4.9 Hydrology and Water Quality

This section addresses potential hydrology and water quality impacts that may result from construction and operation of the Fanita Ranch Project (proposed project). The following discussion addresses the existing hydrology and water quality conditions of the affected environment, evaluates the proposed project's consistency with applicable goals and policies, identifies and analyzes environmental impacts, and recommends measures to reduce or avoid adverse impacts anticipated from the implementation of the proposed project, as applicable. The analysis in this section is based on the following technical reports, which are included as appendices to this EIR:

- Master Drainage Study for Fanita Ranch Vesting Tentative Map, prepared by Hunsaker & Associates (2020) (Appendix J1)
- Priority Development Project Stormwater Quality Management Plan for Vesting Tentative Map for Fanita Ranch (Fanita Commons, Orchard Village, and Vineyard Village, prepared by Hunsaker & Associates (2020) (Appendix J2)
- Priority Development Project Stormwater Quality Management Plan for Vesting Tentative Map for Fanita Ranch (Fanita Parkway from Ganley Road to Orchard Village, Cuyamaca Street South of Orchard Village and Magnolia Avenue), prepared by Hunsaker & Associates (2020) (Appendix J3)
- Green Streets Priority Development Project Exempt Stormwater Quality Management Plan for Vesting Tentative Map for Fanita Ranch (Fanita Parkway from Mast Boulevard to Ganley Road, Cuyamaca Street South of Orchard Village, Magnolia Avenue and Summit Avenue), prepared by Hunsaker & Associates (2020) (Appendix J4)
- Stormwater Infiltration Feasibility Study, prepared by Geocon Incorporated (2020) (Appendix J5)
- Potential Critical Course Sediment Yield Area Analysis for Fanita Ranch (On-Site), prepared by REC Consultants (2019) (Appendix J6)
- Potential Critical Course Sediment Yield Area Analysis for Fanita Ranch (Off-Site), prepared by REC Consultants (2019) (Appendix J7)

4.9.1 Environmental Setting

4.9.1.1 Hydrology

The approximately 2,638-acre project site is located within the San Diego Hydrologic Unit (907), in the lower San Diego Hydrologic Area (907.10), and in the Santee Hydrologic Subarea (907.12) of the San Diego Basin Plan (Basin Plan) (see Section 4.9.2.2). The San Diego Hydrologic Unit is a long, triangular-shaped area of about 440 square miles extending from the Laguna Mountains on the east to Pacific Ocean on the west and from the Santa Ysabel Indian Reservation on the north to the Interstate 8 on the south. This watershed includes the Cleveland National Forest and Mission

Trails Regional Park. It has the highest population of the County of San Diego's (County's) watersheds and includes portions of the Cities of San Diego, El Cajon, La Mesa, Poway, Santee, and several unincorporated jurisdictions. The watershed is drained by the San Diego River and contains five water storage reservoirs: El Capitan, San Vicente, Cuyamaca, Jennings, and Murray. The lower San Diego Hydrologic Area occurs downstream of the El Capitan, San Vicente, and Cuyamaca Reservoirs and extends from the El Monte Valley through the City of Santee (City) and into Mission Trails Regional Park and the City of San Diego. Sycamore Canyon Creek flows from north to south along the western side of Santee Lakes Recreation Preserve, and most of the surrounding area drains toward it. Sycamore Canyon Creek continues to flow south under bridges at Mast Boulevard and Carlton Oaks Drive and then discharges to the San Diego River. Along the eastern side of Santee Lakes Recreation Preserve, directly west of Fanita Parkway, a constructed open conveyance channel drains portions of Fanita Parkway and the adjacent existing development to the east in a southerly direction until it enters a storm drain at Mast Boulevard. The storm drain flows south and then west to discharge to Sycamore Canyon Creek.

The Master Drainage Study (Appendix J1) prepared for the proposed project by Hunsaker & Associates defines the current drainage conditions by a ridge within the eastern portion of the site. This ridge defines the areas draining west toward Sycamore Canyon Creek and east to unnamed tributaries and storm drain conveyance systems that then drain south.

The northern portion of the site where the proposed development would occur currently consists of undeveloped, natural land. The proposed street extension of Fanita Parkway would be in areas previously graded and partially developed to provide access to/from Sycamore Canyon. The proposed village development area, which would be located at the upper reaches of the watershed, does not currently receive flows from off site (run-on). However, areas within the lower portions of the project site relative to Fanita Parkway and Sycamore Canyon Road receive run-on from both developed and undeveloped areas along the northern and eastern project boundary. Storm drain facilities currently collect and convey runoff from east of Fanita Parkway and Sycamore Canyon Road and flow west at various intervals along their length. This runoff is mostly from developed areas and is discharged into Sycamore Canyon Creek parallel to the Santee Lakes Recreation Preserve and Fanita Parkway. The majority of project runoff from the proposed village development area of Fanita Ranch currently drains into Sycamore Canyon, which transitions into Sycamore Canyon Creek at various reaches and then flows to the San Diego River. The eastern portion of the site drains south and east.

Runoff relative to the southeastern portion of the project site north of the current terminus of Cuyamaca Street and Magnolia Avenue consists almost entirely of undeveloped land with sparse areas of residential housing. This area drains toward existing developed residential communities. Numerous runoff collection points are along the northern and western edges of existing development. This storm drain system is routed south and empties into the San Diego River located

approximately 3 miles south of the project site. The San Diego River flows west to its Pacific Ocean discharge point approximately 18 miles downstream at Ocean Beach.

4.9.1.2 Surface Water Quality

This section discusses the existing water quality of the runoff from the project site. Runoff is a term used to describe any water that runs off of a defined area. Runoff can be the result of rain, in which case it is also sometimes referred to as stormwater. Runoff can also result from various other activities such as irrigation, washing, leaks in pipes, air conditioner condensation, and numerous other activities. When runoff is not the result of rain, it is sometimes referred to as non-stormwater. This section describes the existing water quality of the existing runoff that is discharged from the project site as stormwater and non-stormwater; however, non-stormwater discharges from the project site are minimal.

Receiving Waters

Receiving waters is a general term typically used to describe any water body, such as a creek, river, lake, bay, or ocean, which receives runoff. In the context of the proposed project, it refers to those water bodies that would receive runoff from the project site. As discussed previously, the project site is within the Santee Hydrologic Subarea of the San Diego Hydrologic Unit. Under existing conditions, runoff from the project site enters Sycamore Canyon Creek, which drains to the San Diego River and ultimately the Pacific Ocean. Therefore, the receiving waters for the project site include Sycamore Canyon Creek, the San Diego River, and the Pacific Ocean.

Sycamore Canyon Creek[1]

Sycamore Canyon Creek is located along the western boundary of the project site, which is located centrally in the Santee Hydrologic Subarea (907.12). Sycamore Canyon Creek is identified as an inland surface water in the Water Quality Control Plan for the Basin Plan (RWQCB 2016).

Beneficial uses of the creek include: agricultural supply (AGR), industrial services supply (IND), contact water recreation (REC1), non-contact water recreation (REC2), warm freshwater habitat (WARM), and wildlife habitat (WILD), and rare, threatened, or endangered species (RARE). Of the beneficial use designations listed in Table 4.9-1, only the seven identified previously are applicable to Sycamore Canyon Creek. In addition, the Regional Water Quality Control Board (RWQCB) lists the Sycamore Canyon Creek as a Clean Water Act (CWA), Section 303(d), impaired water body for dissolved oxygen.

[1] The Stormwater Quality Management Plan refers to the upper canyon reaches as “Sycamore Canyon” and the lower (downstream), more defined/improved drainage channel as “Sycamore Creek.” The Basin Plan refers to this water body as “Sycamore Canyon.” For consistency, this EIR refers to this water body as “Sycamore Canyon Creek,” which includes both the upper reach (Sycamore Canyon) and the lower reach (Sycamore Creek).

Table 4.9-1. Beneficial Use Designations

Designation	Abbreviation	Definition
Municipal and Domestic Supply	MUN	Includes uses of water for community, military, or individual water supply systems including but not limited to drinking water supply.
Agricultural Supply	AGR	Includes uses of water for farming, horticulture, or ranching including but not limited to irrigation, stock watering, or support of vegetation for range grazing.
Aquaculture	AQUA	Includes the uses of water for aquaculture or mariculture operations including but not limited to propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.
Industrial Service Supply	IND	Includes uses of water for industrial activities that do not depend primarily on water quality including but not limited to mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization.
Navigation	NAV	Includes uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.
Contact Water Recreation	REC-1	Includes uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include but are not limited to swimming, wading, water-skiing, skin and SCUBA diving, surfing, white water activities, fishing, or use of natural hot springs.
Non-contact Water Recreation	REC-2	Includes the uses of water for recreational activities involving proximity to water but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include but are not limited to picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
Commercial and Sport Fishing	COMM	Includes the uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.
Warm Freshwater Habitat	WARM	Includes uses of water that supports warm water ecosystems including but not limited to preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
Marine Habitat	MAR	Includes uses of water that support marine ecosystems including but not limited to preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).
Wildlife Habitat	WILD	Includes uses of water that support terrestrial ecosystems including but not limited to preservation and enhancement of terrestrial habitats, vegetation, wildlife, or wildlife water and food sources.
Preservation of Biological Habitats of Special Significance	BIOL	Includes uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves, or areas of special biological significance, where the preservation or enhancement of natural resources requires special protection.
Rare, Threatened, or Endangered Species	RARE	Includes uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or wildlife species established under state or federal law as rare, threatened, or endangered.
Migration of Aquatic Organisms	MIGR	Includes uses of water that support habitats necessary for migration, acclimatization between fresh and salt water, or other temporary activities by aquatic organisms, such as anadromous fish.

Table 4.9-1. Beneficial Use Designations

Designation	Abbreviation	Definition
Spawning, Reproduction, and/or Early Development	SPWN	Includes uses of water that support high-quality habitats suitable for reproduction, early development, and sustenance of marine fish or cold freshwater fish.
Shellfish Harvesting	SHELL	Includes uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sport purposes.

Source: RWQCB 2016.

San Diego River

The project site is located approximately 3 miles north of the San Diego River. The San Diego River's headwaters are in the Cuyamaca Mountains. The 52-mile river parallels I-8 as the river flows through Mission Valley to the Pacific Ocean at Ocean Beach. The upper reaches of the river flow through undeveloped areas, while the land surrounding the lower reaches is highly urbanized. The San Diego River is identified as an inland surface water in the Basin Plan.

Beneficial uses of the San Diego River include agricultural supply (AGR), industrial services supply (IND), contact water recreation (REC1), non-contact water recreation (REC2), preservation of biological habitats of special significance (BIOL), warm freshwater habitat (WARM), wildlife habitat (WILD), and rare, threatened, or endangered species (RARE). Table 4.9-1 identifies the beneficial uses for the San Diego River. In addition, the RWQCB lists the lower 16 miles of the San Diego River as a CWA Section 303(d) impaired water body for benthic community effects, cadmium, indicator bacteria, nitrogen, dissolved oxygen, phosphorus, total dissolved solids, and toxicity (Appendix J2).

