5.5 HYDROLOGY AND WATER QUALITY

This section of the Draft Environmental Impact Report (EIR) evaluates the potential impacts of the proposed project to hydrology and water quality conditions in the City of Fontana. Hydrology deals with the distribution and circulation of water, both on land and underground. Water quality deals with the quality of surface water and groundwater. Surface water includes lakes, rivers, streams, and creeks; groundwater is under the earth's surface.

- *Geotechnical Feasibility Investigation 11016-11098 Sierra Avenue, Fontana, CA*, Geocon West, Inc., February 28, 2020. (Appendix H)
- *Preliminary Hydrology Study Chaffey College Fontana Campus,* LPA, January 4, 2023. (Appendix I)
- *Preliminary Water Quality Management Plan for Chaffey College Fontana Campus*, LPA, January 6, 2023. (Appendix J)

Complete copies of these studies are included in Appendix H through Appendix J of this Draft EIR.

5.5.1 Environmental Setting

5.5.1.1 REGULATORY BACKGROUND

Federal Regulations

Clean Water Act

The federal Water Pollution Control Act (or Clean Water Act [CWA]) is the principal statute governing water quality. It establishes the basic structure for regulating discharges of pollutants into the waters of the United States and gives the US Environmental Protection Agency (EPA)—or in the case of California, the State Water Board and Regional Water Quality Control Boards—authority to implement pollution control programs. The statute's goal is to restore, maintain, and preserve the integrity of the nation's waters. The CWA regulates direct and indirect discharge of pollutants; sets water quality standards for all contaminants in surface waters; and makes it unlawful for any person to discharge any pollutant from a point source into navigable waters unless a permit is obtained under its provisions. The CWA mandates permits for wastewater and stormwater discharges; requires states to establish site-specific water quality standards; and regulates other activities that affect water quality, such as dredging and the filling of wetlands.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established by the CWA to regulate municipal and industrial discharges to surface waters of the United States, including discharges from municipal separate storm sewer systems (MS4). Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants in the discharge; prohibitions on discharges not specifically

allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

Under the NPDES program, all facilities that discharge pollutants into waters of the United States are required to obtain an NPDES permit. Requirements for stormwater discharges are also regulated under this program. In California, the NPDES permit program is administered by the State Water Resources Control Board through the nine Regional Water Quality Control Boards (RWQCB). The project site lies within the jurisdiction of the Santa Ana RWQCB (Region 8).

National Flood Insurance Program

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program, which provides subsidized flood insurance to communities that comply with FEMA regulations limiting development in flood plains. FEMA also issues Flood Insurance Rate Maps (FIRM) that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection established by FEMA is the 100-year flood event, also described as a flood that has a 1-in-100 chance of occurring in any given year. FEMA mapping of flood hazards that includes the project site was updated in 2008. According to the most recent FIRM that covers the project site (FIRM No. 06071C8666H dated August 28, 2008), the project site is not within a 100-year or 500-year floodplain.

State Regulations

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act (Water Code sections 13000 et seq.) is the basic water quality control law for California. Under this Act, the State Water Resources Control Board (SWRCB) has ultimate control over state water rights and water quality policy. In California, the EPA has delegated authority to issue NPDES permits to the SWRCB. The SWRCB, through its nine RWQCBs carries out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a Water Quality Control Plan or Basin Plan that designates beneficial uses and water quality objectives for the region's surface water and groundwater basins.

SWRCB Construction General Permit

Construction activities that disturb one or more acres of land must comply with the requirements of the SWRCB Construction General Permit (CGP; 2009-0009-DWQ) as amended by 2010-0014-DWQ and 2012-0006-DWQ. Under the terms of the permit, applicants must file Permit Registration Documents (PRD) with the SWRCB prior to the start of construction. The PRDs include a Notice of Intent, risk assessment, site map, Stormwater Pollution Prevention Plan (SWPPP), annual fee, and a signed certification statement. The PRDs are submitted electronically to the SWRCB via the Stormwater Multiple Application and Report Tracking System (SMARTS) website. On September 8, 2022, the SWRCB adopted the revised Statewide CGP that supersede Order 2009-0009-DWQ and its amendments.

Applicants must also demonstrate conformance with applicable best management practices (BMP) and prepare a SWPPP containing a site map that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project site. The SWPPP must list BMPs that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Additionally, the SWPPP must contain a visual monitoring program for all risk levels and a stormwater sampling and analysis program for Risk Levels 2 and 3.

For all sites that are not covered by a Phase I or Phase II MS4 permit, the project must implement post-construction stormwater performance standards. This is applicable for all K-12 schools and community colleges, which includes the proposed project.

SWRCB Trash Amendments

On April 7, 2015, the SWRCB adopted an amendment to the Water Quality Control Plan for Ocean Waters of California to control trash and Part 1, Trash Provisions, of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California. Together, they are collectively referred to as "the Trash Amendments." The Trash Amendments apply to all surface waters of California and include a land-use-based compliance approach to focus trash controls on areas with high trash-generation rates. Areas such as high density residential, industrial, commercial, mixed urban, and public transportation stations are considered priority land uses. There are two compliance tracks for Phase I and Phase II MS4 permittees:

- **Track 1.** Permittees install, operate, and maintain a network of certified full capture systems in storm drains that capture runoff from priority land uses.
- **Track 2.** Permittees must implement a plan with a combination of full capture systems, multi-benefit projects, institutional controls, and/or other treatment methods that have the same effectiveness as Track 1 methods.

The Trash Amendments provide a framework for permittees to implement its provisions. Full compliance must occur within 10 years of the permit, and permittees must also meet interim milestones such as average load reductions of 10 percent per year.

Water Conservation in Landscaping Act of 2006

The Water Conservation in Landscaping Act includes the State of California's Model Water Efficient Landscape Ordinance (MWELO), which requires cities and counties to adopt landscape water conservation ordinances. The MWELO was revised in July 2015 via Executive Order B-29-15 to address the ongoing drought and build resiliency for future droughts. State law requires all land use agencies, which includes cities and counties, to adopt a water efficient landscape ordinance that is at least as efficient as the MWELO prepared by the California Department of Water Resources (DWR). The 2015 revisions to the MWELO improve water conservation in the landscaping sector by promoting efficient landscapes in new developments and retrofitted landscapes. The revisions increase water efficiency by requiring more efficient irrigation systems, incentives for grey water usage, improvements in on-site stormwater capture, and limiting the portion of landscapes that can be covered in

high-water-use plants and turf. New development projects that include landscape areas of 500 square feet or more are subject to the MWELO. This applies to residential, commercial, industrial, and institutional projects that require a permit, plan check, or design review. The previous landscape size threshold for new development projects ranged from 2,500 square feet to 5,000 square feet. The size threshold for rehabilitated landscapes has not changed and remains at 2,500 square feet.

The City of Fontana has enacted these provisions in the Fontana Municipal Code Chapter 28, Article IV, Section 28-98, Water Efficient Landscape Worksheet.

