5.8 HYDROLOGY AND WATER QUALITY

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential impacts of the Agua Mansa Commerce Park Specific Plan project (proposed project) to hydrology and water quality conditions. Hydrology deals with the distribution and circulation of water, both on land and underground. Water quality deals with the quality of surface- and groundwater. Surface water includes lakes, rivers, streams, and creeks; groundwater is under the earth's surface.

The following analysis is based in part on information obtained from:

- *Hydrology & Water Quality Report for Agua Mansa Commerce Park, Jurupa Valley, California*, Langan Engineering and Environmental Services, Inc., November 21, 2018.
- *Preliminary Water Quality Management Plan for Agua Mansa Commerce Park, Jurupa Valley, Riverside County, California,* Langan Engineering and Environmental Services, Inc., April, 2018.

Complete copies of these studies are included in the Technical Appendices to this Draft EIR (Volume II, Appendix H).

5.8.1 Environmental Setting

5.8.1.1 REGULATORY BACKGROUND

Federal

Safe Drinking Water Act

The federal Safe Drinking Water Act regulates drinking water quality nationwide and gives the US Environmental Protection Agency (EPA) the authority to set drinking water standards, such as the National Primary Drinking Water regulations. These regulations protect drinking water by limiting the levels of contaminants that can adversely affect public health. All public water systems that provide service to 25 or more individuals must meet these standards. Water purveyors must monitor for contaminants on fixed schedules and report to the EPA when a maximum contaminant level (MCL) is exceeded. MCL is the maximum permissible level of a contaminant in water that is delivered to any user of a public water system. Contaminants include organic and inorganic chemicals (e.g., minerals), substances that are known to cause cancer, radionuclides (e.g., uranium and radon), and microbial contaminants (e.g., coliform and E. coli). The MCL list typically changes every three years as the EPA adds new contaminants or revises MCLs. The California Department of Public Health's Division of Drinking Water and Environmental Management is responsible for implementation of the Safe Drinking Water Act in California.

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 EPA authority to implement pollution control programs, such as setting wastewater

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

National Pollutant Discharge Elimination System

Under the National Pollutant Discharge Elimination System (NPDES) program (under Section 402 of the CWA), all facilities that discharge pollutants from any point source into waters of the United States must have a NPDES permit. The term "pollutant" broadly applies to any type of industrial, municipal, and agricultural waste discharged into water. Point sources can be publicly owned treatment works (POTWs), industrial facilities, and urban runoff. (The NPDES program addresses certain agricultural activities, but the majority are considered nonpoint sources and are exempt from NPDES regulation.) Direct sources discharge directly to receiving waters, and indirect sources discharge to POTWs, which in turn discharge to receiving waters. Under the national program, NPDES permits are issued only for direct, point-source discharges. The National Pretreatment Program addresses industrial and commercial indirect dischargers. Municipal sources are POTWs that receive primarily domestic sewage from residential and commercial customers. Specific NPDES program areas applicable to municipal sources are the National Pretreatment Program, the Municipal Sewage Sludge Program, Combined Sewer Overflows, and the Municipal Storm Water Program. Nonmunicipal sources include industrial and commercial facilities. Specific NPDES program areas applicable to these industrial/commercial sources are: Process Wastewater Discharges, Nonprocess Wastewater Discharges, and the Industrial Storm Water Program. NPDES issues two basic permit types: individual and general. Also, the EPA has recently focused on integrating the NPDES program further into watershed planning and permitting (USEPA 2012).

The NPDES has a variety of measures designed to minimize and reduce pollutant discharges. All counties with storm drain systems that serve a population of 50,000 or more, as well as construction sites of one acre or more, must file for and obtain an NPDES permit. Another measure for minimizing and reducing pollutant discharges to a publicly owned conveyance or system of conveyances (including roadways, catch basins, curbs, gutters, ditches, man-made channels and storm drains) designed or used for collecting and conveying stormwater is the EPA's Storm Water Phase II Final Rule. The Phase II Final Rule requires an operator (such as a city) of a regulated small municipal separate storm sewer system (MS4) to develop, implement, and enforce a program (e.g., best management practices, ordinances, or other regulatory mechanisms) to reduce pollutants in post-construction runoff to the City's storm drain system from new development and redevelopment projects that result in a land disturbance equal to or greater than one acre. The MS4 permit for the part of Riverside County in the Santa Ana Regional Water Quality Control Board's (RWQCB) jurisdiction, Order No. R8-2010-0033 (NPED No. CAS 618033), was issued by the Santa Ana RWQCB in 2010. The principal

