource projects and programs within north Orange County.

The Northern Orange County Integrated Regional Watershed Management Plan supports state priorities that relate to the California Water Plan Update 2009, the CALFED Bay–Delta Program, the DWR Water Recycling Task Force Recommendations, the SWRCB's Recycled Water Policy, Governor Schwarzenegger's 20×2020 Water Conservation Plan of 2010, greenhouse gas emissions reduction goals of Assembly Bill 32, the Water Desalination Task Force Recommendations, the California Ocean Plan, the California Watershed Action Plan, the TMDL list, the comprehensive Orange County DAMP, and the RWQCBs' Watershed Management Initiative Chapters. The Northern Orange County Integrated Regional Watershed Management Plan does this through the integration of projects and programs that incorporate a wide range of water management strategies. Beneficial effects from implementation of proposed projects and programs will contribute to the goals and objectives of the statewide, regional, and local priorities.

City of Cypress General Plan

The City of Cypress General Plan also has relevant hydrological and water quality-focused policies that promote protection from flooding, water conservation efforts, and protection of water quality. Those policies are as follows.

<u>Safety Element</u>

- **SAF-1:** Protect residents, workers, and visitors from flood hazards, including dam inundation.
- **SAF-1.1:** Manage development to ensure that flooding concerns have been considered prior to development.
- **SAF-1.4:** Review on an annual basis the emergency evacuation plan to ensure its continued effectiveness.

Conservation/Open Space/Recreation Element

- **COSR-1.2:** Promote the use of native trees in landscaping to conserve water resources.
- **COSR-1.3:** Protect ground water resources from depletion and sources of pollution.
- **COSR-1.4:** Conserve imported water by utilizing water conservation techniques, water conserving appliances, and drought-resistant landscaping.

4.7.3 Thresholds of Significance

The significance criteria used to evaluate the proposed project's impacts to hydrology and water quality are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to hydrology and water quality would occur if the project would:

1. Violate any water quality standards or waste discharge requirements.
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).
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.
4. Substantially alter the existing drainage patter 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.
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.
6. Otherwise substantially degrade water quality.
7. Place housing within a 100-year flood hazard areas as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
8. Place within a 100-year flood hazard area structures that would impede or redirect flood flows.
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.
10. Result in inundation by seiche, tsunami, or mudflow.

Thresholds of significance 7, 8, 9, and 10 were eliminated from further consideration in the Initial Study. The proposed project is not within a 100-year flood hazard zone. Furthermore, the project is sufficiently elevated relative to the ocean such that exposure to tsunami is unlikely, and is not next to a large body of water capable of producing a seiche. Additionally, the project site is also not located near hillside areas that would be subject to mudslides. Any flooding that does occur would be limited to shallow nuisance flooding resulting from blocked storm drains and would not represent a public safety hazard or substantially expose structures. For these reasons, the impacts of the project with respect to flood-related risks (other than dam failure) were determined to be less than significant.

4.7.4 Impacts Analysis

This section evaluates the potential impacts associated with construction and operation of the proposed project on hydrology and water quality. Each significance criterion in Appendix G of the CEQA Guidelines is listed in this section in bold and italics. Significance criteria that have similar impact mechanisms, and thus, would have similar discussion, analyses, and conclusions are grouped so as to avoid redundant or overlapping analyses.

Would the project violate any water quality standards or waste discharge requirements?

Would the proposed project otherwise substantially degrade water quality?

Impacts to water quality through exceedance of water quality standards, non-conformance with WDRs, or by other means, can potentially result from the short-term effects of construction activity (e.g., erosion and sedimentation due to land disturbances, uncontained material and equipment storage areas, improper handling of hazardous materials) as well as long-term effects of landscaping, circulation improvements, utility infrastructure, and structural designs (e.g., alteration of drainage patterns and/or increases in impervious surfaces). This discussion generally focuses on the short-term effects of construction activities and addresses the different types of water quality impacts in terms of the type of construction-related effects, including stormwater runoff from construction sites, management of demolition activities and debris, and non-stormwater discharges. Long-term effects related to changes in topography and impervious surfaces are addressed under Thresholds 3 and 4 because they address the potential for alteration of drainage patterns to have adverse effects on erosion and/or flooding.