Pacific Ocean

The San Diego region has 13 principal stream systems, including the San Diego River, originating in the western highlands ultimately flowing to the Pacific Ocean, which is the western boundary of the San Diego Basin. Beneficial uses of the Pacific Ocean include industrial supply (IND); navigation (NAV); contact water recreation (REC1); non-contact water recreation (REC2); commercial and sport fishing (COMM); preservation of biological habitats of special significance (BIOL), wildlife habitat (WILD); rare, threatened, or endangered species (RARE); marine habitat (MAR); aquaculture (AQUA), migration of aquatic organisms (MIGR); spawning, reproduction, and/or early development (SPWN); and shellfish harvesting (SHELL) (Table 4.9-1). In addition, the RWQCB lists the Pacific Ocean as a 303(d) impaired water body for Enterococcus and Total Coliform.

4.9.1.3 Groundwater Quality

The San Diego River Valley Groundwater Basin (Basin No. 9-15) covers approximately 9,890 acres (15.4 square miles). The San Diego River Valley Groundwater Basin consists of alluvium deposited by San Diego River and its tributaries. The groundwater basin is surrounded by contacts

with semi-permeable rocks of the Eocene Poway Group, impermeable Cretaceous crystalline rock, and impermeable Jurassic to Cretaceous Santiago Peak volcanic rocks. Average annual precipitation ranges from 11 to 15 inches. Water in the alluvial aquifer varies in character. The eastern portion of the basin contains water of a bicarbonate character, while the western portion contains water of a chloride character. Total dissolved solids content ranges from 260 to 2,870 mg/L, with higher values to the west and lower values to the east (DWR 2004).

4.9.2 Regulatory Framework

Applicable federal, state, and local regulations pertaining to hydrology and water quality are discussed below.

4.9.2.1 Federal

Clean Water Act

The CWA is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The key sections pertaining to water quality regulation are Sections 303, 401, 402, and 404. Under the CWA, Congress recognized the primary responsibility and rights of states to prevent, reduce, and eliminate pollution to plan the development and use (including restoration, preservation, and enhancement) of land and water resources. The U.S. Environmental Protection Agency (USEPA) has initial authority to administer a permitting program in a state but must suspend the federal program when a state presents "the program it proposes to establish and administer under state law" and demonstrates that "the laws of such State . . . provide adequate authority to carry out the described program." (33 USC 1342[b], [c][1]; 40 CFR 123.1[d][1]). The State Water Resources Control Board (SWRCB) and its RWQCBs have been authorized to implement a permitting program consistent with CWA Sections 303, 401, and 402 at the state level.

Section 303(d)

Under Section 303(d), states are required to identify "impaired water bodies" (those not meeting established water quality standards), identify the pollutants causing the impairment, establish priority rankings for waters on the list, and develop a schedule for development of control plans to improve water quality. The USEPA then approves the state's recommended list of impaired waters, or adds to or removes water bodies from the list. Each RWQCB must update the CWA Section 303(d) list every 2 years, with the most recent update in 2016. The CWA Section 303(d) list identifies priorities for development of pollution control plans for each listed water body and pollutant. The pollution control plans triggered by the CWA Section 303(d) list are called total maximum daily loads (TMDLs). The TMDL is a "pollution budget" designed to restore the health of a polluted body of water and ensure the protection of beneficial uses. The TMDL also contains the target reductions

needed to meet water quality standards and allocates those reductions among the pollutant sources in the watershed (point sources, nonpoint sources, and natural sources) (40 CFR 130.2).

Section 401

Section 401 of the CWA allows for evaluation of water quality when a proposed activity requiring a federal license or permit could result in a discharge to waters of the United States. In California, the SWRCB and its nine RWQCBs issue water quality certifications. Each RWQCB is responsible for implementing Section 401 in compliance with the CWA and its water quality control plan (also known as a basin plan). Applicants for a federal license or that wish to conduct activities that may result in the discharge to waters of the United States (including wetlands) must also obtain a Section 401 water quality certification to ensure that any such discharge will comply with the applicable provisions of the CWA. Compliance with Section 401 is required for all projects that have a federal component and may affect state water quality.

Section 402

Section 402 of the CWA regulates point-source discharges to surface waters (other than dredge or fill material) through the National Pollutant Discharge Elimination System (NPDES) program, administered by the USEPA or by an authorized state. The NPDES program provides general permits (those that cover a number of similar or related activities) and individual permits for discharges to waters of the United States. California is an authorized state and issues NPDES permits as described further below.

Section 404

Section 404 of the CWA regulates the discharge of dredged and fill materials into waters of the United States, which include all navigable waters, their tributaries, and some isolated waters, as well as some wetlands adjacent to the aforementioned waters (33 CFR Part 328.3). Areas typically not considered jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial water bodies such as swimming pools, and water-filled depressions (33 CFR Part 328). Areas meeting the regulatory definition of waters of the United States are subject to the jurisdiction of the U.S. Army Corps of Engineers under provisions of the Section 404. Construction activities involving placement of fill into jurisdictional waters of the United States are regulated by the U.S. Army Corps of Engineers through permit requirements. No U.S. Army Corps of Engineers permit is effective in the absence of the state water quality certification pursuant to Section 401.

4.9.2.2 State

State-Issued Stormwater Permits

National Pollutant Discharge Elimination System Permit Program – Phase I

In November 1990, under Phase I of the urban runoff management strategy, the USEPA published NPDES permit application requirements for municipal, industrial, and construction stormwater discharges. The application requirements were directed at municipalities that own and operate separate storm drain systems serving populations of 100,000 or more, or that contribute significant pollutants to waters of the United States, and required such agencies to obtain coverage under municipal stormwater NPDES permits.

Municipalities are required to develop and implement a jurisdictional runoff management program (JRMP) to address activities to reduce pollutants in urban runoff and stormwater discharges that were contributing a substantial pollutant load to their systems. Rather than establishing numeric effluent or discharge limits, the USEPA established narrative effluent limits for urban runoff, including the requirement to implement appropriate best management practices (BMPs).

The Phase I regulations were also directed at certain facilities that discharged stormwater associated with industrial activity and construction activities that disturb 1 or more acres. The industrial and construction activity components of the Phase I program, as well as the municipal regulations, are applicable to the proposed project.

General Construction Stormwater Permit

Stormwater runoff from construction activity that results in soil disturbances of at least 1 acre of total land area (and projects that meet other specific criteria) is governed by the SWRCB under Water Quality Order 2009-0009-DWQ (as amended by 2010-0014-DWQ and 2012-0006-DWQ), NPDES Permit No. CAS000002. These regulations prohibit discharges of polluted stormwater from construction projects unless the discharge is in compliance with the general NPDES permit requirements. The nine individual RWQCBs enforce the General Construction Stormwater Permit for projects within their region.

It is the responsibility of the construction site owner or landowner to obtain coverage under this General Permit prior to commencement of construction activities. To obtain coverage, the operator or owner must file a Notice of Intent with a vicinity map and the appropriate fee with the SWRCB. The General Permit outlines the requirements for preparation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP is a temporary document that is created to define and control the handling of stormwater runoff from a construction site. The SWPPP identifies construction BMPs, which are implemented during the construction phase of development. Because the area that would be disturbed by development of the proposed project would exceed 1 acre, the proposed project would be required to comply with the General Construction Stormwater Permit.

Municipal Separate Storm Sewer System Permits

The San Diego RWQCB regulates discharges from Phase I municipal separate storm sewer systems (MS4s) in the San Diego region under the Regional MS4 Permit. The Regional MS4 Permit covers 39 municipal, county government, and special district entities (referred to jointly as "copermittees") in the County of San Diego, southern County of Orange, and southwestern County of Riverside who own and operate large MS4s that discharge stormwater (wet weather) runoff and non-stormwater (dry weather) runoff to surface waters throughout the San Diego region. The Regional MS4 Permit, Order No. R9-2013-0001, was adopted on May 8, 2013, and initially covered the County of San Diego copermittees. Order No. R9-2015-0001 was adopted on February 11, 2015, amending the Regional MS4 Permit to extend coverage to the County of Orange copermittees. Finally, Order No. R9-2015-0100 was adopted on November 18, 2015, amending the Regional MS4 Permit to extend coverage to the County of Riverside copermittees. The City is 1 of 18 municipalities in the County of San Diego that is a copermittee.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act), codified in Division 7 of the California Water Code, is California's primary statutory authority for the protection of water quality. Under the Porter-Cologne Act, the state must adopt water quality policies, plans, and objectives that protect the state's waters beneficial uses. State law defines beneficial uses as "domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (California Water Code, Section 13050[f]). The Porter-Cologne Act sets forth the obligations of the SWRCB and RWQCBs pertaining to the adoption of water quality control plans and establishment of water quality objectives. Unlike the federal CWA, which regulates only surface water, the Porter-Cologne Act regulates both surface water and groundwater. The SWRCB and RWQCBs establish water quality objectives for surface waters and groundwater, and have permitting and enforcement authority to prevent and control waste discharges that could affect waters of the state through the issuance of NPDES permits and WDRs. The San Diego RWQCB also develops TMDLs for the San Diego region. Load reduction efforts for sediment, bacteria, and other constituents within the planning area are ongoing and implemented through water quality improvement plans (WQIPs), municipal NPDES stormwater permits, and individual NPDES permits (e.g., NPDES permit for water treatment plant discharges).

San Diego Basin Plan

The Water Quality Control Plan for the San Diego Basin (Basin Plan) sets forth water quality objectives for constituents that could potentially cause an adverse effect or impact on the beneficial uses of water. The beneficial uses of the receiving waters relevant to San Diego River watershed are listed in Table 4.9-1. Specifically, the Basin Plan is designed to accomplish the following:

- Designate beneficial uses for surface and groundwater
- Set the narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy
- Describe implementation programs to protect the beneficial uses of all waters within the region
- Describe surveillance and monitoring activities to evaluate the effectiveness of the Basin Plan

The Basin Plan also identifies specific narrative and numeric water quality objectives for a number of physical properties (e.g., temperature, turbidity, and suspended solids), biological constituents (e.g., coliform bacteria), and chemical conditions of concern, including inorganic parameters, trace metals, and organic compounds. Water quality objectives for toxic priority pollutants (i.e., select trace metals and synthetic organic compounds) also are identified in the Basin Plan.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act of 2014 provides a framework to regulate groundwater for the first time in California's history. The intent of the law is to strengthen local groundwater management of basins most critical to the state's water needs with an understanding that groundwater is most effectively managed at the local level. The act requires basins to be sustainably managed by local public agencies (e.g., counties, cities, and water agencies) that become groundwater sustainability agencies (GSAs). The primary purpose of the GSAs is to develop and implement a groundwater sustainability plan to achieve long-term groundwater sustainability. In the County, the state has designated four of the County's basins as medium-priority and subject to the act: Borrego Valley, San Diego River Valley, San Luis Rey Valley, and San Pasqual Valley. Groundwater sustainability management plans for these basins are in preparation.