permittee of the MS4 NPDES permit is the Riverside County Flood Control and Water Conservation District, and the City of Jurupa Valley is one of the 15 co-permittees.

State

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 the SWRCB to issue NPDES permits. The state is divided into nine regions related to water quality and quantity characteristics. 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 recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region's ground and surface water, and local water quality conditions and problems. The City of Jurupa Valley is in the Santa Ana River Basin, Region 8, in the Upper Santa Ana Watershed. The water quality control plan for the Santa Ana River Basin (Region 8) was adopted in 1995. This basin plan gives direction on the beneficial uses of the state waters in Region 8; describes the water quality that must be maintained to support such uses; and provides programs, projects, and other actions necessary to achieve the standards established in the basin plan.

Regional

Riverside Basin Groundwater Management Plan

The goal of the Riverside Basin Groundwater Management Plan (GWMP) is to provide a planning framework to operate and manage the groundwater basin in a sustainable manner to ensure a long-term, reliable supply for beneficial uses among all stakeholders in the basin. The Riverside Basin GWMP informs the public about the importance of groundwater to the Riverside Basin and about the challenges and opportunities it presents; develops consensus among stakeholders on issues and solutions related to groundwater; builds relationships among stakeholders within the basin and between local, state, and federal agencies; and defines actions for developing project and management programs to ensure the long-term sustainability of groundwater resources in the Riverside Basin. The GWMP provides action items that, when implemented, are intended to optimize groundwater levels, enhance water quality, and minimize land subsidence (Riverside 2012).

Santa Ana River Basin Water Quality Control Plan

The Basin Plan establishes water quality standards for the ground and surface waters of the region and includes an implementation plan describing the actions by the RWQCB and others that are necessary to achieve and maintain the water quality standards. The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. Water quality problems in the region are listed in the Basin Plan,

along with the causes, where they are known. For waterbodies with quality below the levels necessary to allow all the beneficial uses of the water to be met, plans for improving water quality are included.

Storm Water Pollution Prevention Plans

Pursuant to the CWA, in 2001, the SWRCB issued a statewide general NPDES Permit for stormwater discharges from construction sites (NPDES No. CAS000002). Under this Statewide General Construction Activity permit, discharges of stormwater from construction sites with a disturbed area of one or more acres are required to either obtain individual NPDES permits for stormwater discharges or be covered by the General Permit. Coverage by the General Permit is accomplished by completing and filing a Notice of Intent with the SWRCB and developing and implementing a Storm Water Pollution Prevention Plan (SWPPP). Each applicant under the General Construction Activity Permit must ensure that a SWPPP is prepared prior to grading and is implemented during construction. The SWPPP must list best management practices (BMP) implemented on the construction site to protect stormwater runoff and must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a monitoring plan if the site discharges directly to a water body listed on the state's 303(d) list of impaired waters.

Water Quality Management Plan

The water quality management plan (WQMP) for the Santa Ana Region of Riverside County is the guidance document for the project's stormwater design in compliance with Santa Ana RWQCB requirements for a "Priority Development Project." The 2010 MS4 Permit requires that a WQMP be prepared for all projects that meet the definition of a Priority Development Project and for which a final map or permit for discretionary approval is sought. A project-specific WQMP is required for the project to address the following:

- Design the site to minimize imperviousness, detain runoff, and infiltrate, reuse, or evapotranspire runoff where feasible.
- Cover or control sources of stormwater pollutants.
- Use low-impact development (LID) to infiltrate, evapotranspire, harvest and re-use, or treat runoff.
- Ensure runoff does not create a hydrologic condition of concern.
- Maintain stormwater BMPs.