Stormwater Runoff

Grading, excavation, trenching, and other construction activities necessary for new construction, renovation, and demolition activities could result in disturbance of soils at the project site. Construction site runoff can contain soil particles and sediments from these activities. Dust from construction sites can also be transported to other nearby locations where the dust can enter runoff or water bodies. Spills or leaks from heavy equipment and machinery, staging areas, or

building sites can also enter runoff. Typical pollutants could include petroleum products and heavy metals from equipment, and products such as paints, solvents, and cleaning agents, which could contain hazardous constituents. Sediment from erosion of graded or excavated surface materials, leaks or spills from equipment, or inadvertent releases of construction materials could result in water quality degradation if runoff containing the sediment entered receiving waters in sufficient quantities to exceed water quality objectives. Impacts from construction-related activities would generally be short term and of limited duration.

Because implementation of the proposed project would collectively require construction activities resulting in a land disturbance of more than 1 acre, the District would be required to obtain the Construction General Permit, which pertains to pollution from grading and project construction. Compliance with the permit requires the District to file a Notice of Intent with the SWRCB and to prepare a SWPPP prior to construction. The contractor would prepare and implement a site-specific SWPPP in compliance with the District's Storm Water Management Program prepared by Ninyo and Moore (Ninyo & Moore 2015). The SWPPP would incorporate BMPs in order to prevent, or reduce to the greatest feasible extent, adverse impacts to water quality from erosion and sedimentation. A copy of the applicable SWPPP would be kept at the construction site and be available for County/Division of the State Architect (DSA) review on request. The SWPPP would conform to the California Stormwater Quality Association's SWPPP template and shall include appropriate BMPs related to the specific project. The following list includes examples of treatment-control BMPs to employ during construction (these features shall appear as notes on final design plans):

- Silt fences installed along limits of work and/or the project construction site
- Stockpile containment (e.g., visqueen, fiber rolls, gravel bags)
- Hillside stabilization structures (e.g., fiber matrix on slopes and construction access stabilization mechanisms, etc.)
- Street sweeping
- Tire washes for equipment.
- Runoff control devices (e.g., drainage swales, gravel bag barriers/chevrons, velocity check dams) shall be utilized during construction phases conducted during the rainy season.

The standard construction procedures (as shown in Table 3-3 of the Project Description) would prevent construction-related contaminants from reaching impaired surface waters and contributing to urban impacts on water quality in the coastal bays and estuaries into which stormwater discharges.

The District distributes stormwater-specific contract language for all hired construction contractors and maintains strict design standards for new construction and major remodel/additions that requires contractors to subscribe to green buildings and sustainable design standards like those set forth in the LEED certification process (Ninyo & Moore 2015). Contracts will continue to include language regarding waste materials, non-stormwater discharges, illegal dumping, spill containment, erosion and sediment controls, and BMP maintenance. Contract language will also continue to include enforcement actions for occurrences of non-compliance.

Required compliance with the Construction General Permit, including preparation and implementation of a SWPPP, would ensure that water quality impacts resulting from construction-related activities and ground disturbances would be less than significant.

Management of Demolition Activities and Debris

Section 4.6, Hazards and Hazardous Materials, discusses the potential hazardous materials issues related to demolition activities, such as the potential presence of lead-based paint or asbestos. Furthermore, Section 4.6 addresses the possibility of spills, leaks, transport, and/or storage of hazardous materials and includes measures to ensure they are not released to the environment. Implementation of **MM-HAZ-1 through MM-HAZ-5** would ensure that transport, use, and/or storage of hazardous materials would not have adverse effects with regard to water quality.

Non-Stormwater Discharges

Non-stormwater discharges during construction could include construction-related dewatering discharges (to keep excavations free of water) and/or dust control. If non-stormwater discharges enter the stormwater drainage system, they could potentially degrade water quality and/or violate water quality objectives of the Santa Ana RWQCB Basin Plan.