4.9.2.3 Local

City of Santee Best Management Practices Design Manual

The City's Best Management Practices (BMP) Design Manual provides guidelines for compliance with on-site post-construction stormwater requirements in the Regional MS4 Permit and assists the land development community by streamlining project reviews and maximizing cost-effective environmental benefits, meeting performance standards specified in the Regional MS4 Permit. By following the process outlined in the BMP Design Manual, applicants (for both private and public developments) can develop a single integrated design that complies with the Regional MS4 Permit source control and site design requirements, stormwater pollutant control requirements (i.e., water quality), and hydromodification management (flow control and sediment supply) requirements.

City of Santee Guidelines for Surface Water Pollution Prevention

The City's Guidelines for Surface Water Pollution Prevention (Manual) supports the City's Storm Water Management and Discharge Control Ordinance (Storm Water Ordinance), codified as Santee Municipal Code, Chapter 9.06. The Manual also supports the water quality protection provisions of Santee Municipal Code, Chapter 11.40, Excavation and Grading. In general, the Manual establishes what dischargers must do to comply with the ordinances and to receive permits for projects and activities that are subject to them. The Manual and the ordinances have been prepared to provide the City with the respective legal authority and administrative actions necessary to comply with the requirements of Regional MS4 Permit.

City of Santee Jurisdictional Runoff Management Program

The Regional MS4 Permit regulates discharges to MS4s within 18 municipalities in the County, the County of San Diego, the San Diego County Regional Airport Authority, and the San Diego Unified Port District (collectively referred to as "copermittees" or "municipalities"). The Regional MS4 Permit requires each copermittee, including the City, to develop a comprehensive JRMP. The JRMP is the City's approach to improving water quality in rivers, bays, lakes, and the Pacific Ocean through reducing discharges of pollutants to the stormwater conveyance system. The City's stormwater conveyance system, like that of most other jurisdictions across the United States, conveys runoff from rain, irrigation runoff, natural groundwater seepage, and other sources of water to water bodies without treatment. To reduce pollutants in these discharges to water bodies, the City implements or requires its residents, businesses, municipal facilities, and landowners to implement a variety of measures commonly referred to as BMPs. Major components of the JRMP include the implementation of BMP requirements, water quality monitoring, educational outreach efforts, municipal maintenance procedures, inspection and enforcement programs, and water quality monitoring procedures.

San Diego Regional Water Quality Control Board Hydromodification Management Plan Requirements

Hydromodification management plans (HMPs) are requirements of the San Diego RWQCB to manage increases in runoff discharge rates and durations from all priority development projects, where such increased rates and durations are likely to cause increased erosion of channel beds and banks, sediment pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force. The proposed project is considered a priority development project. Therefore, a HMP has been prepared (included in Appendix J2) to address pre- and post-project discharge rates and durations to prevent increased potential for erosion and other significant adverse impacts to beneficial uses attributable to changes in the discharge rates and durations.

Santee Municipal Code

The City's primary legal authority for requiring construction projects to implement water quality control measures are set forth in Chapters 9.06, 11.40, and 12.30 of the Santee Municipal Code.

Chapter 9.06, Stormwater Management and Discharge Control

The purposes of Chapter 9.06, Storm Water Ordinance, are as follows (City of Santee 2020):

1. Effectively prohibiting nonstormwater discharges to the stormwater conveyance system.
2. Eliminating illicit discharges and illicit connections to the stormwater conveyance system.
3. Reducing the discharge of pollutants from the stormwater conveyance system, to the maximum extent practicable in order to achieve applicable water quality objectives for surface waters in San Diego County.
4. Achieving compliance with Total Maximum Daily Load (TMDL) regulations.

Ultimately, the intent of this chapter is to protect and enhance the water quality of our watercourses, water bodies, and wetlands in a manner pursuant to and consistent with the CWA, Porter-Cologne Act, and Regional MS4 Permit.

Chapter 11.40, Excavation and Grading

This chapter establishes minimum requirements for grading, excavating, and filling of land and provides water quality protection provisions. It also provides for the issuance of permits and provides for the enforcement of the chapter provisions.

Chapter 12.30, Development Impact Fees

There are several development impact fees in the Santee Municipal Code. These fees impose on new development the costs of constructing public facilities, which are reasonably related to the impacts of the new development. The drainage fee, in particular, provides funds for the installation of needed drainage improvements identified in the City of Santee Citywide Drainage Study prepared by BSI Consultants dated February 1990 (BSI Consultants 1990). Section 12.30.160 in the Santee Municipal Code includes how fees are calculated depending on land use types (City of Santee 2020). The proposed project would be required to pay the appropriate land development impact fees determined by the City during the entitlement review process and prior to any issuance of building permits.

Specific to drainage, a dual 72-inch corrugated metal pipe conveyance line (E5g) has been identified for replacement off site and downstream from the project site (BSI Consultants 1990). This line is undersized to handle existing flows during the 100-year storm event, and it is also nearing the end of its service life. Its replacement with a reinforced concrete box culvert is currently in design by City staff, and construction is anticipated to commence in April 2021 and be completed in the fall of 2021 (Capital Improvement Project 2020–2024). The Master Drainage

Study (Appendix J1) prepared by Hunsaker & Associates concludes that the post-development flow of water to corrugated metal pipe conveyance line E5g resulting from the proposed project development would be less than pre-development flow and, therefore, would decrease flows into this system, and no mitigation is required. Nevertheless, the developer would contribute funds to the drainage fee program, pursuant to the Development Agreement with the City, that may be used to improve corrugated metal pipe conveyance line E5g.

Water Quality Improvement Plan for the San Diego River Watershed Management Area

The WQIP for the San Diego River watershed is a comprehensive watershed-based program designed to improve surface water quality in the San Diego River Watershed Management Area (WMA) (City of El Cajon, et al. 2016). The San Diego River watershed encompasses a land area of 434 square miles, making it the second largest WMA in the County. It lies in the central portion of the County and neighbors Los Peñasquitos and San Dieguito River watersheds to the north and San Diego Bay WMA to the south and includes four hydrologic areas including the Lower San Diego River (907.1). The WQIP is a requirement of updated stormwater regulations adopted by the RWQCB in the Regional MS4 Permit. Agencies involved in the development of the San Diego River WQIP include the Cities of El Cajon, La Mesa, Santee, and San Diego, the County, and the California Department of Transportation. The WQIP for the San Diego River WMA identifies highest priority water quality conditions, strategies to address them, and monitoring plans. The ultimate goal of the WQIP is to protect, preserve, enhance, and restore water quality of receiving water bodies. These improvements in water quality will be accomplished through an adaptive planning and management process that identifies the highest priority water quality conditions within the watershed and implements strategies to address them. The San Diego River WQIP was originally submitted to the San Diego RWQCB on June 26, 2015, as required by the Regional MS4 Permit. The WQIP was subsequently revised and resubmitted to incorporate comments received from the public and the San Diego RWQCB. Following further comments, the San Diego RWQCB issued an acceptance letter for the San Diego River WQIP on February 12, 2016.

4.9.3 Thresholds of Significance

Thresholds used to evaluate potential hydrology and water quality impacts are based on applicable criteria in Appendix G of the CEQA Guidelines. A significant impact would occur if the proposed project would:

- **Threshold 1:** Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.
- **Threshold 2:** Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

- **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 or through the addition of impervious surfaces, in a manner which would:
  - Result in substantial erosion or siltation on or off site;
  - Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;
  - Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff or;
  - Impede or redirect flood flows.
- **Threshold 4:** In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
- **Threshold 5:** Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

4.9.4 Method of Analysis

Hydrology and water quality impacts were determined by comparing the proposed project with the objectives of the NPDES General Construction Permit, Regional MS4 Permit, Santee General Plan, Santee Municipal Code, City's BMP Design Manual, and City's JRMP. In addition to all applicable plans, information for this section is based on the analyses contained in the technical studies prepared for the proposed project. Regardless of the ultimate development on the proposed school site (school or residential), the impacts to hydrology would be the same due to similar ground disturbance activities. Therefore, the following analysis adequately addresses the preferred land use plan with school and the land use plan without school.

4.9.5 Project Impacts and Mitigation Measures

4.9.5.1 Threshold 1: Water Quality Standards

Would the proposed project violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality?

Impact: The proposed project would have the potential to generate pollutants during construction and post-construction activities that could impact downstream water quality if not properly controlled. However, compliance with applicable regulations would ensure the downstream water quality is not impacted.	**Mitigation:** No mitigation is required.
Significance Before Mitigation: Less than significant.	**Significance After Mitigation:** Less than significant.

Impact Analysis

Construction and operation activities associated with the proposed project could result in an increase in potential discharge of pollutants to receiving waters, including waters designated as impaired for certain conditions of concerns. Hydromodification could increase stormwater runoff and intensify erosion and the transport of sediments and other pollutants. Development of vacant land would introduce new types of pollutants in stormwater runoff.

Under the receiving waters limitation provisions of applicable NPDES permits, discharges from sites must not cause or contribute to the violation of water quality standards in any receiving waters. With regard to general water quality impacts from stormwater and other runoff, pollutants generated at the project site from construction and operational activities associated with the proposed project could adversely affect water quality in a variety of ways. A summary of the general adverse environmental effects that could result from the most common pollutant categories is provided below:

- **Sediments.** Sediments are soils or other surficial materials eroded and then transported or deposited by the action of wind, water, ice, or gravity. Sediments can increase turbidity, clog fish gills, reduce spawning habitat, lower young aquatic organisms' survival rates, smother bottom dwelling organisms, and suppress aquatic vegetation growth.
- **Nutrients.** Nutrients are inorganic substances, such as nitrogen and phosphorus. They commonly exist in the form of mineral salts that are either dissolved or suspended in water. Primary sources of nutrients in urban runoff are fertilizers and eroded soils. Excessive discharge of nutrients to water bodies and streams can cause excessive aquatic algae and plant growth. Such excessive production, referred to as eutrophication, may lead to excessive decay of organic matter in the water body, loss of oxygen in the water, release of toxins in sediment, and the eventual death of aquatic organisms.
- **Metals.** Metals are raw material components in non-metal products such as fuels, adhesives, paints, and other coatings. Primary sources of metal pollution in stormwater are typically commercially available metals and metal products. Metals of concern include cadmium, chromium, copper, lead, mercury, and zinc. Lead and chromium have been used as corrosion inhibitors in primer coatings and cooling tower systems. At low concentrations that naturally occur in soils, metals are not toxic. However, at higher concentrations, certain metals can be toxic to aquatic life. Humans can be impacted from contaminated groundwater resources and bioaccumulation of metals in fish and shellfish. Environmental concerns regarding the potential for release of metals to the environment have already led to restricted metal usage in certain applications.
- **Organic Compounds.** Organic compounds are carbon-based. Commercially available or naturally occurring organic compounds are found in pesticides, solvents, and hydrocarbons. Organic compounds can, at certain concentrations, indirectly or directly constitute a hazard to life or health. When rinsing off objects, toxic levels of solvents

and cleaning compounds can be discharged to storm drains. Dirt, grease, and grime retained in the cleaning fluid or rinse water may also adsorb levels of organic compounds that are harmful or hazardous to aquatic life.