The WQMP's design goal is to maintain or replicate the pre-development hydrologic conditions through the use of design techniques that create a functionally equivalent post-development hydrologic regime through site preservation techniques and the use of integrated and distributed infiltration, retention, detention, evapotranspiration, filtration, and treatment systems. The 2010 MS4 Permit requires the design capture volume (DCV) to be retained and infiltrated onsite. When on-site LID infiltration BMP methods prove infeasible, a feasibility analysis regarding harvest and reuse must be considered. When such retention methods are infeasible, the remainder of the DCV can be treated via processes such as bioretention. The intent behind these prioritization requirements is to maximize on-site retention, so as to reduce the volume of urban runoff and pollutant loads entering receiving waters.

City of Jurupa Valley

Municipal Code

Chapter 6.05, Storm Water/Urban Runoff Management and Discharge Controls, of the City of Jurupa Valley Municipal Code regulates volume and water quality of stormwater discharges to the City's storm drain system. The intent of Chapter 6.05 is to protect and enhance the water quality of water bodies in accordance with the City's NPDES permit (Santa Ana Region Order No. R8-2010-0033, NPDES No. CAS 618033).

City General Plan Policies

The specific policies outlined in the City of Jurupa Valley's General Plan Community Safety, Services, and Facilities Element that are related to hydrology and water quality and that apply to the proposed project are listed in Table 5.9-2, *City of Jurupa Valley General Plan Consistency Analysis*.

5.8.1.2 ENVIRONMENTAL SETTING

Regional Drainage

The City of Jurupa Valley is within the Upper Santa Ana Watershed of the Santa Ana River Basin Region, which is a group of connected inland basins and open coastal basins drained by surface streams flowing generally southwestward to the Pacific Ocean. The Santa Ana Region is the smallest of the nine regions in California, approximately 2,800 square miles, and is located roughly between Los Angeles and San Diego. The primary drainage channel in the watershed is the Santa Ana River, which is divided into six reaches and begins from the San Bernardino Mountains and extends downstream through the counties of San Bernardino, Riverside, Los Angeles, and Orange until it reaches the Pacific Ocean.

Local Drainage

The project site is directly tributary to the Santa Ana River via existing infrastructure owned and operated by the Riverside County Flood Control and Water Conservation District (RCFC). The infrastructure includes the Belltown Market Street Storm Drain system, the Agua Mansa Brown Avenue Storm Drain, Wilson Street Storm Drain, laterals, and outlet erosion control basins.

The Belltown Market system drainage area is generally bounded by El Rivino Road (San Bernardino/Riverside County Line) on the north, 20th Street to the south, the Jurupa Mountains to the west, and the project site to the east. The system also currently collects runoff from areas within San Bernardino County, north of El Rivino Road. However, current development plans and infrastructure improvements in El Rivino Road may reduce or eliminate this tributary flow.

The Agua Mansa Brown Avenue System Drainage Area is generally bounded by El Rivino Road and Hall Avenue to the north, Holly Street to the east, and Agua Mansa Road and Wilson Street to the west and south, respectively.

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

Site Hydrology

Approximately 172 acres of the project site is tributary to the Belltown Market system, 22 acres is tributary to the Agua Mansa Brown Avenue system, and 91 acres is retained within the site. The existing surface water hydrology includes approximately 92 acres from San Bernardino County (City of Rialto) north of El Rivino Road. According to the Rialto Commerce Center EIR, a development is planned for this former golf course site, which may include the installation of a storm drain within El Rivino Road to collect and convey the surface water runoff to the east along El Rivino Road. If constructed, the 92-acre tributary area would be removed from the proposed project site's hydrology. For purposes of this report, it is assumed that the off-site area will be collected and conveyed to the Santa Ana River by off-site improvements to be constructed as part of the Rialto Commerce Center Project.

The existing surface water hydrology also includes approximately 322 acres of the Jurupa Mountains, west of Rubidoux Boulevard. The northern section (approximately 283 acres) directs surface water runoff to Rubidoux Boulevard, which is hydraulically connected to an existing basin within the site. The southern section of the off-site area (approximately 39 acres) directs surface water runoff directly to the Belltown Market system.