Dewatering

Due to relatively shallow groundwater (estimated to be between 7 and 13 feet below ground surface), construction crews may need to undertake construction-related dewatering discharges. The purpose of construction dewatering is to provide a dry work area if there is seepage of groundwater or if stormwater runoff enters excavations. Dewatering discharges are most likely during rainy periods and for deeper subgrade excavations (such as basement levels, underground parking, and utility vaults) associated with new building construction and renovations.

For activities that involve dewatering, discharge to the land surface would need to comply with the provisions of the SWPPP that will be required to describe and implement procedures for making non-stormwater discharges. Discharges of non-stormwater from a trench or excavation that contain sediment or other pollutants directly to a sanitary sewer, storm drain, creek bed, or other receiving water is prohibited under the terms of the Construction General Permit. The

discharges of wastes are prohibited from causing a violation of any applicable water quality standard for receiving waters adopted by the RWQCB or SWRCB, as required by the CWA. Therefore, the discharges are not permitted to cause any of the following:

- The undesirable discoloration of the receiving waters
- The presence of objectionable odors in the receiving water
- The presence of visible oil, grease, scum, floating, or suspended material or foam in the receiving waters
- The deposition of objectionable deposits along the banks or the bottom of the stream channel
- The depletion of the dissolved oxygen concentration below 5 milligrams per liter in the receiving water; if the ambient dissolved oxygen concentration is less than 5 milligrams per liter, the discharge shall not cause further depression
- An increase in the temperature of the receiving waters above 90°F (32 degrees Celsius (°C)), which normally occurs during the period of June through October, nor above 78°F (26°C) during the rest of the year
- Change the ambient pH levels more than 0.5 pH units
- The concentration of pollutants in the water column, sediments, or biota to adversely affect the beneficial uses of the receiving waters
- The bioaccumulation of chemicals in aquatic resources to levels that are harmful to human health

The preferred method of discharge would be to a landscaped, vegetated, or soil area or into an infiltration basin, so long as the water only contains sediment (no other pollutants) and that all sediment would filter out.

If there is evidence that other pollutants are present in the groundwater, the District would be required to obtain a separate permit from the RWQCB or local jurisdiction. In such cases, the District may be required to use a vacuum truck and haul the water to an authorized discharge location or implement various methods of treatment on site prior to discharging the water. The contractor's implementation of the SWPPP provisions would ensure that non-stormwater discharges from construction site dewatering would not violate Basin Plan objectives or substantially degrade water quality. Implementation of **MM-HAZ-1 through MM-HAZ-5** would further ensure that potential contaminants are identified and handled properly (i.e., treated on site or collected and disposed of at an authorized facility). Therefore, impacts to water quality during construction due to dewatering would be less than significant.

Dust Control

Non-stormwater discharges during construction would also include periodic application of water for dust control purposes. Since the practice of dust control is necessary during windy and dry periods to prevent wind erosion and dust plumes, water would be applied in sufficient quantities to wet the soil but not so excessively as to produce runoff from the construction site. Water applied for dust control would either quickly evaporate or locally infiltrate into shallow surface soils. These stipulations are routine in SWPPPs and other construction contract documents; stating that water would only be applied in a manner that does not generate runoff. Therefore, water applied for dust control would not result in appreciable effects on groundwater or surface water features, and thus, has little to no potential to cause or contribute to exceedances of water quality objectives contained in the relevant Basin Plan—a less-than-significant impact.

Summary

The standard construction procedures (as shown in Table 3-3 of Chapter 3, Project Description) and compliance with the Construction General Permit and other WDRs, as applicable, would adequately protect the quality of receiving waters and would not violate Basin Plan objectives. For these reasons, the impact of the project during construction of proposed improvements would be less than significant.

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?

Water service for the proposed project is and will continue to be through purchase of municipal water from Golden State Water Company (GSWC). GSWC's West Orange System uses about 15 groundwater wells whose production varies from year to year, but are expected to produce in the range of 10,000 to 12,000 acre-feet per year (afy; GSWC 2011). No on-site groundwater wells are proposed and therefore impacts to groundwater supplies, aquifer volume, or lowering of the local groundwater table level would be limited to the well field from which the City derives its supplies (i.e., indirect effects).