Regional Regulations

Municipal Regional Stormwater Permit

In 2002, the Santa Ana RWQCB issued a NPDES Stormwater Permit and waste discharge requirements (WDR)s (Order No. R8-2002-0012) under the CWA and the Porter-Cologne Act for discharges of stormwater runoff, snowmelt runoff, surface runoff, and drainage within the Upper Santa Ana River watershed in San Bernardino and Riverside counties. The current NPDES MS4 permit (Permit Order No. R8-2010-0036, NPDES Permit No. CAS618036) was issued to the San Bernardino County Flood Control District, the county, and cities, including the City of Fontana, in January 2010. The 2010 MS4 permit expired on January 28, 2015, but remains effective and current, pending issuance of a new MS4 Permit.

Although the proposed project is in the City of Fontana, all California K-12 school districts and community college districts are not currently subject to the requirements of the MS4 Permit. The SWRCB is in the process of expanding the Phase II Small MS4 permit to include school districts and community colleges. Once the amendment is adopted, school districts and community college districts will have five years to comply with the Small MS4 permit.

The new permit will require school districts and community college districts to develop a Stormwater Management Plan that includes: 1) a map of storm water drainage on school properties, 2) identifying areas throughout the district that could generate stormwater pollution, 3) training staff on stormwater BMPs, 4) continuing to implement the SWRCB's Construction General Permit, 5) designing and building new construction to meet the permit requirements for stormwater runoff quality and quantity, and 6) documenting activities and submitting an annual report to the SWRCB.

Prior to issuance of the new Phase II MS4 permit, the proposed project would be required to comply with the provisions of the SWRCB's post-construction stormwater performance standards. Once the new permit is issued, which is anticipated to occur in 2022, it is expected that the school districts and community college districts would have to comply with requirements similar to those specified in Section F.5.g—Post Construction Storm Water Management Program—of the existing Phase II MS4 permit. This provision specifies site design and low impact development design standards, source control measures, and sizing criteria for stormwater retention and treatment.

San Bernardino County Flood Control District

The San Bernardino County Flood Control District (SBCFCD) is the agency responsible for the regional flood control system. It was created in 1939 under State legislation to address severe flooding impacts in San Bernardino County. The SBCFCD has developed an extensive system of dams, debris basins, channels, and storm drains to intercept and direct flood flows through and away from the major developed areas within the county.

The SBCFCD is divided into six zones, with the project site located within Zone 2. The SBCFCD has also prepared numerous master plans of drainage (MPD) with the project site located within South Fontana MPD. The purpose of the MPDs is to evaluate the existing drainage system, identify deficiencies, and recommend improvements and new facilities in an area. New drainage facilities within the SBCFCD's jurisdiction must be designed in accordance with the methodology specified in the *County of San Bernardino Hydrology Manual*, dated August 1986, with the latest addendum issued in April 2010. This typically requires calculation of the runoff volume from the 100-year, 24-hour storm for both existing and proposed conditions. The difference between the runoff volumes is the minimum detention storage volume required for the project site. The preliminary design of stormwater detention at the project site meets these requirements.

City of Fontana

Although the SBCFCD has the responsibility for planning and construction of regional flood control facilities, the City of Fontana has responsibility for designing, constructing, and maintaining local drainage facilities. The Public Works Department maintains the public infrastructure, including storm drains.

Projects within the City of Fontana must also comply with the following requirements of the City's Municipal Code:

- **Chapter 12, *Flood Control*.** This chapter requires payment of fees for constructing drainage facilities. The fees are in accordance with those specified in area flood control plans and are payable to the City at the time of issuance of the building or grading permit.

- **Chapter 23, Article IX. *Preventing Discharge of Pollutants into Storm Drains*.** The purpose of these regulations is to protect and enhance the water quality of watercourses, water bodies, groundwater, and wetlands in a manner consistent with federal, state, and local laws and regulations, and to implement the requirements of the area-wide NPDES permit.

- **Chapter 28, Article IV. *Landscaping and Water Conservation*.** This chapter requires a grading plan submitted to the City that identifies soil erosion, runoff and waste water BMPs that will be used during the construction phase of the project. This chapter also establishes water efficient landscape regulations that are at least as efficient in conserving water as the State MWELO.

5.5.1.2 EXISTING CONDITIONS

Regional and Local Drainage

The project site is in the Santa Ana River Watershed in San Bernardino County and more specifically is in the East Etiwanda Creek subwatershed (USGS 2021). The project site is currently undeveloped. According to the Preliminary Hydrology Report included as Appendix I to this Draft EIR, the project site's drainage is currently divided into four basins. Basins A1 and A2 are approximately half of the project site that surface flow to the west edge and then towards the south. Basins B1 and B2 are the other half of the project site that surface flow to the south. Stormwater from basins A1, A2, B1, and B2 confluence at the offsite detention basin in the adjacent property to the south at Point of Interest #1 as shown on Figure 5.5-1, *Existing Drainage Conditions*. The adjacent property to the south is approximately 4.7 acres and is currently a detention basin. However, entitlement for a residential development project has been approved (State Clearinghouse #2022100111), reducing the size of the detention basin to approximately one-third of the existing size. After the confluence at Point of Interest #1, the offsite detention basin has overflow release into a 54-inch RCP storm drain line on Sierra Avenue. Stormwater conveyance continues southerly via underground storm drain system to connect to an existing stormwater line along Jurupa Avenue and ultimately indirectly discharges to the Declez Channel. The Declez Channel flows to the San Sevaine Channel, then Santa Ana River, Reach 3, then Reach 2, then Reach 1 before ultimately discharging into the Pacific Ocean.