Surface Water Quality

Section 303(d) of the 1972 Federal Clean Water Act requires states to identify water bodies that do not meet water quality objectives and are not supporting their beneficial uses. Each state must submit an updated list, called the 303(d) list, to the EPA every two years. The list also identifies the pollutant or stressor causing impairment and establishes a priority for developing a control plan to address the impairment. The list identifies water bodies where 1) a total maximum daily load (TMDL) has been approved by the EPA and an implementation is available, but water quality standards are not yet met, and 2) the water quality problem is being addressed by an action other than a TMDL and water quality standards are not yet met.

The relevant section of the Santa Ana River is Reach 4. Currently, this section is listed on the California 303(d) as a Category 5 water segment, which is a water segment where standards are not met and a TMDL is required, but not yet completed, for at least one of the pollutants listed. The water quality impairments listed for the Santa Ana River, Reach 4, are pathogens from a nonpoint source. The available information from the Santa Ana RWQCB indicates a TMDL completion date of 2019.

Groundwater

The site is above the Riverside-A Groundwater Management Zone (GMZ). GMZ water quality objectives are 560 mg/L for total dissolved solids and 6.2 mg/L for nitrate-nitrogen. The beneficial uses of this GMZ are municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.

The measured depth to groundwater at two on-site wells was 134 feet (approximately 818 feet above mean sea level [amsl]) and 184 feet (approximately 701 feet amsl). The anticipated groundwater elevation within the project site is significantly below the lowest surface elevations planned for development.

Groundwater Quality

The Riverside Cement Plant (RCP) property has been used for mining, quarrying, and/or cement manufacturing since the early 1900s. Cement kiln dust (CKD) was one of the primary by-products of the manufacturing process and was composed of material accumulated within the kilns that could not be reused. Prior to the 1970s, CKD was hauled from the kilns and placed with fill soils/mine spoils at several locations throughout the site (see Figures 5.7-1a and 5.7-1b). In the 1970s and up until the late 1980s, the CKD was recovered for a mill and kiln feed supplement as part of the cement manufacturing process. Soils mixed with CKD still exist on site. Soil with CKD is a concern because it may have high metal content, which could contaminate soils and groundwater.

The equipment used to manufacture cement generally relied on electrical power for material conveyance/process control, and petroleum fuels for heating. Petroleum fuels were historically provided by a 6,000,000-gallon underground storage tank (UST). Other USTs at the site were used to store petroleum products such as gasoline, diesel fuel, fuel oil, and waste oil. All USTs have been removed. USTs are of concern because they may leak total petroleum hydrocarbons and volatile organic compounds into soils and groundwater.

Groundwater was found to be impacted by hexavalent chromium; however, none of the water samples analyzed from on-site wells exceed the state chromium levels.

5.8.2 Notice of Preparation / Scoping Comments

A Notice of Preparation (NOP) for the proposed project was circulated for public review on July 17, 2017. The comments from the NOP review that will be addressed in the hydrology and water quality section are included in Table 5.8-1.

Table 5.8-1 NOP Written Comments Summary

Commenting Agency/Person	Letter Dated	Summary of Comments	Issue Addressed In:
Santa Ana Regional Water Quality Control Board (RWQCB) Terri S. Reeder, Chief, Basin Planning Coastal Waters Section	8/18/17	RWQCB states that the water-filled quarry or "Crestmore Lake" was saturated at depth with groundwater recharged by the Santa Ana River, and pollutants entering it could be carried underground and impact downgradient resources. Surface runoff onsite into Crestmore Lake can also impact groundwater quality. RWQCB requests that: • The hydrology report address the creation of a Water Quality Management Plan to protect the Crestmore Lake from adverse water quality impacts, by using structural and procedural best management practices The RWQCB requests that the EIR include: • Discussion of groundwater quality onsite, as well as upgradient and downgradient, and establish a baseline prior to construction.	• Section 5.8, *Hydrology and Water Quality* • Appendix H, *Hydrology & Preliminary Water Quality Management Reports*