GSWC is an investor-owned public utility company that owns 38 water systems throughout California and is regulated by the California Public Utilities Commission (CPUC). GSWC obtains its water supply for the West Orange System from two primary sources: imported water and GSWC-operated groundwater wells. Imported water is purchased from the Municipal Water District of Orange County (MWDOC) and the Metropolitan Water District of Southern California (MWD) (GSWC 2011). In the 2010 water year, GSWC pumped approximately 67% (10,260 acre-feet) of its

water supply from groundwater wells accessing the Orange County Groundwater Basin, and purchased the remainder from the MWDOC (GSWC 2011). The percent of demand served from groundwater extractions is established by the allowable "basin pumping percentage,"[3] which is set by the Orange County Water District (OCWD) on an annual basis. MWDOC is projecting that planned and future water supply projects in the basin will allow pumpers to operate reliably with a basin pumping percentage of approximately 62% from 2010 through 2035 (GSWC 2011). Therefore, it is expected that approximately 62% of any increase in water demand associated with the proposed project would be served from groundwater wells operated by GSWC.

It is estimated that the project would increase groundwater extraction from GSWC-operated groundwater wells by nearly 6 afy at full build-out. Based on metered water use for the Cypress College Campus between November 2014 and October 2015, the total existing water use is approximately 185 afy. Approximately 70% (130 afy) of this water consumption is for the purpose of landscape watering and athletic field irrigation. Therefore, the existing sanitary/domestic uses of water on the campus is estimated to be 55 afy. Because the proposed project does not involve appreciable changes to landscaping or athletic fields, project-related increases in demand would be limited to domestic/sanitary needs of proposed buildings (e.g., restrooms, showers, laboratory facilities, etc.). The proposed project would involve a net increase of 81,000 assignable square feet (ASF), or a 16% increase from the existing 500,845 ASF, as shown in Table 3-1, Buildings and Facilities – Plan-to-Ground Comparison, in Chapter 3, Project Description, of this Program EIR. Thus, domestic/sanitary water demands at full build-out could increase by as much as 9 afy to a total of 64 afy.[4] Given that approximately 62% of this increase would likely come from groundwater, it is estimated that the project would increase groundwater extraction from GSWC-operated groundwater wells by nearly 6 afy.

It should be noted that these estimates are reasonable but highly speculative and conservative for several reasons. The increase in domestic/sanitary water demands is based solely on the increase in ASF and does not consider the implementation of water-efficient plumbing codes or other water-saving measures. Renovations of buildings are likely to achieve significant water savings on a per-capita basis because modern plumbing codes require the use of low-flow fixtures. Where landscaping around building perimeters is reconstructed, it would be done with xeriscape, or drought-tolerant native species. The exact amount of water that would be required for each individual phase of the master plan, or at full build-out of the campus, cannot be estimated precisely until building plans are developed and finalized. However, for the purposes of CEQA, these approximations are sufficient to quantify the potential project-related increase in water demand on campus.

[3] The basin pumping percentage is the ratio of groundwater production to total water demand, expressed as a percentage.

[4] Because the proposed project would require an amount of water far less than that required by a 500-dwelling unit project, it does not qualify as a "project" under Water Code Section 10910 et seq. and Senate Bill 610, and therefore, a water supply assessment is not required.

An increase in groundwater use of 6 afy over the next decade or so is not sufficient to significantly deplete groundwater supplies or locally lower the groundwater table. It represents only 0.06% of the amount of groundwater extracted by GSWC's West Orange System in 2010 (i.e., about 10,260 acre-feet). Compared to the annual groundwater production within the Orange County Basin as a whole (i.e., roughly 330,000 afy), the increase in demand as a result of the proposed project would be negligible and would be far less than the variation in demand due to climatic conditions, and well within the margin of error for such estimates (OCWD 2015). As a point of comparison, the volume of storage of freshwater within the basin amounted to 37,700,000 acre-feet in 1988 (DWR 2004). A water service agreement, and, if required, payment of impact fees to the water district, would be required prior to initiating new water service connections.