- **Trash and Debris.** Trash (such as paper, plastic, polystyrene packing foam, and aluminum materials) and biodegradable organic matter (such as leaves, grass cuttings, and food waste) are general waste products that may have a significant impact on the recreational value of a water body and aquatic habitat. Excess organic matter can create a high biochemical oxygen demand in a stream and thereby lower its water quality. In addition, in areas where stagnant water exists, the presence of excess organic matter can promote septic conditions resulting in the growth of undesirable organisms and the release of odorous and hazardous compounds such as hydrogen sulfide.
- **Oxygen-Demanding Substances.** This category includes biodegradable organic material and chemicals that react with dissolved oxygen in water to form other compounds. Proteins, carbohydrates, and fats are examples of biodegradable organic compounds. Compounds such as ammonia and hydrogen sulfide are examples of oxygen-demanding compounds. The oxygen demand of a substance can lead to depletion of dissolved oxygen in a water body and possibly the development of septic conditions.
- **Oil and Grease.** Oil and grease are characterized as high molecular-weight organic compounds. Primary sources of oil and grease are petroleum hydrocarbon products, motor products from leaking vehicles, esters, oils, fats, waxes, and high molecular-weight fatty acids. Introduction of these pollutants to the water bodies is typical due to the wide uses and applications of some of these products in municipal, residential, commercial, industrial, and construction areas. Elevated oil and grease content can decrease the water quality and the aesthetic value of the water body.
- **Bacteria and Viruses.** Bacteria and viruses are ubiquitous micro-organisms that thrive under certain environmental conditions. Their proliferation is typically caused by the transport of wildlife or human fecal wastes from the watershed. Excessive bacteria and viruses in water can alter the aquatic habitat and create a harmful environment for humans and aquatic life. The decomposition of excess organic waste causes increased growth of undesirable organisms in the water.
- **Pesticides.** Pesticides (including herbicides) are chemical compounds commonly used to control nuisance growth or prevalence of organisms. Excessive application of a pesticide may result in runoff containing toxic levels of its active component.

Construction Impacts

During construction, the proposed project has the potential to produce pollutants such as sediment, nutrients, heavy metals, organic compounds, trash and debris, oxygen-demanding substances, oil and grease, bacteria and viruses, and pesticides/herbicides. Additionally, waste materials such as wash water, paints, wood, paper, concrete, food containers, and sanitary wastes may be discharged

from the project site during construction. These pollutants could impact water quality if they were washed off site by stormwater or non-stormwater or are blown or tracked off site to areas susceptible to wash off by stormwater or non-stormwater. As discussed in Section 4.9.1.2, pollutants are likely to drain into Sycamore Canyon Creek. Sycamore Canyon Creek drains into the San Diego River, which then drains into the Pacific Ocean. Therefore, these water bodies are identified as the receiving waters of the proposed project. Impairments for these water bodies include dissolved oxygen, benthic community effects, cadmium, indicator bacteria, nitrogen, dissolved oxygen, phosphorus, total dissolved solids, and toxicity for the San Diego River (Appendix J2). Under these impairments, the receiving water cannot assimilate or accommodate additional loading of pollutants, and any increases in pollutants would contribute to the impairment.

Construction control measures to minimize water quality impacts are not necessarily the same measures used for long-term water quality management because construction-related water quality control measures are temporary in nature and specific to the type of construction activity. The proposed project would be subject to compliance with Construction General Permit requirements and with Chapter 9.06 of the Santee Municipal Code, which prohibits non-stormwater discharges and eliminates illicit discharges and illicit connections to the stormwater conveyance system, reduces the discharge of pollutants from the stormwater conveyance system to the maximum extent practicable in order to achieve applicable water quality objectives for surface waters in the County, and achieves compliance with TMDL regulations (City of Santee 2020).

Prior to project grading or construction, the Construction General Permit requires preparation of a SWPPP. The SWPPP would include a series of specific BMPs to be implemented during construction in order to address erosion, accidental spills, and the quality of stormwater runoff. The SWPPP applies only to the time period in which construction activity is taking place, and is no longer operative once the soil on the project site has been stabilized and a Notice of Termination is completed. BMPs that must be implemented as part of a SWPPP can be grouped into two major categories: (1) erosion and sediment control BMPs and (2) non-stormwater management and materials management BMPs.

Erosion control measures include practices to stabilize soil, protect soil in its existing location, and prevent soil particles from migrating. Examples of erosion control BMPs are preserving existing vegetation, mulching, and hydroseeding. Sediment control measures are practices to collect soil particles after they have migrated, but before the sediment leaves the site. Examples of sediment control BMPs are street sweeping, fiber rolls, silt fencing, gravel bags, sand bags, storm drain inlet protection, sediment traps, and detention basins. Wind erosion control measures prevent soil particles from leaving the site in the air. Examples of wind erosion control BMPs include applying water or other dust suppressants to exposed soils on the site. Tracking control measures prevent sediment from being tracked off site via vehicles leaving the site, to the extent practicable. A

stabilized construction entrance not only limits the access points to the construction site but also functions to partially remove sediment from vehicles prior to leaving the site.

Non-stormwater management and materials management control measures reduce non-sediment-related pollutants from potentially leaving the construction site, to the extent practicable. The Construction General Permit prohibits the discharge of materials other than stormwater and authorized non-stormwater discharges. Non-stormwater BMPs tend to be management practices with the purpose of preventing stormwater from coming into contact with potential pollutants. Non-stormwater BMPs include preventing illicit discharges and implementing good practices for vehicle and equipment maintenance, cleaning, and fueling operations, such as using drip pans under vehicles. Waste and materials management BMPs include implementing practices and procedures to prevent pollution from materials used on construction sites. Examples of materials management BMPs include the following:

- Performing good housekeeping activities such as storing of materials covered and elevated off the ground in a central location
- Securely locating portable toilets away from the storm drainage system and performing routine maintenance
- Providing a central location for concrete washout and performing routine maintenance
- Providing several dumpsters and trashcans throughout the construction site for litter/floatable management
- Covering or containing stockpiled materials and overall good housekeeping on the site

As part of project compliance with the General Construction Permit, a Notice of Intent would be prepared and submitted to the San Diego RWQCB providing notification and intent to comply with the General Permit. The Construction General Permit also requires that construction sites be inspected before and after storm events and every 24 hours during extended storm events. The purpose of the inspections is to identify maintenance requirements for BMPs and to determine the effectiveness of BMPs that are being implemented.

Operation Impacts

Operation of the proposed project land uses would have the potential to generate pollutants that could degrade the surface water quality of downstream receiving waters. Pollutant sources from operation of the proposed project would include landscaping, rooftops, parking and driveways, roadways, agricultural uses, general use areas, and trash storage areas. Pollutants from operation of the proposed project would include sediment, nutrients, heavy metals, organic compounds, trash and debris, oxygen-demanding substances, oil and grease, bacteria and viruses, and pesticides (Appendix J2). In addition, project implementation would require routine operation and maintenance activities, thereby increasing instances of accidental spills and non-stormwater discharges to storm drains, and non-stormwater connections (e.g., sewer connections) that could

result in the potential discharge of pollutants to storm drainage systems and associated receiving waters. The change in the natural watershed hydrologic processes and runoff characteristics (i.e., interception, infiltration, overland flow, interflow, and groundwater flow) caused by land disturbance activities such as vegetation removal or grading, and other land use changes such as drainage modifications and changes in impervious surfaces is called hydromodification. Hydromodification intensifies the erosion process and the transport of sediments and may result in increased stormwater runoff flow and volumes, and discharges to receiving waters.

Consistent with the City's Stormwater Management Ordinance, the proposed project is considered a priority development project and is required to identify and incorporate measures for hydromodification management to ensure that stormwater runoff rates and durations do not exceed pre-development conditions or result in adverse erosion or sedimentation effects. All priority development projects are required to implement structural BMPs for stormwater pollutant control. Additionally, projects subject to hydromodification management requirements must implement structural BMPs for flow control. Structural BMPs, such as biofiltration (basins and proprietary modular units) and combined pollutant control and hydromodification control measures, have been incorporated into the proposed project design (see Figure 3-13, Conceptual Storm Drainage Plan, in Chapter 3, Project Description).

Runoff from natural and sloped areas containing no impervious areas would be collected in separate storm drains and discharged through riprap energy dissipaters to avoid comingling of drainage and to allow any course sediment generated in the areas to pass through. The proposed project would extend and make improvements to Fanita Parkway and would include features in accordance with Green Streets design elements, including rock garden swales and tree wells, to address water quality. Street improvements would reset roadway widths, medians, utilities, and storm drain conveyance systems. The proposed storm drain system would be constructed to collect and convey on-site runoff as well off-site run-on from developed areas east of Fanita Parkway that confluences with the Fanita Parkway flows. However, instead of discharging into an open channel along the western side of Fanita Parkway as it currently does, confluence flows would be conveyed within a storm drain pipe within Fanita Parkway to an existing drainage. Cuyamaca Street and Magnolia Avenue would also be extended and improved to provide access to the project site. Similar to Fanita Parkway, these streets would also include Green Street design elements, such as rock gardens and tree wells.

Through changes in topography and land cover on the project site, the proposed project has the potential to result in impacts to sedimentary transport to downstream channel areas, known as Potential Critical Coarse Sediment Yield Areas (PCCSYA), by altering the sediment producing areas on the project site. The alteration of PCCSYAs has the potential to negatively impact characteristics of sediment supply and delivery which can lead to water quality degradation of downstream receiving waters. To avoid impacts to PCCSYAs produced on the project site and resulting downstream water quality impacts, the discharges of the sediment producing areas would

be diverted to adjust the sediment production as close as possible to the original conditions (Appendix J6). As a result, the proposed project would not encroach into more than 5 percent of the proposed project's potential PCCSYAs areas off site and would have no net encroachment into on-site areas (Appendix J7). In addition, the discharges of the project site would be adjusted by designing BMPs such that the erosion from the discharged flows is as close as possible to the pre-development conditions. The proposed project would avoid significant impacts to both on- and off-site PCCSYAs and water quality through redirecting sediment producing discharges, adherence to BMPs, and the protection of the remaining natural areas (Appendices J6 and J7). Therefore, alteration of the drainage area on the project site would have less than significant impacts to PCCSYAs and would not result in the loss of sedimentary transport or decreased water quality to downstream channel areas.