Table 5.8-1 NOP Written Comments Summary

Commenting Agency/Person	Letter Dated	Summary of Comments	Issue Addressed In:
		• Discuss the Riverside A Groundwater Management Zone (GMZ), over which the site is located • State the project's intentions for the two onsite wells, with their respective casing construction measurements (camera survey) and depths to groundwater. Any abandonment must be conducted according to California Well Standards. The RWQCB further requests: • A monitoring program of sampling and analyses tracking for groundwater throughout the project; • Establishing a groundwater elevation contour map (with seasonal fluctuations) indicating the gradient between the SAR, Crestmore Lake, and downgradient locations; • The project obtain a Construction General Permit per SWRCB Order No. 2009-0009-DWQ and implement a Storm Water Pollution Prevention Plan. • The project obtain a Riverside County MS4 permit per Regional Board Order No. RB-2010-0033, NPDES Permit No. CAS 618033	

In addition, a scoping meeting was held on July 27, 2017, at the Jurupa Valley City Hall, 8930 Limonite Avenue, Jurupa Valley, CA 92509, to elicit comments on the scope of the DEIR. A list of attendees is provided in Appendix A; no verbal or written comments were received during the scoping meeting.

5.8.3 Thresholds of Significance

The City of Jurupa Valley has not established local CEQA significance thresholds as described in § 15064.7 of the State CEQA Guidelines. Criteria for determining the significance of impacts related to hydrology and water quality are based on criteria in Appendix G of the CEQA Guidelines. According to Appendix G, 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 off-site;

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

iv) impede or redirect flood flows.

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

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

5.8.4 Applicable Policies and Design Features

5.8.4.1 PLANS, POLICIES, OR PROGRAMS

These include existing regulatory requirements, such as plans, policies, or programs, applied to the project based on federal, state, or local law currently in place and which effectively reduce impacts related to hydrology and water quality. These requirements are included in the project's Mitigation Monitoring and Reporting Program to ensure compliance:

PPP HYD-1 As required by Municipal Code Chapter 6.05.050, "Storm Water/Urban Runoff Management and Discharge Controls," Section B (1), any person performing construction work in the city shall comply with the provisions of this chapter, and shall control storm water runoff so as to prevent any likelihood of adversely affecting human health or the environment. The City Engineer shall identify the BMPs that may be implemented to prevent such deterioration and shall identify the manner of implementation. Documentation on the effectiveness of BMPs implemented to reduce the discharge of pollutants to the MS4 shall be required when requested by the City Engineer.

PPP HYD-2 As required by Municipal Code Chapter 6.05.050, "Storm Water/Urban Runoff Management and Discharge Controls," Section B (2), any person performing construction work in the city shall be regulated by the State Water Resources Control Board in a manner pursuant to and consistent with applicable requirements contained in the General Permit No. CAS000002, State Water Resources Control Board Order Number 2009-0009-DWQ. The city may notify the State Board of any person performing construction work that has a non-compliant construction site per the General Permit.

PPP HYD-3 As required by Municipal Code Chapter 6.05.050, "Storm Water/Urban Runoff Management and Discharge Controls," Section C, new development or redevelopment projects shall control storm water runoff so as to prevent any deterioration of water quality that would impair subsequent or competing uses of the water. The City Engineer shall identify the BMPs that may be implemented to prevent such deterioration and shall identify the manner of implementation. Documentation on the effectiveness of BMPs implemented to reduce the

discharge of pollutants to the MS4 shall be required when requested by the City Engineer. The BMPs may include, but are not limited to, the following and may, among other things, require new developments or redevelopments to do any of the following:

(1) Increase permeable areas by leaving highly porous soil and low lying area undisturbed by:

(a) Incorporating landscaping, green roofs and open space into the project design;

(b) Using porous materials for or near driveways, drive aisles, parking stalls and low volume roads and walkways; and

(c) Incorporating detention ponds and infiltration pits into the project design.