The OCWD has been the primary agency managing the groundwater basin since 1933. The OCWD works collaboratively with the MWD and other local water districts such as GSWC to implement a comprehensive program to manage the groundwater basin to assure a safe and sustainable supply. The Groundwater Management Plan 2015 Update documents the objectives, operations, and programs aimed at accomplishing the District's mission (OCWD 2015). It is expected that this plan will be compliant with the recently enacted Sustainable Groundwater Management Act. GSWC already serves a population of 111,418 and has over 35,600 service connections, with both numbers growing only slowly since the service area is already over 90% built-out.

In this context, the estimated project-related increase in groundwater demand of 6 afy—when taken in the context of total water deliveries by GSWC and the active management of the basin by OCWD—would be minor. For these reasons, the project's incremental effect on groundwater resources would be less than significant. No mitigation measures are required.

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 that would result in substantial erosion or siltation on or off site?

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 that would result in flooding on or off site?

Increases in impervious areas associated with the project could alter the types and levels of pollutants that could be present in project site runoff. Runoff from streets, driveways, parking lots, and landscaped areas can contain nonpoint source pollutants such as oil, grease, heavy metals, pesticides, herbicides, fertilizers, and sediment. Concentrations of pollutants carried in urban runoff are extremely variable, depending on factors such as the following:

- Volume of runoff reaching the storm drains
- Time since the last rainfall

- Relative mix of land uses and densities
- Degree to which street cleaning occurs

Under existing conditions, stormwater that is not infiltrated through landscaped areas moves as sheet flow towards street gutters, swales, and the inlets of underground storm drains. The storm drains direct runoff to the City storm drain system and the Carbon Creek Channel, and eventually into the Pacific Ocean through Coyote Creek/Lower San Gabriel River. If rainfall is sufficiently intense and/or long lasting, and particularly if storm drain inlets have not been cleared of leaves and/or other debris, water may temporarily pond in low-lying areas. Under proposed conditions, stormwater runoff would generally behave in the same manner, and drainage plans would ensure hydrologic and water quality standards are met. The campus would continue to direct stormwater runoff to the City's storm drain system.

As discussed in the setting, impervious surfaces currently make up approximately 63.2% of the campus area, with the rest consisting of lawns, landscaping, a decorative pond, ruderal vegetation, and athletic fields. Much of the new construction and land uses proposed would occur on previously paved surfaces such as parking lots and walkways and within the footprint of demolished facilities. Proposed renovations would not substantially change the amount or distribution of impervious surfaces on campus. Certain proposed facilities could increase the amount of impervious surfaces relative to existing conditions because their proposed footprints include areas that are currently pervious (i.e., undeveloped/bare ground).

Because the master plan facilities are in the initial planning stages (i.e., no detailed layout or designs are available), the increase or decrease in impervious surfaces that would occur campus-wide as a result cannot be quantified at this time. However, because the campus is already largely built-out, is located on level topography, and is surrounded by urban land uses, the Facilities Master Plan components are not anticipated to substantially modify existing topography, drainage-shed boundaries, or runoff rates/patterns. Furthermore, new facilities proposed under the Facilities Master Plan would be subject to the most current standards for drainage design and the Small Phase II MS4 permit (described in Section 4.7.2), which generally requires developers to mimic pre-construction drainage patterns when designing the drainage plan for a site.

The District distributes stormwater-specific contract language and maintains strict design standards for new construction and major remodel/additions that require contractors to subscribe to green buildings and sustainable design standards like those set forth in the LEED certification process (Ninyo & Moore 2015). All new development projects would comply with the District's Storm Water Management Plan, which requires that new development and redevelopment project comply with the standards contained in the Phase II Small MS4 Permit (Section E.12). To ensure that future development and renovation activities are

designed so as to reduce the volume and pollutant load of stormwater runoff from each site, **MM-HYD-1** shall be implemented.

With implementation of **MM-HYD-1**, the impacts of the project on drainage patterns and long-term effects on water quality would be less than significant.

Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

The potential for the project to alter drainage patterns is addressed previously under Thresholds 1, 3, and 4. Because the drainage sheds would maintain the same boundaries, and because changes in impervious surfaces would be relatively minor, the proposed project is not anticipated to exceed the capacity of existing off-site stormwater drainage system. Some on-site modifications to the drainage system may be undertaken, if required, as part of new construction and renovation activities. Implementation of **MM-HYD-**1 would ensure that proposed projects include design features that slow and retain stormwater runoff. For these reasons, the impact of the project on the capacity of stormwater drainage systems would be less than significant.

4.7.5 Mitigation Measures

MM-HYD-1 **Project-Specific Water Quality Management Plan.** Prior to implementing a project that creates and/or replaces (including projects with no net increase in impervious footprint) more than 5,000 square feet of impervious surface, the District shall ensure such development is compliant with the standards contained in Section E.12 of the Phase II Small MS4 Permit (SWRCB Order No. 2013-0001-DWQ, as amended). The construction project shall integrate source control BMPs and low impact development (LID) designs into the project to the maximum extent feasible to reduce the potential for pollutants to enter stormwater runoff. This includes site design best management practices (as applicable), such as minimizing impervious areas, maximizing permeability, minimizing directly connected impervious areas, creating reduced or "zero discharge" areas, incorporating trees and landscaping, and conserving natural areas.

At a minimum, the district shall require facilities to be designed to evapotranspire, infiltrate, harvest/use, and/or biotreat storm water to meet at least one of the hydraulic sizing design criteria contained in the Phase II Small MS4 Permit. This means ensuring source reduction or retention/treatment of either the 85th percentile 24-hour storm runoff event, or the flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity.

Long-term operation and maintenance of LID designs and structure BMPs (e.g., infiltration basin, bioswales, buffer strips, etc.) shall be conducted in accordance with the District's WQMP. In addition, the District shall comply with the landscape design and maintenance program contained in the Phase II Small MS4 Permit, which is intended to reduce the amount of water, pesticides, herbicides and fertilizers used.

4.7.6 Level of Significance After Mitigation

Implementation of **MM-HYD-1** (Water Quality Management Plans) and **MM-HAZ-1 through MM-HAZ-5** would ensure that all impacts identified would be reduced to a less-than-significant level.

4.7.7 Cumulative Impacts

The primary pollutants of concern on a college campus are associated with private vehicle use (e.g., any leakage of grease/oils), landscaping/grounds work (e.g., improper/excessive use of pesticides, herbicides, and/or fertilizers), and/or trash (e.g., due to improper waste disposal). The release of such pollutants would be localized and periodic in nature, minor in magnitude (especially in comparison to the total volume of stormwater discharges entering Carbon Creek Channel from the entire urban watershed), and would not contribute to the existing impairments under Section 303(d) of the CWA. Nevertheless, because the cumulative effects of past projects have resulted in substantial water quality problems in the region's major waterways, and because water quality problems are generally cumulative in nature, all efforts must be made to reduce pollutant concentrations within stormwater discharges to the maximum extent practicable, even if the impact of an individual project appears inconsequential. **MM-HYD-1** is designed to address this issue by reducing to the maximum extent practicable the levels of pollutants entering the storm drain system. The mitigation measure likewise ensures that the contribution of the proposed project to cumulative impacts on water quality is less than significant with mitigation.

In addition, because of the cumulative nature of groundwater impacts—meaning that all urban growth and development relying on the Orange County Basin would demand water—the project's increase in demand on groundwater, even if individually minor could be cumulatively considerable, particularly in the context of climate change and the trend toward increased reliance on local supplies. However, the OCWD works collaboratively with the MWD and other local water districts such as GSWC to implement a comprehensive program to manage the groundwater basin to assure a safe and sustainable supply. The Groundwater Management Plan 2015 Update documents the objectives, operations, and programs aimed at accomplishing the District's mission (OCWD 2015). Given OCWD's active management of the groundwater basin, the lack of critical overdraft conditions in the basin, and active participation by all water suppliers, the cumulative conditions in the basin are not significant.