The Stormwater Quality Management Plan identifies a number of site design BMPs to ensure that water quality is maintained during project operation (Appendix J2). The following BMPs have been incorporated into the project design to minimize impacts from project-generated operational pollutant sources, which include sediment, nutrients, heavy metals, organic compounds, trash and debris, oxygen-demanding substances, oil and grease, bacteria and viruses, and pesticides:

- Conserve natural drainage pathways (existing drainage patterns would be maintained as much as possible)
- Conserve natural areas, soils, and vegetation (conserve natural areas along site perimeter)
- Minimize impervious area (maximize the amount of Open Space and landscaping)
- Minimize soil compaction (where feasible, use minimum compaction)
- Impervious area dispersion (use splash pads at downspout discharge points)
- Runoff collection (direct downspout discharge to biofiltration areas)
- Landscaping with native or drought tolerant species

The Stormwater Quality Management Plan also identifies a series of specific non-structural and structural source control BMPs to be incorporated into the project design. The following source control BMPs are included in the project design (Appendix J2):

- Prevent illicit discharges into the MS4 (smart irrigation systems)
- Protect outdoor storage areas (roof downspouts will be directed away from storage areas)
- Provide storm drain system stenciling and signage
- Protect material stored in outdoor work areas from rainfall (Farm will require protection of outdoor organic material)
- Protect trash storage areas from rainfall (trash storage containers will be required to have lids)
- Maintain on-site storm drain inlets (inlet will be maintained)
- Provide future indoor and structural pest control (integrated pest management information will be provided to owners)

- Maintain landscape/outdoor pesticide use (landscaping will be maintained using minimal or no pesticides)
- Maintain pools, spas, ponds, decorative fountains (on-site pools will be maintained)
- Connect floor sink to grease interceptor in food service locations
- Cover refuse areas (refuse areas will be covered for protection from rainfall)
- Clean and maintain vehicle and equipment (vehicle operations will not discharge polluted stormwater to storm drain system)
- Move loaded and unloaded items indoor as soon as possible at loading docks
- Drain fire sprinkler test water (where possible, means to drain fire sprinkler test water to sanitary sewer will be provided)
- Sweep streets regularly at plazas, sidewalks, and parking lots

Preparation of and compliance with the SWPPP, implementation of BMPs identified in the Stormwater Quality Management Plan, and compliance with existing federal, state, and local regulations as discussed previously would protect water quality and ensure project compliance with applicable water quality standards. The proposed project would not violate any water quality standards or WDRs. Additionally, the implementation of these BMPs would help treat runoff and decrease the amount of pollution entering receiving waters. Therefore, impacts would be less than significant.

Mitigation Measures

The proposed project would not result in a significant impact regarding the violation of any water quality standards or WDRs, or otherwise substantially degrade water quality; therefore, no mitigation is required.

4.9.5.2 Threshold 2: Groundwater Supplies

Would the proposed project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the proposed project may impede sustainable groundwater management of the basin?

Impact: The proposed project would be designed to minimize potential effects to groundwater recharge and would not use groundwater during project construction or operation.	**Mitigation:** No mitigation is required.
Significance Before Mitigation: Less than significant.	**Significance After Mitigation:** Less than significant.

Impact Analysis

The City does not rely on groundwater sources for its water supply. The project site would receive Advanced Treated Water from Padre Dam Municipal Water District through its Advanced Water Purification Program, which would provide the proposed project with a local, reliable, and sustainable water supply. No groundwater would be used for project construction or operation

activities. Therefore, the proposed project would not adversely affect or deplete groundwater supplies due to water demand generated by the proposed development.

Development of the proposed project would result in new impervious surfaces that may lead to a decrease in the amount of water recharged into the groundwater system within the project boundaries. To minimize potential effects on groundwater recharge, the proposed project would be designed to include pervious, landscaped areas, allowing groundwater recharge to continue to occur. Runoff from developed areas would drain into proposed on-site basin system designed to slow peak flow and discharge to rates equal to or less than existing conditions. Hydromodification management would occur through storage of stormwater within the basins, with outlets that regulate the flow rate and duration of stormwater released. Source control and low-impact development measures would be implemented to incorporate pervious surfaces and maximize the amount of open space, landscaping, and vegetated swales to slow and absorb runoff, allowing for groundwater recharge.

Further, the proposed project would include a total of approximately 2,022.6 acres of undeveloped area including 256 acres of Open Space, 1,650.4 acres of Habitat Preserve, and 116.2 acres of Agriculture and Parks (Community, Neighborhood, and Mini). As such, groundwater recharge in these areas would continue after project implementation.

The proposed project is not anticipated to substantially deplete groundwater supplies or interfere substantially with groundwater recharge. No groundwater would be used for project construction or operation, and the proposed project would be designed to minimize potential effects to groundwater recharge through consolidation of impervious surfaces and the retaining of approximately 2,022.6 acres as Open Space, Habitat Preserve, and Agriculture and Parks. Impacts would be less than significant.

Mitigation Measures

The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge; therefore, no mitigation is required.

4.9.5.3 Threshold 3: Site Drainage and Hydrology

Would the proposed 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 through the addition of impervious surfaces, in a manner which would:

- ***Result in substantial erosion or siltation on or off site;***
- ***Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;***
- ***Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff or;***
- ***Impede or redirect flood flows.***

Impact: The proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would substantially increase the rate or amount of surface runoff in a manner that would impede or redirect flood flows, result in substantial erosion or siltation on or off site, or flooding on or off site. The project would generate less runoff than existing conditions. Therefore, the proposed project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	**Mitigation:** No mitigation is required.
Significance Before Mitigation: Less than significant.	**Significance After Mitigation:** Less than significant.

Impact Analysis

Construction Impacts

Land-disturbing construction activities associated with implementation of the proposed project, such as vegetation clearing, grading, and excavation of project sites, and construction of new building foundations, streets, driveways, and trenches for utilities, could result in localized alteration of drainage patterns and temporarily increase erosion and sedimentation in the construction area.

Temporary ponding or flooding could also result from construction activities from temporary alterations of the drainage system (reducing its capacity of carrying runoff). Alterations may temporarily result in increased erosion and siltation if flows were substantially increased or routed to facilities or channels without capacity to carry the additional flow.

Construction phase activities implemented under the proposed project would be required to comply with the SWRCB General Construction Stormwater Permit, which requires preparation of a SWPPP. The SWPPP would include a series of specific BMPs to be implemented during construction to address erosion, accidental spills, and the quality of stormwater runoff, which have been developed in part to reduce the potential adverse effects associated with construction activities. In addition, construction phase activities implemented under the proposed project would be required to comply with Chapter 9.06 of the Santee Municipal Code, which mandates the implementation of a pollution control plan for each phase of construction and season of the year (City of Santee 2020). The pollution control plan would incorporate BMPs in accordance with the California Stormwater Quality Association's Construction BMP Handbook (2015).

Therefore, with the adherence to regulatory requirements, which include the implementation of erosion and sediment control BMPs, any short-term impacts resulting from alterations of drainage and hydrology during construction would be less than significant.

Operation Impacts

The proposed project would result in hydromodification from development of impervious surfaces in an area that is currently undeveloped (Appendix J2). Hydromodification could increase stormwater runoff and intensify erosion and the transport of sediments and other pollutants. Changes to delivery of coarse sediment and transport of coarse sediment result in increased transport capacity and the potential for adverse channel erosion (City of Santee 2016). Additionally, impervious surfaces do not allow percolation of the water down into the soil. Water is instead forced directly into storm drain systems or streams, where increases in erosion and siltation could result, as well as increased flood risks. These alterations could also result in exceeding the existing capacity of stormwater facilities if substantial drainage is rerouted or stormwater flow or velocities are substantially increased. To avoid these types of impacts, the proposed project includes a drainage network designed to control and filter stormwater runoff in conformance with RWQCB and City's requirements, which call for retention first, then biofiltration. The proposed stormwater system would include the use of biofilters, on-site storage of stormwater in basins with outlets that regulate the flow rate and duration of stormwater released, and the use of both retention and detention basins to slow and sequester runoff.

The pre- and post-development conditions for the proposed project were evaluated to determine if the proposed biofiltration facilities are sized adequately to meet the current HMP requirements of the RWQCB. Hydromodification management would occur through storage of stormwater in proposed on-site basins, with outlets to regulate the flow rate and duration of stormwater released. Runoff would be collected in storm drain inlets from street surfaces and routed toward multi-purpose basins and treated for stormwater quality, flow control for hydromodification, and flood attenuation to maintain existing peak-flow rates during a 100-year storm event.

As indicated in the Master Drainage Study (Appendix J1), the pre-development project 100-year flows are 3,312 cubic feet per second. Through project design, stormwater runoff upon project completion would result in 2,729 cubic feet per second 100-year flows. Thus, project design would help to reduce flows by approximately 583 cubic feet per second versus existing conditions. Table 4.9-2 summarizes project site flows for pre-and post-development. Pre- and post-development drainage basins for the proposed project are depicted on Figure 4.9-1, Existing Conditions Hydrology, and Figure 4.9-2, Proposed Conditions Hydrology.