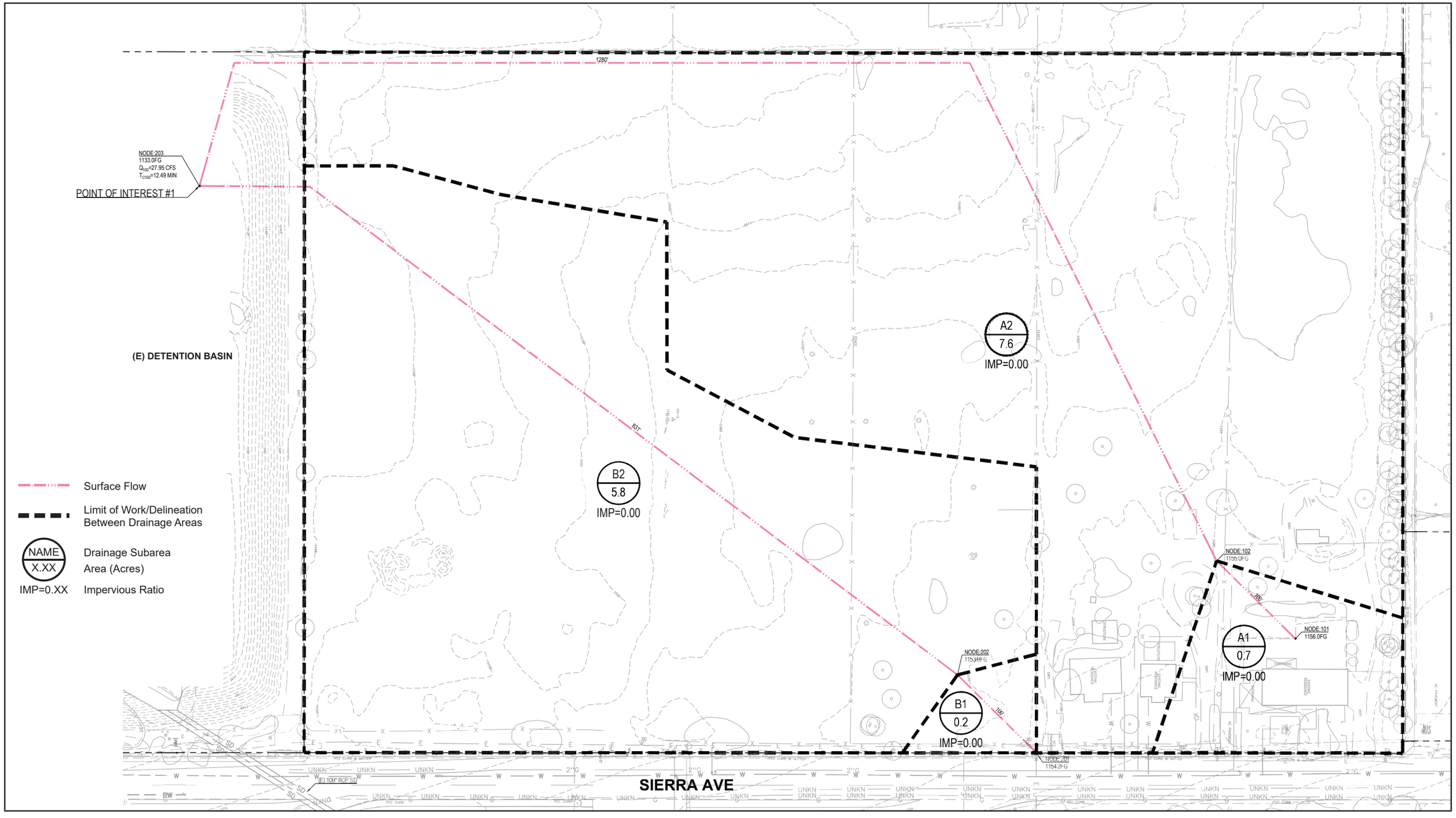
As is the case for most of the City, the project site is exempt from hydrologic conditions of concern requirements. This is primarily because most areas, including the project site, drain to adequate sumps (e.g., Prado Dam; Santa Ana River; or other lake, reservoir, or naturally erosion-resistant feature) or are diverted to storage facilities (San Bernardino 2021).

Groundwater

The project site in within the eastern portion of the Chino Groundwater Basin, which is the main source of water for the Fontana Water Company (FWC 2021). The FWC would supply potable water to the project site. The communities in the Chino Groundwater Basin use a combination of groundwater, surface water, recycled water and imported water to meet water demands. Groundwater accounts for approximately 50 percent of FWC's total water supplies (FWC 2021). There are no groundwater production wells on the project site.

The 2020 geotechnical report by Geocon West reported no groundwater was encountered at the project site at a maximum depth of 20.5 feet below ground surface (bgs), and groundwater levels for the Chino Basin groundwater aquifer are typically at depths greater than 200 feet bgs.

Figure 5.5-1 - Existing Drainage Conditions



Source: LPA, 2022

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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Water Quality

Surface Water Quality

As previously stated, stormwater runoff from the project site would be directed to the City's storm drain system with ultimate discharge into the Santa Ana River, Reach 3, which is approximately 5.6 miles south of the site. The Santa Ana RWQCB monitors surface water quality through implementation of the Basin Plan and designates beneficial uses for surface water bodies and groundwater within the region. The designated beneficial uses for water bodies and groundwater in the vicinity of the project site are listed in Table 5.5-1.

Table 5.5-1 Designated Beneficial Uses of Water Bodies in Vicinity of Project Site

Water Body	Designated Beneficial Use
Surface Water	
Santa Ana River, Reach 3	AGR, GWR, REC-1, REC-2, WARM, WILD, RARE, SPAWN
Groundwater	
Santa Margarita Hydrologic Unit - Murrieta	MUN, AGR, IND, PROC

Source: RWQCB 1995. Water Quality Control Plan for the Santa Ana River Basin (Basin Plan).
Municipal and Domestic Water Supply (MUN), Agricultural Supply (AGR), Industrial Service Water Supply (IND), Industrial Process Water Supply (PROC), Groundwater Recharge (GWR), Contact Water Recreation (REC-1), Non-contact Water Recreation (REC-2), Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD)., Rare, Threatened or Endangered Species (RARE), Spawning, Reproduction and Development (SPWN)

In addition to the establishment of beneficial uses and water quality objectives, another approach to improving water quality is a watershed-based methodology that focuses on all potential pollution sources and not just those associated with point sources. If a body of water does not meet established water quality standards under traditional point source controls, then it is listed as an impaired water body under Section 303(d) of the CWA. For 303(d) listed water bodies, a limit is established, which defines the maximum amount of pollutants (or TMDL) that can be received by that water body. Santa Ana River, Reach 3 is listed as an impaired water body. The pollutants of concern and the status of TMDL implementation are listed in Table 5.5-2. If pollutants of concern are generated on-site and are impairments downstream (TMDLs or 303(d) listings), then BMPs that have medium or high effectiveness in reducing pollutants of concern should be implemented on the project site.

Table 5.5-2 Receiving-Water Summary

Watershed Description	303(d) Listed Impairments	Applicable TMDLs
Santa Ana River Watershed - Reach 3	Copper, Lead, and Indicator Bacteria	Nitrate and pathogens

Source: Fontana 2021.

Groundwater Quality

Several Chino Basin groundwater wells are currently not in service due to water quality issues (FWC 2021). Some wells have elevated perchlorate and nitrate levels. Wells that have concentrations that exceed drinking

water standards are either taken out of service or the water from the affected wells is blended with groundwater from other wells and/or imported water to meet drinking water standards. There are no active remediation or leaking underground storage tank cases in close proximity to the site that could result in groundwater impairment, according to the SWRCB's GeoTracker database (SWRCB 2021).

Designated Flood Zones

Flood hazard zones are areas subject to flood hazards that are identified on an official FIRM issued by FEMA. Flooding can be the result of intense rainfall or inadequate drainage. Areas within a 100-year floodplain have a 1 percent probability of flooding in a given year. As stated in Section 5.5.1.1, *Regulatory Background,* the project site is not within a 100-year or 500-year floodplain, according to the most recent FIRM that covers the project site (FIRM No. 06071C8666H dated August 28, 2008). The existing detention basin south of the site is within a 100-year flood zone (Zone A).

Dam Inundation

The project site is also not within a dam inundation zone or in an area of potential flooding from debris basins (San Bernardino County 2019). There also are no nearby aboveground water storage tanks that could cause flooding in the unlikely event of a tank failure. Therefore, the proposed project would not expose people or structures to flooding hazards from these sources.

Tsunami and Seiches

A tsunami is a sea wave caused by a sudden displacement of the ocean floor, most often due to earthquakes. The project site is not within a tsunami inundation zone. It is approximately 40 miles inland from the Pacific Ocean and is at an elevation of approximately 1,050 feet above mean sea level; therefore, no tsunami flood hazard impacts would occur.

A seiche is a surface wave generated in a closed or partially closed body of water that can be compared to the back-and-forth sloshing in a bathtub. Seiches can be created by winds, earthquakes, or tsunamis. Bodies of water such as bays, harbors, lakes, reservoirs, or large aboveground storage tanks can experience seiches. No large water bodies or storage tanks are near the project site; therefore, no seiche flood hazard impacts would occur.