4.7.8 References

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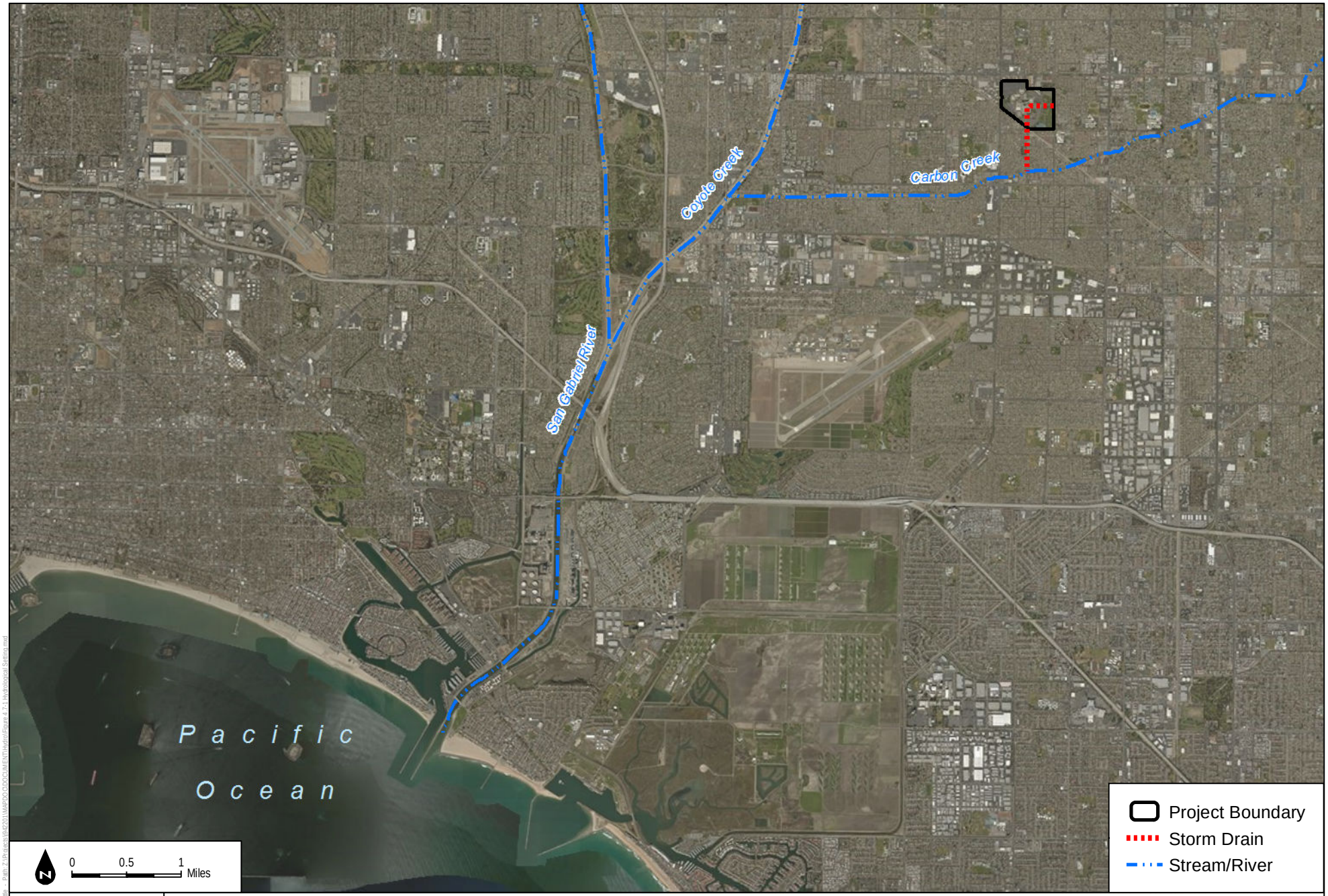

SOURCE: Bing Maps, 2015; USGS, 2016

FIGURE 4.7-1

Hydrological Setting

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Cypress College Facilities Master Plan Program Environmental Impact Report

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