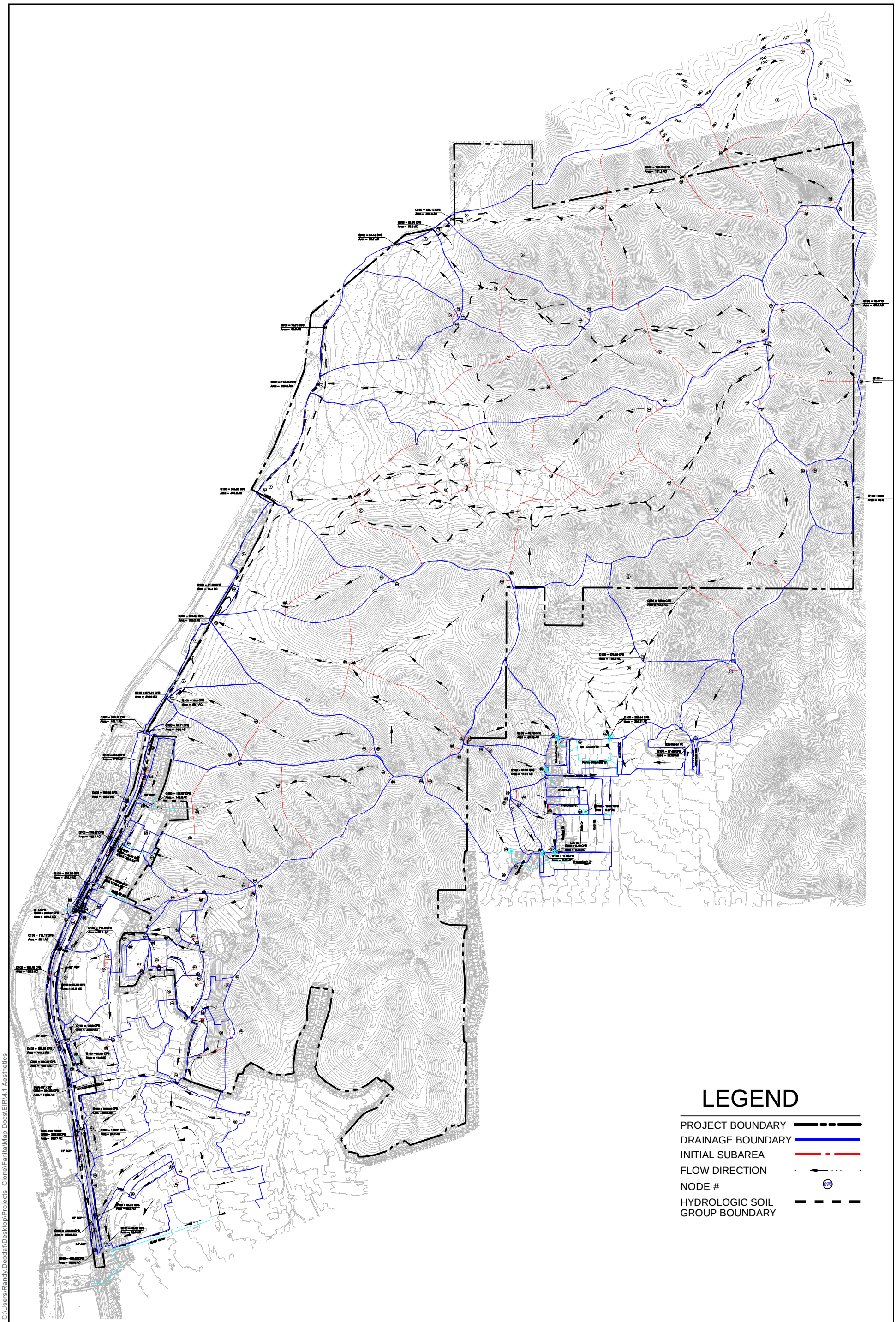
Table 4.9-2. Pre- and Post-Development Project Site Flows

Pre-Development		Post-Development		Difference	
Drainage Area (acres)	100-Year Flow (cfs)	Drainage Area (acres)	100-Year Flow (cfs)	Drainage Area (acres)	100-Year Flow (cfs)
3,352	3,312	3,354	2,729	2	−583

Source: Appendix J1.

Notes: cfs = cubic feet per second

Numbers in table exhibit a rounding of values and is within statistical tolerance.



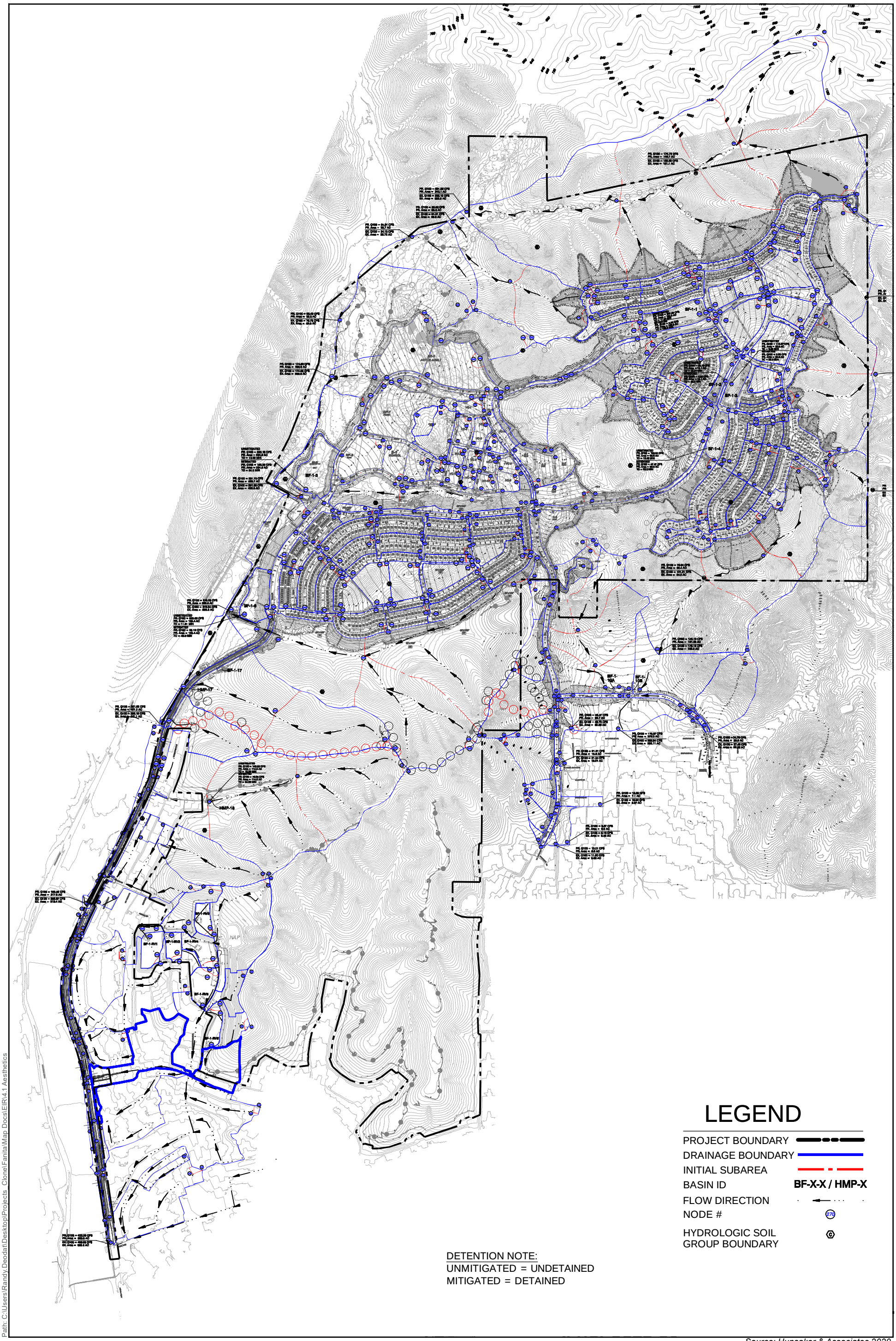
Source: Hunsaker & Associates 2020.

Harris & Associates

Figure 4.9-1

Existing Conditions Hydrology

This page intentionally left blank.



Path: C:\Users\Randy.Deodati\Desktop\Projects - Clone\Fanita\Map Docs\EIR\4.1 Aesthetics

Source: Hunsaker & Associates 2020.

Harris & Associates

Figure 4.9-2

Proposed Conditions Hydrology

This page intentionally left blank.

The proposed project would construct a total of 19 stormwater basins and 3 vaults. Of the 19 stormwater basins, the proposed project would construct 15 on-site stormwater basins (BF-1-1 through BF-1-6, BF-1-17, HMP-17, HMP-18, and BF-1-RV1 through BF-1-RV6). Biofiltration basins BF-1-1 through BF-1-6, BF-1-17, and BF-1-RV1 through BF-1-RV6 would serve as combined water quality, hydromodification, and detention basins. Basins HMP-17 and HMP-18 would serve as hydromodification and detention basins. The water quality and hydromodification calculations for biofiltration basins BF-1-1 through BF-1-6 and BF-1-RV1 through BF-1-RV6 are per Appendix J2 and the calculations for basins BF-1-17, HMP-17, and HMP-18 are per Appendix J3. In addition, the proposed project would construct four off-site stormwater basins (BF-1-10A, BF-1-10B, HMP-11, and HMP-12) and three vaults (HMP-13, HMP-15, and HMP-16). Basins BF-1-10A and BF-1-10B would serve as combined water quality, hydromodification, and detention basins. Basins HMP-11 and HMP-12 and vaults HMP-13, HMP-15, and HMP-16 would serve as hydromodification and detention facilities. The water quality and hydromodification calculations for these biofiltration basins are per Appendix J3.

The system would collect stormwater through a series of swales, catch basins, and culverts that direct stormwater to detention/biofiltration basins as illustrated on Figure 3-13 in Chapter 3. Runoff from the residential portions of the site would generally be collected by inlets and conveyed toward one of the proposed detention basins. Flows would outlet the basins and discharge into downstream conveyance channels consisting of storm drain pipes, constructed channels, or natural drainage ways. The proposed basins would also serve as detention for flow-control hydromodification and peak-flow attenuation. Peak-flow attenuation would be required not only due to the increase in imperviousness associated with the development but also because the site design proposes to divert acreage from areas that currently drain easterly and southerly to drain westerly toward Sycamore Canyon Creek.

Other areas along the roadway corridors of Fanita Parkway, Cuyamaca Street, and Magnolia Avenue would include storage facilities such as underground vaults and aboveground basins to address local peak-flow attenuation. Each detention facility would be equipped with a riser designed to accomplish the various functions. Orifices placed along the height of the rise would regulate the lower flow rates to address flow-control hydromodification. The cross-sectional area of the riser would aid in regulating the higher flows to reduce flows below existing conditions. The basins would also include a second riser installed for redundancy and as an emergency outlet should the primary riser clog. Design of this secondary riser would be performed during final engineering. Depending on the accessibility of the riser structures, it may be necessary to equip some of them with a grate over the top opening as a safety measure. The biofiltration basins proposed for the site would be lined; therefore, no infiltration is assumed in the biofiltration basins.

The storm drain system and layout would be designed to address peak flows and to integrate water quality features needed to comply with the City's BMP Design Manual requirements for water quality and hydromodification. As designed, the proposed project would allow biofiltration, evapotranspiration, and filtering of stormwater to remove microscopic organisms, suspended solids,

organic material, nitrogen, and phosphorous. The results show that development of the proposed project would not increase peak flows for any point of discharge. Therefore, the proposed project would not compromise the capacity of downstream drainage facilities, and effects due to erosion, sedimentation, and flooding are anticipated to be minimal.

The proposed project has been designed in compliance with the San Diego RWQCB and the City's requirements. Post-development flow rates would be reduced to below pre-development flow rates with implementation of bioretention and hydromodification basins. Construction runoff would be contained in compliance with the State of California Construction Permit. Post-construction runoff would be cleaned through bioretention basins and modular wetlands in compliance with the San Diego RWQCB Order R9-2013-0001. Portions of Fanita Parkway and Cuyamaca Street, Magnolia Avenue, and Summit Avenue have been designed as a Green Street per the requirements of the San Diego RWQCB.