5.5.2 Thresholds of Significance

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

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

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

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

i) Result in a substantial erosion or siltation on- or off-site.

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

iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

iv) Impede or redirect flood flows.

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

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

5.5.3 Plans, Programs, and Policies

Plans, programs, and policies (PPP), including applicable regulatory requirements and project design features for air quality, are identified below.

PPP HYD-1 The proposed project is required to be developed in compliance with the following state, regional, and local regulations concerning grading, stormwater, and water quality control:

State

- Order No. 2009-0009-DWQ, Statewide General Construction Permit, State Water Resources Control Board, as amended by 2010-0014-DWQ and 2012-0006-DWQ and Storm Water Pollution Prevention Plan (SWPPP) Requirements
- Title 24 Green Building Standards Code

Regional

- San Bernardino County Hydrology Manual and Addendum

Local

- City of Fontana Storm Drain Construction Standards and Municipal Code requirements

5.5.4 Environmental Impacts

5.5.4.1 IMPACT ANALYSIS

It is anticipated that the stormwater from the project site would be collected on-site and treated to the best extent practical before being conveyed to the City's storm drain system. The proposed project would connect directly to the proposed City of Fontana 108-inch RCP storm drain that would be constructed on the adjacent

housing development property to the south as shown on Figure 5.5-2, *Proposed Drainage Conditions*. With project implementation, the site drainage would be divided into seven basins, Basins A1 through A6, and B1. Basins A1 through A6 would confluence with Basin B1 at the onsite underground detention system and then connect to the proposed City of Fontana 108-inch RCP storm drain line in the adjacent housing development property to the south. Similar to the existing drainage pattern, Point of Interest #1 is at the 108-inch storm drain that eventually outlets to the resized detention basin to the south. The overflow from the chamber system would then be conveyed to the Declez Channel along Jurupa Avenue via a new underground storm drain pipeline, then to Declez Basin. The Declez Basin is tributary to the Santa Ana River Reach 3, and runoff ultimately would flow to the Pacific Ocean (Fontana 2021).

The following impact analysis addresses thresholds of significance related to hydrology and water quality. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.5-1: The proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. [Threshold HYD-1]

Urban runoff from storms or nuisance flows (runoff during dry periods) from development projects can carry pollutants to receiving waters. Runoff can contain pollutants such as oil, fertilizers, pesticides, trash, and sediment. This runoff can flow directly into local streams or into storm drains and continue through pipes until it is released untreated into a local waterway and eventually the ocean. Untreated stormwater runoff degrades water quality in surface waters and groundwater and can affect drinking water, human health, and plant and animal habitats.

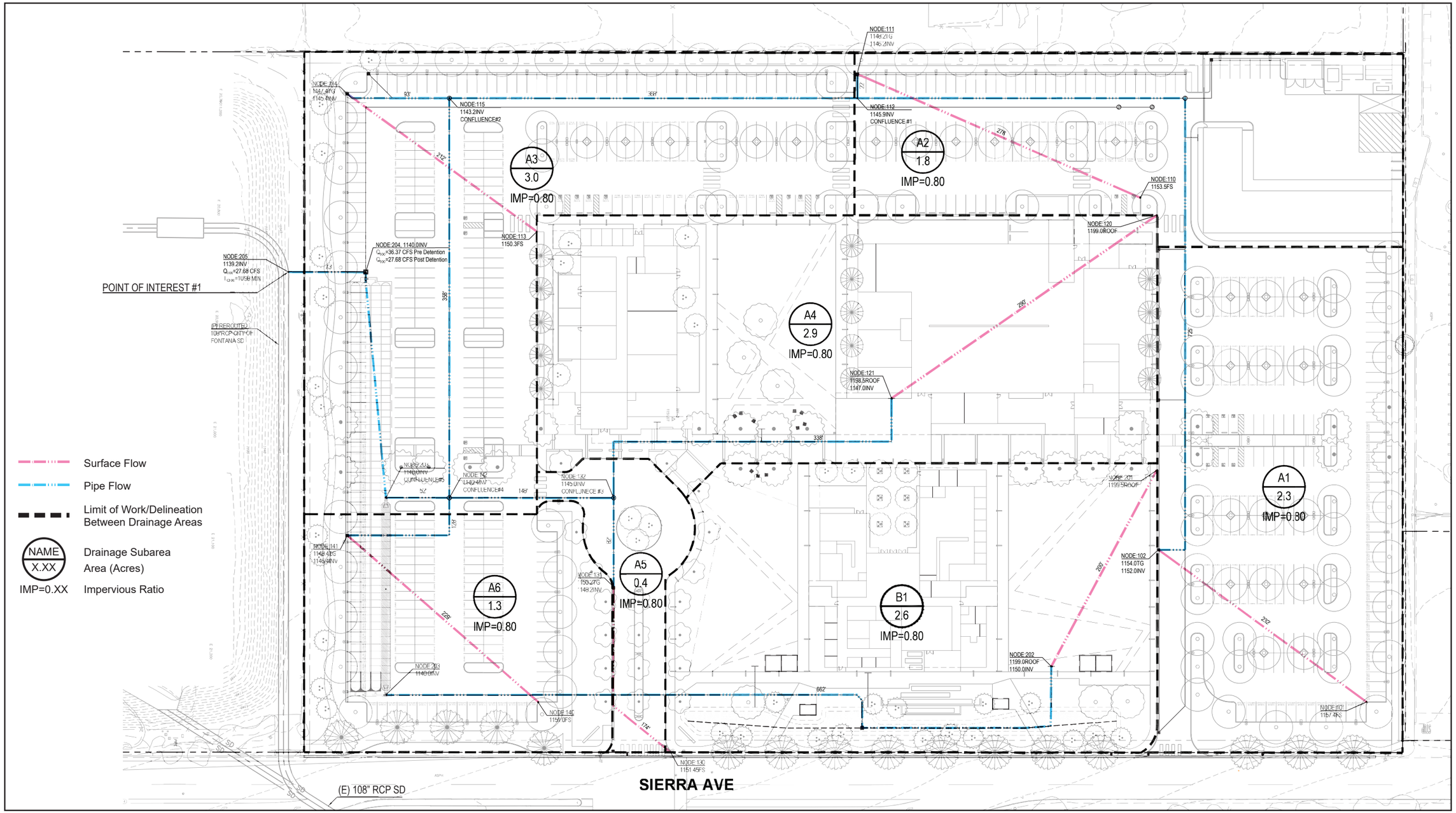
The construction and operational phases of the proposed project could have the potential to impact water quality. Construction activities may impact water quality due to sheet erosion of exposed soils. The operational phase would alter the existing land uses of the project site and would consequently alter the anticipated and potential pollutant sources at the site. The following is a discussion of the potential impacts that the construction and operational phases of the proposed project could have on water resources and quality.

Construction Activities

Clearing, grading, excavation, and construction activities associated with the proposed project may impact water quality through soil erosion and increasing the amount of silt and debris carried in runoff. Additionally, the use of construction materials such as fuels, solvents, and paints may present a risk to surface water quality. Finally, the refueling and parking of construction vehicles and other equipment on-site during construction may result in oil, grease, or related pollutant leaks and spills that may discharge into the storm drain system.