(2) Direct runoff to permeable areas by orienting it away from impermeable areas to swales, berms, green strip filters, gravel beds, rain gardens, pervious pavement or other approved green infrastructure and French drains by:

(a) Installing rain-gutters oriented towards permeable areas;

(b) Modifying the grade of the property to divert flow to permeable areas and minimize the amount of storm water runoff leaving the property; and

c) Designing curbs, berms or other structures such that they do not isolate permeable or landscaped areas.

(3) Maximize storm water storage for reuse by using retention structures, subsurface areas, cisterns, or other structures to store storm water runoff for reuse or slow release.

(4) Rain gardens may be proposed in-lieu of a water quality basin when applicable and approved by the City Engineer.

PPP HYD-4 As required by Municipal Code Chapter 6.05.050, "Storm Water/Urban Runoff Management and Discharge Controls," Section E, any person or entity that owns or operates a commercial and/or industrial facility(s) shall comply with the provisions of this chapter. All such facilities shall be subject to a regular program of inspection as required by this chapter, any NPDES permit issued by the State Water Resource Control Board, Santa Ana Regional Water Quality Control Board, Porter-Cologne Water Quality Control Act (Wat. Code Section 13000 et seq.), Title 33 U.S.C. Section 1251 et seq. (Clean Water Act), any applicable state or federal regulations promulgated thereto, and any related administrative orders or permits issued in connection therewith.

5.8.4.2 PROJECT DESIGN FEATURES

PDF HYD-1 The proposed project will implement LID strategies that will include: bioretention facilities or rain gardens (lined with underdrains as necessary), extended detention basins, lined grass swales and channels, vegetated filter strips, and rainwater harvesting and re-use.

PDF HYD-2 The onsite detention basins would be designed to ensure that post-development flows do not exceed the capacity of the existing RCFC storm drainage infrastructure systems. The proposed project would also connect to the Belltown Market Street and Agua Mansa Brown Avenue systems at the same locations that are currently being utilized, in the southwest and northeast corners of the site, respectively.

5.8.5 Environmental Impacts

The following impact analysis addresses thresholds of significance for hydrology and water quality.

Impact HYD-1 Threshold: Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Construction

During construction and remediation activities, the proposed project has the potential to produce typical pollutants such as nutrients; heavy metals; toxic chemicals related to construction and cleaning; waste materials including wash water, paints, wood, paper, concrete, food containers, and sanitary wastes; and fuel and lubricants.

However, future development of the project would require compliance with the Construction General Permit Water Quality Order 2009-0009-DWQ (as amended by Order No. 2010-0014-DWQ and 2012-006-DWQ), which requires the preparation and implementation of a SWPPP. A SWPPP estimates sediment risk from construction activities to receiving waters and specifies BMPs that would be used by the project to minimize pollution of stormwater.

Categories of BMPs used in SWPPPs are described in Table 5.8-2, *Construction BMPs*. Water quality impacts of project construction would be less than significant after implementation of the SWPPP.

Table 5.8-2 Construction BMPs

Category	Purpose	Examples
Erosion Controls and Wind Erosion Controls	• Use project scheduling and planning to reduce soil or vegetation disturbance (particularly during the rainy season) • Prevent or reduce erosion potential by diverting or controlling drainage • Prepare and stabilize disturbed soil areas	Scheduling, preservation of existing vegetation, hydraulic mulch, hydroseeding, soil binders, straw mulch, geotextile and mats, wood mulching, earth dikes and drainage swales, velocity dissipation devices, slope drains, streambank stabilization, compost blankets, soil preparation/roughening, and non-vegetative stabilization
Sediment Controls	• Filter out soil particles that have been detached and transported in water	Silt fence, sediment basin, sediment trap, check dam, fiber rolls, gravel bag berm, street sweeping and vacuuming, sandbag barrier, straw bale barrier, storm drain inlet protection, manufactured linear sediment controls, compost socks and berms, and biofilter bags