All site runoff would receive water quality treatment prior to discharging off site. To prevent erosive velocities at pipe outlet locations, energy dissipating measures would be included as part of project design. These measures would be designed during final engineering and would include but not be limited to riprap and concrete energy dissipating headwalls. Landform grading has been incorporated into the proposed project to mimic existing conditions where the proposed grading ties into or daylights with the existing terrain. It is intended that the stormwater running off manufactured slopes would sheet flow and follow existing drainage patterns (Appendix J1). As shown in Table 4.9-2, implementation of hydromodification measures would reduce post-project flows to below pre-project conditions. As shown, the basins proposed for the proposed project would help to reduce flows by approximately 583 cubic feet per second compared to existing conditions. Thus, post-project flows would be released into Sycamore Canyon Creek at a lower rate than existing natural flows. Runoff from the adjacent hillsides and natural off-site areas would be collected in a series of brow ditches and conveyed to culverts located within the proposed street improvements. Runoff generated by the hardscape improvements would be intercepted via curb and gutter, draining to an internal storm drain system that would convey these flows to Modular Wetland Biofiltration[2] BMP's prior to draining to HMP detention facilities (Appendix J3). Once treated and detained, these flows are then discharged to their respective discharge location. Proposed structural BMPs would be maintained by the homeowners association in perpetuity.

Additionally, Green Streets principles and infrastructure are proposed for meeting water quality requirements for portions of Fanita Parkway, Cuyamaca Street, Magnolia Avenue and Summit Avenue in the areas outside of the villages where the roadways are proposed to be improved. The Green Streets approach integrates strategies into roadway design that help protect, restore, and mimic

[2] The Bio Clean Modular Wetlands System Linear represents a pioneering breakthrough in stormwater technology as the only biofiltration system to utilize patented horizontal flow, allowing for a smaller footprint, higher treatment capacity, and a wide range of versatility. While most biofilters use little or no pretreatment, the Modular Wetlands incorporates an advanced pretreatment chamber that includes separation and prefilter cartridges. In this chamber, sediment and hydrocarbons are removed from runoff before entering the biofiltration chamber, reducing maintenance costs and improving performance (Appendix J3).

the natural water cycle such that runoff is encouraged to be percolated or stored in a more natural manner, with the use of features such as rock garden swales and tree wells, which are designed to capture runoff from hardened surfaces, slow water down, spread it out, and allow it to sink into the soil during storms. Methods like this would help to trap silt and pollutants to reduce siltation and erosion. The use of Green Street principles would reduce the proposed project's potential to increase peak flows. Therefore, compared to existing conditions, the potential for erosion to occur downstream of the project site would be reduced with implementation of the proposed project. Existing flow velocities would be lessened with implementation of the proposed project since post-development flows would be reduced. As such, the proposed project would not compromise the capacity of downstream drainage facilities, and effects due to erosion and sedimentation are anticipated to be minimal. Therefore, erosion and siltation is not expected downstream of the project site (Appendix J1).

Further, the project design includes improvements to allow connection to the City's existing stormwater infrastructure system. Proposed improvements would ensure that stormwater flows are properly maintained and treated on site so that runoff volumes or velocities do not exceed that which currently occur under existing conditions. Further, as described under Threshold 1, the proposed project would be subject to NPDES requirements and other local, state, and federal regulations pertaining to maintaining water quality and minimizing potential adverse effects on downstream water bodies. Because stormwater runoff from the site would be less with the proposed project, it would not create or contribute runoff that would exceed the capacity of existing or planned stormwater drainage systems, and the proposed project would not generate additional sources of polluted runoff.

Lastly, the project site is in Federal Emergency Management Agency Flood Zone X, which is outside of the 100- and 500-year flood hazard areas. The proposed project would be designed to reduce peak-flow rates such that downstream locations would be below existing flow rates. The proposed project would not impede or redirect flood flows because redirected areas would be reduced by attenuation facilities such that post-development flows would not exceed pre-project flows. Therefore, the proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would substantially increase the rate or amount of surface runoff in a way that would impede or redirect flood flows or result in substantial erosion or siltation on or off site or flooding on or off site. The proposed project would not create or contribute runoff that would exceed the capacity of existing or planned stormwater drainage systems, and the proposed project would not generate additional sources of polluted runoff. As such, impacts would be less than significant.

Mitigation Measures

The proposed project would have a less than significant impact regarding (1) the alteration of drainages and hydrology that would result in substantial erosion or siltation on or off site, (2) a substantial increase the rate or amount of surface runoff in a manner that would result in flooding on or off site, (3) impeding or redirecting flood flows, or (4) creating or contributing runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Therefore, no mitigation is required.

4.9.5.4 Threshold 4: Activities in a Flood Hazard, Tsunami, or Seiche Zone

Would implementation of the proposed project result in activities in a flood hazard, tsunami, or seiche zone that would risk release of pollutants due to project inundation?

Impact: Implementation of the proposed project would not result in activities in a flood hazard, tsunami, or seiche zone.	**Mitigation:** No mitigation is required.
Significance Before Mitigation: No impact.	**Significance After Mitigation:** Less than significant.

Impact Analysis

The project site is not subject to inundation by tsunami or seiche. The project site is located approximately 16 miles from the Pacific Ocean negating the potential for the site to be subject to a tsunami event. A seiche is a wave on the surface of a lake or landlocked bay that is caused by atmospheric or seismic disturbances. The nearest lake to the project site is San Vincente Reservoir located approximately 2 miles from the northeastern portion of the project site. This portion of the project site is located at approximately 1,000 feet above mean sea level and the area between the reservoir and the project site is a valley. This topographical variation would make it difficult for the project site to be inundated by the reservoir. Further, the project site is located in Federal Emergency Management Agency Flood Zone X, which is outside of the 100- and 500-year flood hazard areas. Therefore, implementation of the proposed project would not release pollutants due to inundation caused by a flood hazard, tsunami, or seiche.

Mitigation Measures

The proposed project would have no impact in regards to activities in a flood hazard, tsunami, or seiche zone that would risk release of pollutants due to project inundation. Therefore, no mitigation is required.

4.9.5.5 Threshold 5: Water Quality Control Plan or Sustainable Groundwater Management Plan

Would the proposed project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Impact: Implementation of the proposed project would have the potential to generate pollutants during construction and post-construction activities; however, compliance with applicable regulations would ensure that it would not conflict with or obstruct the implementation of the San Diego Basin Plan.	**Mitigation:** No mitigation is required.
Significance Before Mitigation: Less than significant.	**Significance After Mitigation:** Less than significant.

Impact Analysis

The project site is located within the San Diego River Hydraulic Unit (HU) of the San Diego region as defined by the San Diego RWQCB and is further located within the Santee Hydrologic Subarea. The Santee Hydrologic Subarea discharges into the San Diego River, which ultimately discharges into the Pacific Ocean. The project site currently drains west to Sycamore Canyon Creek and east to unnamed tributaries and storm drain conveyance systems that eventually discharge to San Diego River, both of which are on the CWA Section 303(d) list for dissolved oxygen. As discussed in Section 4.9.5.3, once developed, on-site hydromodification would divert acreages from areas that drained easterly to now drain west toward Sycamore Canyon Creek. As identified in the Basin Plan, the designated beneficial uses for Sycamore Canyon Creek include: agricultural supply (AGR), industrial services supply (IND), contact water recreation (REC1), non-contact water recreation (REC2), warm freshwater habitat (WARM), and wildlife habitat (WILD), and rare, threatened, or endangered species (RARE). Sycamore Canyon Creek is a tributary to the San Diego River, which is on the CWA Section 303(d) list for benthic community effects, cadmium, indicator bacteria, nitrogen, dissolved oxygen, phosphorus, total dissolved solids, and toxicity. The designated beneficial uses for the San Diego River include municipal and domestic supply (MUN); agricultural supply (AGR); industrial services supply (IND); contact water recreation (REC1); non-contact water recreation (REC2); preservation of biological habitats of special significance (BIOL); warm freshwater habitat (WARM); wildlife habitat (WILD); and rare, threatened, or endangered species (RARE). Construction and operation activities associated with the proposed project could result in an increase in potential discharge of pollutants to receiving waters, including waters designated as impaired. Additionally, hydromodification could increase stormwater runoff and intensify erosion and the transport of sediment and other pollutants. Land use changes may also introduce new types of pollutants in stormwater runoff. Initially, the City elected to be a GSA for the San Diego River Valley Groundwater Basin. However, the City subsequently withdrew from the GSA because the County entered in to a Memorandum of Understanding between the City of San Diego, City of Santee, Lakeside Water District, and Padre Dam Municipal Water District for the development of a Groundwater Sustainability Plan for the San Diego River Valley.

However, the project site falls outside of the boundaries of the San Diego River Valley Groundwater Basin (DWR 2004). Therefore, there is no sustainable groundwater management plan prepared for the project site.

Construction Impacts

Construction activities associated with the proposed project would involve various types of equipment such as bulldozers, scrapers, backhoes, and other earthmoving equipment; dump trucks; cranes; trucks; concrete mixers; and generators. Pollutants associated with these construction activities that could result in water quality impacts include soils, debris, other materials generated during demolition and clearing, fuels and other fluids associated with the equipment used for construction, paints, other hazardous materials, concrete slurries, and asphalt materials. However, as previously discussed, the proposed project would be required to comply with General Construction Stormwater Permit requirements, including the development and implementation of a SWPPP. The SWPPP must identify BMPs that the discharger would use to protect stormwater runoff from pollutants and the placement of those BMPs. Therefore, with the implementation of policies and regulatory requirements, which include the implementation of construction-period BMPs to address potential discharges of pollutants to stormwater, any short-term water quality impacts during construction of the proposed project would be minimized and would not cause a conflict with or obstruct implementation of the Basin Plan. Therefore, impacts would be less than significant.

Operation Impacts

Implementation of the proposed project would result in land use changes that would have the potential to generate pollutants that could degrade the surface water quality of downstream receiving waters. Pollution sources for the proposed project would include landscaping, rooftops, parking, and trash storage areas. In addition, implementation of the proposed project would also result in routine operation and maintenance activities, increasing opportunities for accidental spills and non-stormwater discharges to storm drains and non-stormwater connections (e.g., sewer connections) that could result in the potential discharge of pollutants to receiving waters.

However, as previously discussed, the proposed project requires the implementation of construction and operation BMPs, which include low-impact development site design and source control BMPs, to reduce runoff or pollutants at the source. Therefore, with implementation of appropriate BMPs, compliance with Chapter 9.06 of the Santee Municipal Code, and applicable state requirements, project impacts would be minimized and would not conflict with or obstruct implementation of the Basin Plan. Impacts would be less than significant.