To minimize these potential impacts, the proposed project would be required to comply with the NPDES Construction General Permit (CGP) as well as prepare a SWPPP that requires the incorporation of BMPs to control sedimentation, erosion, and hazardous materials contamination of runoff during construction. The SWRCB mandates that projects that disturb one or more acres of land must obtain coverage under the Statewide CGP. The CGP also requires that prior to the start of construction activities, the project applicant

Figure 5.5-2 - Proposed Drainage Conditions



Source: LPA, 2022

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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must file PRDs with the SWRCB, which includes a Notice of Intent, risk assessment, site map, annual fee, signed certification statement, SWPPP, and post-construction water balance calculations. The construction contractor is required to maintain a copy of the SWPPP on-site at all times and implement all construction BMPs identified in the SWPPP during construction activities. Prior to the issuance of a grading permit, the project applicant is required to provide proof of filing of the PRDs with the SWRCB, which include preparation of SWPPP.

The SWPPP must describe construction BMPs that address pollutant source reduction and provide measures/controls to mitigate potential pollutant sources. These include, but are not limited to:

- Erosion controls (e.g., earth dikes and swales, mulching, slope drains, compost blankets)
- Sediment controls (e.g., silt fence, sediment trap, sandbag or straw bale barriers)
- Tracking controls (e.g., stabilized construction entrance/exit, tire wash)
- Nonstorm water management (e.g., dewatering practices, vehicle and equipment cleaning)
- Materials and waste management (e.g., material storage, hazardous waste management, soil management)
- Good housekeeping practices

Submittal of the PRDs and implementation of the SWPPP and its associated BMPs throughout the construction phase of the proposed project will address anticipated and expected pollutants of concern due to construction activities. The proposed project would comply with all applicable water quality standards and waste discharge requirements.

Operational Phase

Once the proposed project has been constructed, urban runoff could include a variety of contaminants that could impact water quality. Runoff from buildings and parking lots typically contain oils, grease, fuel, antifreeze, byproducts of combustion (such as lead, cadmium, nickel, and other metals), as well as fertilizers, herbicides, pesticides, and other pollutants. Precipitation at the beginning of the rainy season may result in an initial stormwater runoff (first flush) with high pollutant concentrations.

The District is not regulated under the County MS4 permit, and the Phase II Small MS4 permit for K-12 school districts and community colleges has not yet been issued by the SWRCB. In the interim, the District is required to comply with the post-construction performance standards under the SWRCB's General Construction Permit (GCP). A Preliminary Water Quality Management Plan (PWQMP) (included as Appendix J to the Draft EIR) has been prepared in compliance with the San Bernardino County Stormwater Program, which is more stringent than the SWRCB;s GCP. The following is a discussion of site-design, source-control, and treatment-control BMPs from the PWQMP that will be incorporated into the proposed project.

Site Design BMPs

Site design BMPs would be incorporated into the project's design to reduce the potential impacts on surface and groundwater quality. These may include, but are not limited to, maximizing pervious areas, minimizing directly connected impervious areas, use of on-site ponding areas (i.e., at-grade detention basins), constructing hardscape with permeable materials, and implementing hydrologically functional landscape design.

Site design BMPs and features that have been incorporated into the Master Plan for this campus include:

- Minimize impervious areas: Proposed design assumed 80 percent imperviousness, where applicable planting and trees have been added throughout the site.
- Maximize natural infiltration capacity: Design proposes buildings to be in areas outside of high infiltration rates.
- Preserve existing drainage patterns and time of concentrations: The poste development condition will have relatively the same drainage pattern and depression points compared to the pre-developed condition.
- Disconnect impervious areas: Several buildings roof drains allow runoff to permeable areas.
- Re-vegetate disturbed areas: Any impervious area will be stabilized with landscaping cover.
- Minimize unnecessary compaction in stormwater retention/infiltration basin/trench areas: Landscaping areas will be staked off after rough grading has been completed to prevent excess compaction.
- Incorporate trees, open space, and landscaping to mitigate urban heat island impacts.
- Include mostly native plants and drought-tolerant plants in landscaping plans.
- Use of effective irrigation systems to minimize water usage.

Source Control BMPs

Source control BMPs effectively minimize the potential for typical urban pollutants to contact stormwater, thereby limiting water quality impacts downstream. A variety of source control BMPs would be incorporated into the proposed project and implemented throughout the operation of the campus. The applicable source control BMPs are listed below in Table 5.5-3, Source Control BMPs, and in Form 4.1-1, Non-Structural Source Control BMPs, and Form 4.1-2, Structural Source Control BMPs, of the PWQMP.

Table 5.5-3 Source Control BMPs

ID	Name	Description of BMP Implementation
Non-Structural Source Control BMPs		
N1	Education of Property Owners, Tenants and Occupants on Stormwater BMPs	General information shall be provided to tenants on maintenance practice that involves the protection of stormwater.
N2	Activity Restrictions	Tenants or occupants shall not be allowed to discharge chemicals, chemical residues, wastewater or other prohibited discharges listed in the City of Fontana stormwater ordinance.
N3	Landscape Management BMPs	Maintenance shall be conducted to ensure the irrigation system is functioning efficiently and repaired as needed. Adjust the irrigation heads and system run times to prevent overwatering, overspray, or run-off from landscaped areas. Mowing and trimming waste shall be properly disposed of and fertilizer and pesticides shall be used in limited amounts.
N4	BMP Maintenance	The owner shall inspect BMP's for standing water within 48 hours after of storm events.
N6	Local Water Quality Ordinances	Property Owner shall ensure tenants comply with the City of Fontana Storm Water Ordinance through the operation and maintenance of BMP's.
N7	Spill Contingency Plan	The Property Owner shall develop a spill contingency plan which mandates stockpiling of cleanup materials, notification of responsible agencies, disposal of cleanup materials, and documentation.
N10	Uniform Fire Code Implementation	The project will be developed and operated in accordance with Article 80 of the Uniform Fire Code.
N11	Litter/Debris Control Program	Property owner shall implement a trash management and litter control procedure, aimed at reducing pollution of stormwater. They may contract with their landscape maintenance firm to provide this service during regularly scheduled maintenance, which should consist of litter patrol, emptying of trash receptacles, and noting trash disposal violations by tenants.
N12	Employee Training	The property owner shall develop an education program to train future employees in good housekeeping practices for the protection of stormwater
N14	Catch Basin Inspection Program	The on-site catch basins shall be inspected monthly during the rainy season and before/after each storm to ensure proper operation.
N15	Vacuum Sweeping of Private Streets and Parking Lots	The paved areas shall be swept and cleaned monthly.
N17	Comply with all other applicable NPDES permits	The developer shall comply with the California Statewide General Construction Storm Water Permit.
Structural Source Control BMPs		
S1	Provide storm drain system stenciling and signage	Storm drain stencils are highly visible source control messages placed directly adjacent to inlets. Stencils shall include prohibitive language such as "NO DUMPING – DRAINS TO OCEAN" and graphical icons to discourage illegal dumping. Owner shall maintain legibility of stencils and signs.
S2	Design and construct outdoor material storage areas to reduce pollution introduction	Hazardous material storage areas were designed to properly store hazardous materials in an enclosure that prevents contact to storm water.
S3	Design and construct trash and waste storage areas to reduce pollution introduction	Trash enclosures were designed to not allow run-on from adjoining areas and are walled to prevent off-site transport of trash. There is also a solid roof to prevent direct precipitation.
S4	Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control	Owner shall utilize rain shutoff valves to prevent irrigation after precipitation.