Table 5.8-2 Construction BMPs

Category	Purpose	Examples
Wind Erosion Controls	• Apply water or other dust palliatives to prevent or minimize dust nuisance	Dust control soil binders, chemical dust suppressants, covering stockpiles, permanent vegetation, mulching, watering, temporary gravel construction, synthetic covers, and minimization of disturbed area
Tracking Controls	• Minimize the tracking of soil offsite by vehicles	Stabilized construction roadways and construction entrances/exits, and entrance/outlet tire wash.
Non-Storm Water Management Controls	• Prohibit discharge of materials other than stormwater, such as discharges from the cleaning, maintenance, and fueling of vehicles and equipment. • Conduct various construction operations, including paving, grinding, and concrete curing and finishing, in ways that minimize non-stormwater discharges and contamination of any such discharges.	Water conservation practices, temporary stream crossings, clear water diversions, illicit connection/discharge, potable and irrigation water management, and the proper management of the following operations: paving and grinding, dewatering, vehicle and equipment cleaning, fueling and maintenance, pile driving, concrete curing, concrete finishing, demolition adjacent to water, material over water, and temporary batch plants.
Waste Management and Controls (i.e., good housekeeping practices)	• Manage materials and wastes to avoid contamination of stormwater.	Stockpile management, spill prevention and control, solid waste management, hazardous waste management, contaminated soil management, concrete waste management, sanitary/septic waste management, liquid waste management, and management of material delivery storage and use.

Source: CASQA 2012.

Remediation

The brownfield site is being decommissioned and prepared for environmental remediation and successful redevelopment under the requirements of the Specific Plan. Based on preliminary sampling results, it is not anticipated that significant quantities of contaminated soil would need to be removed from the site for off-site placement or disposal. The vast majority of the soil meets screening levels for commercial/industrial use and groundwater protection and is proposed to be used across the site as fill material. However, Impact HAZ-1 includes mitigation measures to address soils to be disposed off-site due to hazardous classification, unacceptable risk to human health, or groundwater protection. These mitigation levels will reduce the impact to groundwater to less than significant.

Operations

Operation and maintenance of most development projects, including the proposed project, may produce typical pollutants, including suspended solids/sediment, nutrients, heavy metals, pathogens (bacteria/virus), pesticides, oil and grease, toxic organic compounds, trash and debris, and household hazardous wastes. Additionally, vegetated areas in the landscaped areas throughout the site are likely to produce suspended solids/sediment, nutrients, and pesticides.

According to the Santa Ana RWQCB MS4 permit, a project of this type is classified a Priority Development Project because it is an industrial project that would create more than 10,000 square feet of impervious surfaces collectively over the project site. It also qualifies for a Priority Development Project because it is a significant redevelopment project that will add 5,000 square feet or more of impervious surface on an already developed site. Therefore, a WQMP would be required for the proposed project under the MS4 permit. Separate, preliminary WQMPs are included in Appendix H for the Industrial Park/Business Park and for the Activity Park.

Low-Impact Development BMPs

LID is an approach to land development (or redevelopment) that works with nature to manage and treat stormwater as close to its source as possible. LID employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness, and creating functional and appealing site drainage that treats stormwater as a resource rather than a waste product. Practices that adhere to these principles include bioretention facilities, rain gardens, vegetated rooftops, rain barrels, and permeable pavements. By implementing LID principles and practices, water can be managed in a way that reduces the impact of built areas and promotes the natural movement of water within an ecosystem or watershed. Applied on a broad scale, LID can maintain or restore a watershed's hydrologic and ecological functions (USEPA 2016).

The preliminary water quality management plan (WQMP) for the Industrial Park and Business Park areas includes extended detention basins, bioretention basins, and modular wetland systems (see Figure 5.8-1, *Water Quality Management Plan: Industrial and Business Parks*):

- The Business Park area includes one extended detention basin that collects stormwater from downspouts, parking areas, access roads, and hardscape.
- The Industrial Park includes four extended detention basins and two bioretention areas. The extended detention basins and bioretention areas collect the stormwater runoff from the downspouts, parking areas, access roads, and hardscape of the five buildings proposed for this area.
- The Industrial Park also includes three modular wetland systems (MWS) that collect stormwater from the access road, running from El Rivino Road to the park entrance, east of the industrial park.