Mitigation Measures

The proposed project would have a less than significant impact regarding a conflict with or obstruction of a water quality control plan or sustainable groundwater management plan. No mitigation is required.

4.9.6 Cumulative Impacts and Mitigation Measures

Would implementation of the proposed project have a cumulatively considerable contribution to a cumulative hydrology and water quality impact considering past, present, and probable future projects?

Cumulative Impact	Significance	Proposed Project Contribution
Threshold 1: Water Quality Standards	Less than significant	Not cumulatively considerable
Threshold 2: Groundwater Supplies	Less than significant	Not cumulatively considerable
Threshold 3: Site Drainage and Hydrology	Less than significant	Not cumulatively considerable
Threshold 4: Activities in a Flood Hazard, Tsunami, or Seiche Zone	No impact	Not cumulatively considerable
Threshold 5: Water Quality Control Plan or Sustainable Groundwater Management Plan	Less than significant	Not cumulatively considerable

4.9.6.1 Cumulative Threshold 1: Water Quality Standards

The geographic context for the cumulative impact analysis concerning hydrology and water quality is the San Diego HU, in the lower San Diego Hydrologic Area (907.10), and in the Santee Hydrologic Subarea (907.12) of the Basin Plan. Urban development from cumulative projects within the San Diego River HU would increase impervious areas and activities that generate pollutants, and consequently could result in additional water quality impacts from stormwater runoff to receiving waters in the HU. Existing water quality impairments or problems within receiving waters in the San Diego River HU include benthic community effects, cadmium, indicator bacteria, nitrogen, dissolved oxygen, phosphorus, total dissolved solids, and toxicity.

Most future development projects in the San Diego region would be subject to regulation during construction by the Construction General Permit and during design and operation by NPDES Phase I or II post-construction regulations, which would require that low-impact development measures be implemented and source control and nonpoint source BMPs be employed to control potential effects on water quality and that stormwater quality control devices be incorporated into stormwater collection systems to collect sediment and other pollutants. Further, there are several other regional and local initiatives that are being implemented to meet water quality objectives, reduce pollutant loads, address high-priority pollutants and improve surface water quality in impaired waters, such as the San Diego River WMA. The WQIP for the WMA identifies highest priority water quality conditions, strategies to address them, and monitoring plans. The goal of the

WQIP is to further the CWA's objective to protect, preserve, enhance, and restore water quality of the San Diego River watershed. While these efforts are helping to remedy the problem, a significant cumulative water quality impact exists without implementation of the proposed project and is being addressed through existing regulations and programs.

Direct water quality impacts from the implementation of the proposed project would be less than significant because the proposed project is designed to comply with regulations protecting water quality and would not violate of any water quality standards or WDRs or otherwise substantially degrade water quality. Further, other projects in the region are subject to similar regulatory requirements associated with stormwater runoff and there are several ongoing efforts to remedy water quality issues in receiving waters. Thus, the proposed project's contribution would not be cumulatively considerable.

Additionally, the projects listed in Table 4-2, Cumulative Projects, in Chapter 4, Environmental Impact Analysis, have the potential to degrade groundwater resources. However, similar to surface water quality, cumulative projects would have to comply with General Construction Stormwater Permit requirements, including the development and implementation of a SWPPP. The SWPPP must identify BMPs that the discharger would use to protect stormwater runoff from pollutants and the placement of those BMPs. Because other projects in the region are subject to similar federal, state, and local requirements associated with stormwater runoff, cumulatively significant groundwater quality impacts would not occur. Thus, the proposed project would not contribute to a significant cumulative impact associated with conflicts with the Basin Plan. The proposed project's contribution would not be cumulatively considerable.

4.9.6.2 Cumulative Threshold 2: Groundwater Supplies

The geographic context for the cumulative impact analysis concerning hydrology and water quality is the San Diego HU, in the lower San Diego Hydrologic Area (907.10), and in the Santee Hydrologic Subarea (907.12) of the Basin Plan. A significant cumulative impact related to groundwater supplies and recharge would occur if development within the Santee Hydrologic Subarea would increase the amount of impervious surface in the area, which would decrease the amount of recharge received by the groundwater table and decrease groundwater supplies. Therefore, increased impervious areas associated with construction of cumulative development projects would have the potential to result in a significant cumulative impact to groundwater supplies and recharge.

Implementation of the proposed project would increase the amount of impervious surface of the project site. However, the proposed project would include pervious, landscaped areas, allowing groundwater recharge to continue to occur. Runoff from developed areas would drain into the proposed on-site basin system designed to slow peak flow and discharge to rates equal to or less than existing conditions. Hydromodification management would occur through storage of

stormwater within proposed on-site basins, with outlets that regulate the flow rate and duration of stormwater released. Source control and low-impact development measures would be implemented to maximize the amount of Open Space, landscaping, and vegetated swales to slow and absorb runoff, allowing it to infiltrate the ground surface (refer to Worksheet C.4-1 in Appendix J1). Similar to the proposed project, cumulative projects would be required to comply with federal, state, and local regulations to minimize impacts to groundwater recharge. In addition, the City does not rely on groundwater for water supply. As such, development of the proposed project and other cumulative projects would not inhibit groundwater recharge. A significant cumulative impact related to groundwater recharge would not occur. Therefore, the proposed project's contribution would not be cumulatively considerable.

4.9.6.3 Cumulative Threshold 3: Site Drainage and Hydrology

The geographic context for the cumulative impact analysis concerning hydrology and water quality is the San Diego HU, in the lower San Diego Hydrologic Area (907.10), and in the Santee Hydrologic Subarea (907.12) of the Basin Plan. Construction of cumulative projects would involve grading and other earthmoving activities that could result in temporary localized soil erosion. However, these site-specific impacts are not expected to combine with the effects of other regional activities because federal, state and local regulations, including the Construction General Permit and Regional MS4 Permit, govern project design and construction so that projects are designed to reduce stormwater runoff from project sites by promoting infiltration, minimizing impervious, requiring no net increase in flows, and controlling erosion and construction-related contaminants at each construction site. Additionally, all future projects would be required to comply with Chapter 9.06 of the Santee Municipal Code, which requires the implementation of a pollution control plan (City of Santee 2020). In addition, all future projects would be required to comply with the Construction General Stormwater Permit, which requires preparation of a SWPPP. The SWPPP would include a series of specific BMPs to be implemented during construction to address erosion, accidental spills, and the quality of stormwater runoff and have been developed in part to reduce the potential adverse effects associated with site-specific construction activities. Construction-related impacts from cumulative projects would be temporary and short-term, and each project's construction activities would be localized. Therefore, a cumulatively considerable impact associated with site drainage and hydrology would not occur. During operation, the proposed project basins would help reduce flows by approximately 583 cubic feet per second compared to existing conditions. Thus, post-project flows would be released into Sycamore Canyon Creek at a lower rate than existing natural flows. Flows would be treated, detained, and then discharged to their respective discharge location. Future projects would be required to implement site- and project-specific design features that would also be required to regulate the flow rate and duration of stormwater released. In addition, the proposed project's direct impacts would be less than significant. Therefore, the proposed project's contribution would not be cumulatively considerable.

4.9.6.4 Cumulative Threshold 4: Activities in a Flood Hazard, Tsunami, or Seiche Zone

The geographic context for the cumulative impact analysis concerning hydrology and water quality is the San Diego HU, in the lower San Diego Hydrologic Area (907.10), and in the Santee Hydrologic Subarea (907.12) of the Basin Plan. The geographic context for cumulative projects resulting in activities that would have a flood hazard, tsunami, or seiche risk are projects within the City and general vicinity of the project site. Similar to the proposed project, cumulative projects within the City and vicinity of the project site would be located within the same proximity to the Pacific Ocean and would not be subject to a tsunami event. Additionally, due to topographical variations, including a valley located between the City and the San Vicente Reservoir, it is unlikely for cumulative projects to be inundated this reservoir. Further, cumulative projects located in a flood hazard area would have restrictions on development based on state and City regulations. Therefore, cumulative projects would not result in a significant cumulative impact associated with activities in flood hazard, tsunami, or seiche areas. The proposed project would have no impact with regard to flood hazards, tsunami, and seiche hazards. Therefore, the proposed project's contribution would not be cumulatively considerable.

4.9.6.5 Cumulative Threshold 5: Water Quality Control Plan or Sustainable Groundwater Management Plan

The geographic context for the cumulative impact analysis concerning hydrology and water quality is the San Diego HU, in the lower San Diego Hydrologic Area (907.10), and in the Santee Hydrologic Subarea (907.12) of the Basin Plan. Urban development associated with cumulative projects within the San Diego Hydrologic Unit would increase impervious areas and activities that generate pollutants, and consequently could result in additional impacts to receiving waters in the Hydrologic Unit. Most development projects in the San Diego region would be subject to NPDES regulations, which would require site design and source control BMPs to control potential effects on water quality, and the incorporation of stormwater quality control devices into stormwater collection systems to collect sediment and other pollutants. These requirements are uniformly applicable throughout the San Diego region.

Additionally, the City does not rely on groundwater sources for its water supply. Therefore, a significant cumulative impact associated with obstruction of the Basin Plan or a sustainable groundwater management plan impact would not occur. The proposed project would not result in significant direct impacts associated with obstruction of the Basin Plan because it would comply with NPDES permit requirements and Chapter 9.06 of the Santee Municipal Code during construction and preparation of a SWPPP would be required. During operation, the proposed project would incorporate BMPs into project design as well as comply with existing federal, state, and local regulations to protect water quality and ensure project compliance with applicable water quality standards. Additionally, the project site falls outside of the boundaries of the San Diego River Valley Groundwater Basin and no sustainable groundwater management plan has been

prepared for the project site. Therefore, the proposed project's contribution would not be cumulatively considerable.

4.9.7 References

BSI Consultants. 1990. City of Santee Citywide Drainage Study. February. Accessed May 2020. https://www.cityofsanteeca.gov/home/showdocument?id=7161.

California Stormwater Quality Association. 2015. Construction Best Management Practices Handbook. January. Accessed May 2020. https://www.casqa.org/resources/bmp-handbooks.

City of El Cajon, City of La Mesa, City of San Diego, City of Santee, County of San Diego, and California Department of Transportation. 2016. Water Quality Improvement Plan for the San Diego River Watershed Management Area. Prepared by Larry Walker Associates and AMEC. Modeled by Geosyntec Consultants. January.

City of Santee. 2016. City of Santee Best Management Practice Design Manual. February.

City of Santee. 2020. Santee Municipal Code.

DWR (California Department of Water Resources). 2004. California's Groundwater Bulletin 118: San Diego River Valley Groundwater Basin. February 27.

RWQCB (Regional Water Quality Control Board). 2016. Water Quality Control Plan for the San Diego Basin (9). September 8, 1994. Amended May 2016.

This page intentionally left blank.