Table 5.5-3 Source Control BMPs

ID	Name	Description of BMP Implementation
S5	Finish grade of landscaped areas at a minimum of 1-2 inches below top of curb, sidewalk, or pavement	Landscaped areas shall be 1-2 inches below top of curb, sidewalk, or pavement.
S6	Protect slopes and channels and provide energy dissipation	All slopes shall be hard lined, rip-rapped or vegetated to provide erosion protection and prevent sediment transport.

Source: LPA 2023b.

Treatment Control BMPs

Treatment control BMPs remove anticipated pollutants of concern from on-site runoff. They can range from natural treatment systems such as vegetated swales, detention basins, and constructed wetlands, to proprietary control measures. The proposed project has been designed to minimize impacts to hydrology and water quality by creating underground detention basins and bioretention planters with underdrains to reduce peak flows and treat stormwater prior to discharge into the City's storm drain system. Storm water tributary to the northern, western, and southern portions of the project site would receive treatment via drywells along the western drive aisle. A bioretention planter with underdrains would be provided in the frontage along Sierra Avenue and stormwater tributary to the eastern portion of the site would be in this bioretention planter. Figure 5.5-3, *Preliminary WQMP Exhibit*, illustrates the drainage areas to be treated with the drywells and bioretention planters with underlain. The soil beneath the site is classified as Type A, which is conducive to infiltration.

These treatment control BMPs are designed to provide preliminary water quality treatment through the settling of sediments and pollutants and detain peak flows prior to discharge into the City's storm drain system. In addition, landscaping for the project would provide infiltration from impervious surfaces. The maintenance requirements, inspection schedule, and maintenance responsibilities for the stormwater treatment systems would also be provided by the District.

Furthermore, as part of the statewide mandate to reduce trash in receiving waters, the District would adhere to the requirements of the SWRCB Trash Amendments. The requirements include the installation and maintenance of full-capture trash screening devices at curb inlets, grate inlets, and catch basin inlets. The trash screening devices must be certified by the SWRCB. With the implementation of the BMP features described in PWQMP (included as Appendix J) in compliance with State, County, and local regulations and code requirements, the proposed project would have a less than significant impact on surface or groundwater quality during the operational phase.

Level of Significance Before Mitigation: Less than significant impact.

Figure 5.5-3 - Preliminary WQMP Exhibit

Pervious Landscape Area

Bioretention with Underdrains

Proposed Building

Surface Flow Direction

Storm Drain Flow Direction

NAME / X.XX — Drainage Subarea Area (Acres)

IMP=0.XX — Impervious Ratio

STRUCTURAL BMPs

01 ADS Stormtech MC-7200 Infiltration Chambers Tributary Area = 14,000 SF

02 Underground Detention Basin with Underdrains Tributary Area = 5,180 SF

03 Maxwell Drywells Tributary Area = 12.57 SF

NON-STRUCTURAL SOURCE CONTROL BMPs

N3 Common Area Landscpe Management

N4 BMP Maintenance

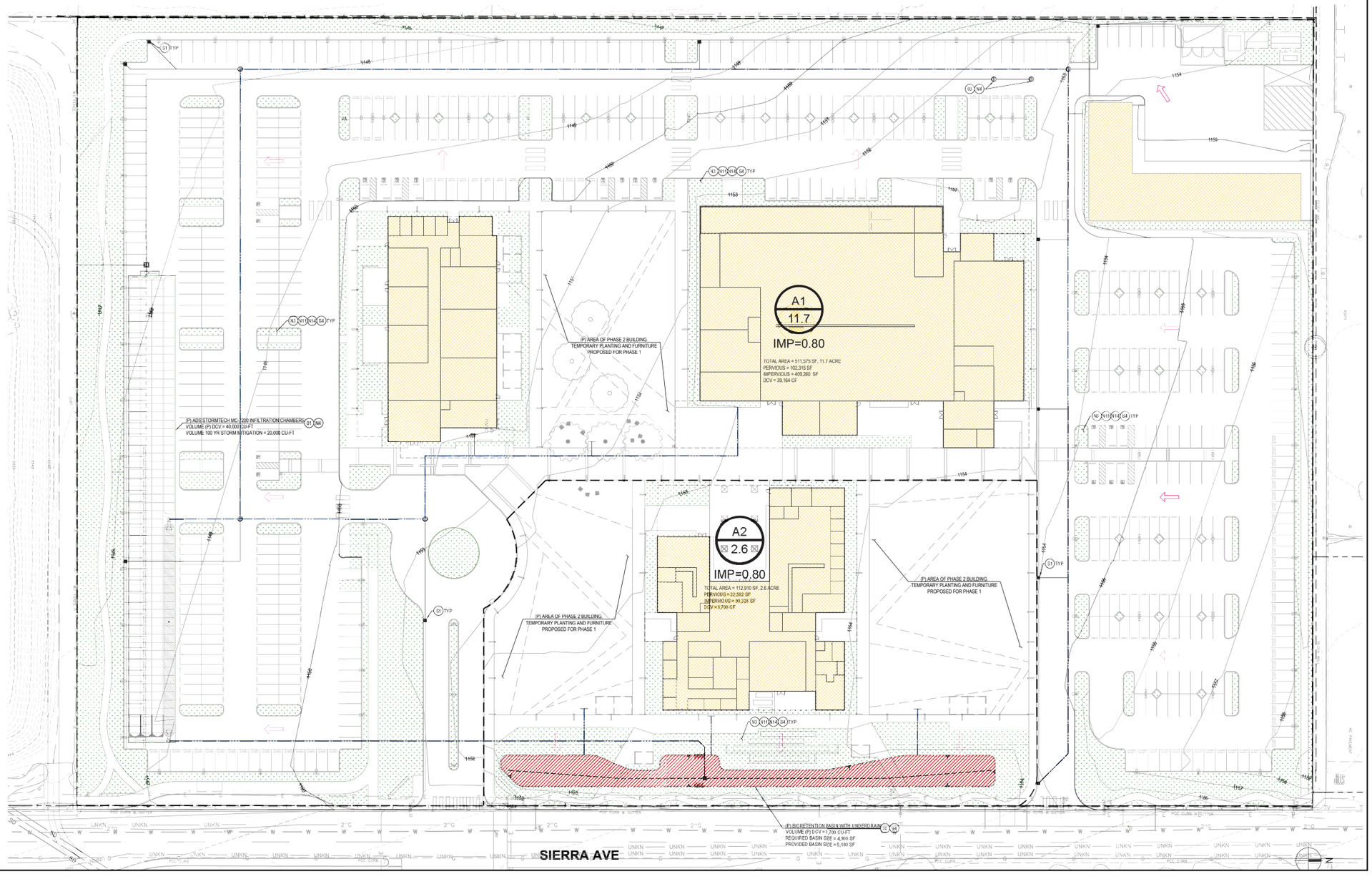
N11 Common Area Litter Contol

N14 Common Area Cath Basin Inspection

STRUCTURAL SOURCE CONTROL BMPs

S1 Storm Drain Stenciling

S2 Efficient Irrigation



0 80
Scale (Feet)

Source: LPA, 2022

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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Impact 5.5-2: The proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. [Threshold HYD-2]

The proposed project would result in a significant impact if it would substantially deplete groundwater supplies or interfere substantially with groundwater recharge. Development of the proposed project would result in an increase in impervious surfaces, reducing the existing pervious surface of disturbed native soil. This could result in a decrease in groundwater recharge to the Chino Groundwater Basin.

The 2020 geotechnical report by Geocon West reported no groundwater was encountered at the project site at a maximum depth of 20.5 feet bgs, and groundwater levels for the Chino Basin aquifer are typically at depths greater than 200 feet bgs.

The proposed project would result in an increase in water demand but would not involve the extraction or installation of any groundwater wells on the property. The project would be served by the FWC, which uses a combination of surface water, local groundwater, and imported Metropolitan District water to supply its customers. Groundwater accounts for approximately 50 percent of FWC's total water supplies and is pumped from FWC owned wells in the underlying Chino Basin, Rialto-Colton Basin, and Lytle Basin (FWC 2021). The Chino Basin is the main source of water for FWC and is an adjudicated basin. According to DWR, the Chino Basin has not been identified as being in critical condition of overdraft. FWC receives groundwater from 12 active Chino Basin wells, with an additional well drilled in 2018 which is in the process of being placed into service.

Based on FWC's 2020 Urban Water Management Plan (UWMP), no adverse impacts to groundwater resources were forecast to occur from implementing the approved land uses anticipated as part of the buildout of the Fontana General Plan. The zoning designation for the area including the project site is WMXU-1, which is Walkable Mixed-Use Corridor & Downtown. This zoning designation was considered in the projected future water demand in the 2020 UWMP and would typically result in a higher water demand than an institutional land use (such as this proposed project) since it includes residential housing. The FWC 2020 UWMP states that there are sufficient water supplies to meet demands in their service area in normal, single-dry-year, and multiple-dry-year conditions through 2045. The proposed project would also include sustainable design features that conserves water and the District would be partnering with FWC in reducing its reliance on water resources. Therefore, the proposed project would not adversely impact groundwater supplies and with the implementation of below-grade and at-grade detention basins that promote infiltration and groundwater recharge, the potential groundwater impacts would be less than significant.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.5-3: 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 which would result in a substantial erosion or siltation on- or off-site. [Threshold HYD-3.i]

The proposed project would increase impervious surfaces, which in turn would increase stormwater runoff and peak discharges with the potential to cause erosion and siltation. The proposed project would not involve the alteration of any natural drainage channels or any watercourse. The project drainage would include below-grade and at-grade detention basins and a new on-site storm drain system to connect to the City's existing storm drain system.

Most of the potential erosion and siltation impacts would occur during the construction phase (e.g., grading, clearing, excavating, and cut-and-fill activities) of the proposed project. During construction, the project site would be cleared of vegetation in preparation for grading, which would expose loose soil to potential wind and water erosion. If not controlled, the transport of these materials to local waterways would temporarily increase suspended sediment concentrations and release pollutants attached to sediment particles into local waterways. As previously stated, the project would be required to submit PRDs and a SWPPP to the SWRCB for approval prior to the commencement of construction activities. The SWPPP would describe the BMPs to be implemented during the project's construction activities, including:

- Minimize disturbed areas of the site.
- Preserve existing vegetation to the maximum extent practicable.
- Revegetate exposed areas as quickly as possible.
- Install on-site sediment basins to prevent off-site migration of erodible materials, as needed.
- Install velocity dissipation devices at outlets of sediment basins.
- Implement dust control measures, such as silt fences and regular watering of areas.
- Stabilize construction entrances/exits.
- Install storm drain inlet protection measures.
- Install sediment control measures along the site, such as silt fences or gravel bag barriers.

The operational phase of the project would contain a number of features to reduce the impact of erosion and siltation. The site design, source control, and treatment control BMPs for the operational phase would include the following:

- Control peak runoff through the installation of on-site below-grade and at-grade detention basins.

- Use native or drought-tolerant vegetation and shrubs in landscaped areas to minimize water usage and reduce stormwater flows.

BMPs that would be included in the SWPPP and during the operational phase are discussed in additional detail under Impact 5.5-1. Implementation of the project's proposed construction phase and operational phase BMPs would ensure that erosion and siltation impacts would be less than significant.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.5-4: 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 which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. [Threshold HYD-3.ii]

The project site is currently undeveloped and is 100 percent pervious with a 100-year peak flow rate of 27.95 cubic flow per second (cfs) as shown in Table 5.5-4, *Existing and Proposed Project Site Flow Rate*. The proposed project would be designed to be approximately 80 percent impervious and provide stormwater detention facilities as shown on Figure 5.5-3, which would attenuate the 100-year peak flow rates from the project site to 27.68 cfs. Therefore, the proposed project would result in a net reduction of 100-year peak flow rates of 0.27 cfs. And as shown on Figures 5.5-1 and 5.5-2, which illustrate the existing and proposed drainage patterns of the project site respectively, the proposed project would not substantially alter the existing drainage pattern of the site or area. As with the existing conditions, the on-site stormwater would be conveyed to the adjacent detention basin to the south, which would then be directed to the City's existing drainage system along Jurupa Avenue, then to the Declez Channel.

Table 5.5-4 Existing and Proposed Project Site Flow Rate

Basin ID	Basin Acreage	Percent Impervious	Tc (Min)	Q_{100} (cfs)
Existing Flow Rate				
A1	0.7	0%	7.72	2.49
A2	7.6	0%	12.49	20.87
B1	0.2	0%	9.27	0.62
B2	5.8	0%	26.59	8.27
Total*	**14.3**	**N/A**	**12.49**	**27.95**
Proposed Flow Rate				
A1	2.3	80%	10.17	6.88
A2	1.8	80%	9.95	5.47
A3	3.0	80%	9.43	9.46
A4	2.9	80%	16.17	6.19
A5	0.4	80%	8.47	1.36
A6	1.3	80%	10.44	3.82
B1	2.6	80%	12.94	6.54
Total*	**2.4**	**N/A**	**10.98**	**27.68**

Source: LPA 2023a.
* Total encompasses peak flow Q.

The proposed project would not involve the alteration of any natural drainage or watercourse. With the implementation of the site BMPs as described under Impact 5.5-1 above and the PWQMP included as Appendix J to this Draft EIR, the proposed project would not substantially increase the rate or amount of surface runoff in a manner that would cause flooding. Therefore, impacts related to stormwater drainage and flooding are less than significant.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.5-5: 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 which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. [Threshold HYD-3.iii]

As stated in the previous impact discussions, an increase in impervious surfaces with development of the proposed project could result in increases in stormwater runoff, which in turn could exceed the capacity of the existing or planned storm drain systems.

The Master Plan proposes to install drywells, underground chamber system, and a bioretention basin to reduce peak flows and treat stormwater prior to discharge to the City's existing drainage system. The current plan is to detain runoff on-site, treat and allow infiltration, and discharge excess water from the underground chamber system directly to the City's new 108-inch RCP south of the project site. All treatment BMPs would be designed to meet San Bernardino County Hydrology Manual sizing standards. In addition, the District would submit a hydrology study to the City when designing offsite improvements. California Government Code Section 53097 requires school districts to comply with city or county ordinances regulating drainage improvements and conditions as they relate to design and construction of onsite improvements that affect drainage. The hydrology study would include calculations to show that post-development flow rates do not substantially differ from pre-development flow rates and there are no hydromodification impacts. Additionally, the hydrology study would include calculations regarding the potential flow rates from the site into the City's storm drain system and demonstrate that these flows would not exceed the carrying capacity of the storm drain.

The project would not create substantial additional sources of polluted runoff. During the construction phase, the project would be required to prepare a SWPPP that includes erosion controls, thus limiting the discharge of pollutants from the site. During operation, the Project would implement low-impact development and BMP measures that minimize the amount of stormwater runoff and associated pollutants.

With implementation of City and County regulatory requirements, the project would not substantially increase the rate or amount of stormwater runoff in a manner that would cause flooding. Therefore, stormwater runoff would not exceed the capacity of existing or planning storm drain facilities.

Level of Significance Before Mitigation: Less than significant impact.

Impact 5.5-6: 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 which would substantially increase the rate or amount of surface runoff in a manner which would Impede or redirect flood flows. [Threshold HYD-3.iv]

As discussed in Section 5.5.1.2, *Existing Conditions*, the project site is not located within a 100-year flood zone mapped by FEMA nor a dam inundation zone. Therefore, the proposed project would not impede or redirect flood flows.

Level of Significance Before Mitigation: No impact.

Impact 5.5-7: The proposed project would not risk release of pollutants due to project inundation in a flood hazard, tsunami, or seiche zone. [Threshold HYD-4]

As discussed in Section 5.5.1.2, *Existing Conditions*, the project site is not located within a 100-year flood zone nor a dam inundation zone. Additionally, the project is over 40 miles inland from the Pacific Ocean so a tsunami would not impact the site. There are no large water bodies in the vicinity of the project that could trigger a seiche. Therefore, the project would not risk pollutant release due to project inundation in a flood hazard, tsunami, or seiche.

Level of Significance Before Mitigation: No impact.

Impact 5.5-8: The proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. [Threshold HYD-5]

The proposed project would not conflict or obstruct with implementation of a water quality control plan or a sustainable groundwater management plan. The project construction would be subject to the Statewide CGP and implementation of BMPs specified in the SWPPP. This would minimize the potential for erosion or siltation impacts to occur that could impact receiving waters. Also, the installation of underground chamber system, drywells, and bioretention planters would improve the water quality of stormwater by physical filtration of sediment and solids and biological activity to remove pollutants. Therefore, the project would comply with the Santa Ana River Basin Plan.

Because the Type A soils at the project site are conducive to infiltration, the underground chamber system has the capability to contribute to groundwater recharge. Although the project would be connected to the FWC's water supply system, which includes groundwater as a significant water source, the 2020 UWMP states that there is sufficient water available to meet demand for normal, single-dry year, and multiple-dry years through 2045. Also, the Chino Groundwater Basin is not in critical overdraft, according to DWR. Therefore, the project would not obstruct or conflict with the RWQCB's Basin Plan or any groundwater management plan, and impacts would be less than significant.

Level of Significance Before Mitigation: Less than significant impact.

5.5.5 Cumulative Impacts

Cumulative impacts refer to incremental effects of an individual project when viewed in connection with the effects of past projects, current projects, and probable future projects. The cumulative impact area considered for this project is the Santa Ana River Watershed. This is an area of intense urban development, and many projects are being implemented and planned within the watershed.

As with the proposed project, future projects in the City of Fontana and within the Santa Ana River Watershed would be required to comply with the MS4 permit, the SWRCB's CGP, respective municipal codes, and ordinances that control runoff and regulate water quality. The proposed project and cumulative projects within the Santa Ana Watershed would be required to demonstrate that stormwater volumes could be managed by downstream conveyance facilities and would not induce flooding. Individual projects would be reviewed and a WQMP would be prepared and applicable BMPs implemented if identified as priority projects requiring a WQMP by the MS4 program. New projects or redevelopment projects would be required to submit SWPPPs and WQMPs to minimize the potential hydrology and water quality impacts associated with future development.

The proposed project and other cumulative projects would be required to mitigate potential water quality and hydrology impacts by incorporating site design elements that do not allow significant increases in peak flows and allow for filtration or removal of pollutants prior to off-site discharge. Also, a detailed hydrology/hydraulics report would be required to be prepared and submitted to the City or County to ensure that off-site flooding would not occur and that the existing storm drain system has the capacity to accept overflow runoffs. Therefore, the project's contribution to cumulative hydrology impacts is considered less than significant.

5.5.6 Level of Significance Before Mitigation

Upon implementation of PPP HYD-1, the following impacts would be less than significant: 5.5-1 through 5.5-8.

5.5.7 Mitigation Measures

No mitigation measures are required.

5.5.8 Level of Significance After Mitigation

The existing applicable regulations would reduce potential impacts associated with hydrology and water quality impacts to a level that is less than significant. Therefore, no significant unavoidable adverse impacts relating to hydrology and water quality have been identified.

5.5.9 References

California Regional Water Quality Control Board (RWQCB). 1995. Water Quality Control Plan, Santa Ana River Basin (8). https://ocerws.ocpublicworks.com/sites/ocpwocerws/files/import/data/files/10644.pdf.

Fontana, City of. 2021, September. City of Fontana Water Quality Management Plan Handbook. https://www.fontana.org/DocumentCenter/View/37482/WQMP-Handbook.

Fontana Water Company (FWC). 2021, June. *2020 Urban Water Management Plan for San Gabriel Valley Water Company: Fontana Water Company Division*. Prepared by West Yost.

Geocon West, Inc. 2020, February 28. Geotechnical Feasibility Investigation 11016-11098 Sierra Avenue, Fontana, CA. Appendix H.

Kimley-Horn and Associates, Inc. 2021, August 18. Chaffey College Fontan: Rainwater Management Summary. Appendix I.

LPA. 2023a, January 4. Preliminary Hydrology Study Chaffey College Fontana Campus.

_____. 2023b, January 6. Water Quality Management Plan for Chaffey College Fontana Campus.

San Bernardino, County of. 2021, November 21 (accessed). HCOC Exemption Criteria and Map. Appendix F of Technical Guidance Document for Water Quality Management Plans. http://cms.sbcounty.gov/Portals/50/Land/AppendixF-HCOCExemptionCriteriaandMap.pdf?ver=2013-02-28-193056-000.

———. 2019. Hazards Element Interactive Web Maps. *San Bernardino County Countywide Plan.* Accessed January 10, 2022. https://countywideplan.com/resources/maps-tables-figures/.

County of San Bernardino Department of Public Works. 2010, April. County of San Bernardino Hydrology Manual Addendum for Arid Regions. http://cms.sbcounty.gov/Portals/50/floodcontrol/20100412_addendum.pdf.

State Water Resources Control Board (SWRCB). 2021. *GeoTracker.* Accessed January 10, 2022. https://geotracker.waterboards.ca.gov/.

US Environmental Protection Agency (USEPA). 2012, September 26. Water Permitting 101. http://www.epa.gov/npdes/pubs/101pape.pdf.

United States Geological Survey (USGS). 2021, January 11 (accessed) The National Map (TNM) Viewer. https://apps.nationalmap.gov/viewer.

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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