The MWS utilizes multistage treatment processes, including screening media filtration, settling, and biofiltration. Stormwater runoff enters the MWS via curb inlet opening into a pretreatment chamber with a settling chamber for separating out larger solids and a media filter cartridge for capturing fine total suspended solids, metals, nutrients, and bacteria. It flows into the wetland chamber and through a variety of physical, chemical, and biological processes. As stormwater passes through the planting soil, pollutants are filtered, absorbed, and sequestered by the soil and plants, similar to bioretention systems.

All proposed BMPs are designed to treat the on-site runoff from the impervious areas based on the Riverside County Low Impact Development BMP Design Handbook. Perforated pipes in the proposed BMPs would collect the treated water and convey it to the proposed storm drain, as shown in Figure 5.8-1.

The Open Space District would leave the site undeveloped with controlled access, resulting in no changes in current use and no human access. Therefore, this portion of the site would not involve development that would violate water quality standards or waste discharge requirements.

Source Control BMPs

Source control BMPs reduce the potential for pollutants to enter runoff in the first place. Structural source control BMPs are used in a project's design to both minimize runoff and keep pollutants from entering runoff. Nonstructural source control BMPs are restrictions on activities on-site to reduce the potential for pollutants to contaminate runoff. The project WQMP prescribes the source control BMPs in Table 5.8-3.

Table 5.8-3 Source Control BMPs

Potential Sources of Runoff Pollutants	Structural Source Control BMPs	Nonstructural Source Control BMPs
On-site storm drain inlets	• Mark all inlets with the words "Only Rain Down the Storm Drain" or similar. • Include catch basin filter inserts in all inlets/catch basins onsite as a pretreatment measure.	• Maintain and periodically repaint or replace inlet markings. • Provide stormwater pollution prevention information to new site owners, lessees, or operators. • See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks
Landscape / outdoor pesticide use	• Show locations of native trees or areas of shrubs and ground cover to be undisturbed and retained. • Show stormwater treatment and hydrology modification management BMPs.	• Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater • Consider using pest-resistant plants, especially adjacent to hardscape. • To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.
Refuse areas	• Show where site refuse and recycled materials will be handled and stored for pickup. See local municipal requirements for sizes and other details of refuse areas. • If dumpsters or other receptacles are outdoors, show how the designated area will be covered, graded, and paved to prevent run-on, and show locations of berms to prevent runoff from the area.	• State how site refuse will be handled and provide supporting detail to what is shown on plans. • State that signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.
Loading docks	• Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas shall be drained	• Move loaded and unloaded items indoors as soon as possible.

Table 5.8-3 Source Control BMPs

Potential Sources of Runoff Pollutants	Structural Source Control BMPs	Nonstructural Source Control BMPs
	to the sanitary sewer, or diverted and collected for ultimate discharge to the sanitary sewer.	
Plazas, sidewalks, and parking lots.	• N/A	• Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain

Source: Langan 2018.

Post-development water quality impacts would be less than significant after construction, operation, and maintenance of the BMPs specified in the WQMP. Runoff from the site would not violate any water quality standards specified in the Santa Ana River Basin Water Quality Control Plan. Impacts would be less than significant.

Level of Significance before Mitigation: With implementation of PPP HYD-1, PPP HYD-2, PPP HYD-3, PPP HYD-4, and PDF HYD-1, Impact HYD-1 would be less than significant.

Impact HYD-2 Threshold: Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

As stated above (in Section 5.8.1.2 under *Groundwater*), groundwater depth was measured at two onsite wells at 134 feet deep (approximately 818 feet amsl) and 184 feet deep (approximately 701 feet amsl). The anticipated groundwater elevation within the project site is significantly below the lowest surface elevations onsite. Therefore, the project site is not a significant opportunity for groundwater recharge.

There are several other existing onsite wells that were previously used by the Riverside Cement facility; however, no potable water is available. Thus, the project would not impact the production rate of these existing wells and may relocate and/or abandon them in accordance with RWQCB requirements. Overall, the proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge, and would not obstruct the implementation of the Riverside Basin Groundwater Management Plan.

Level of Significance before Mitigation: Impact HYD-2 would be less than significant.

Impact HYD-3 Threshold: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or 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 off-site;

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

iv) impede or redirect flood flows?

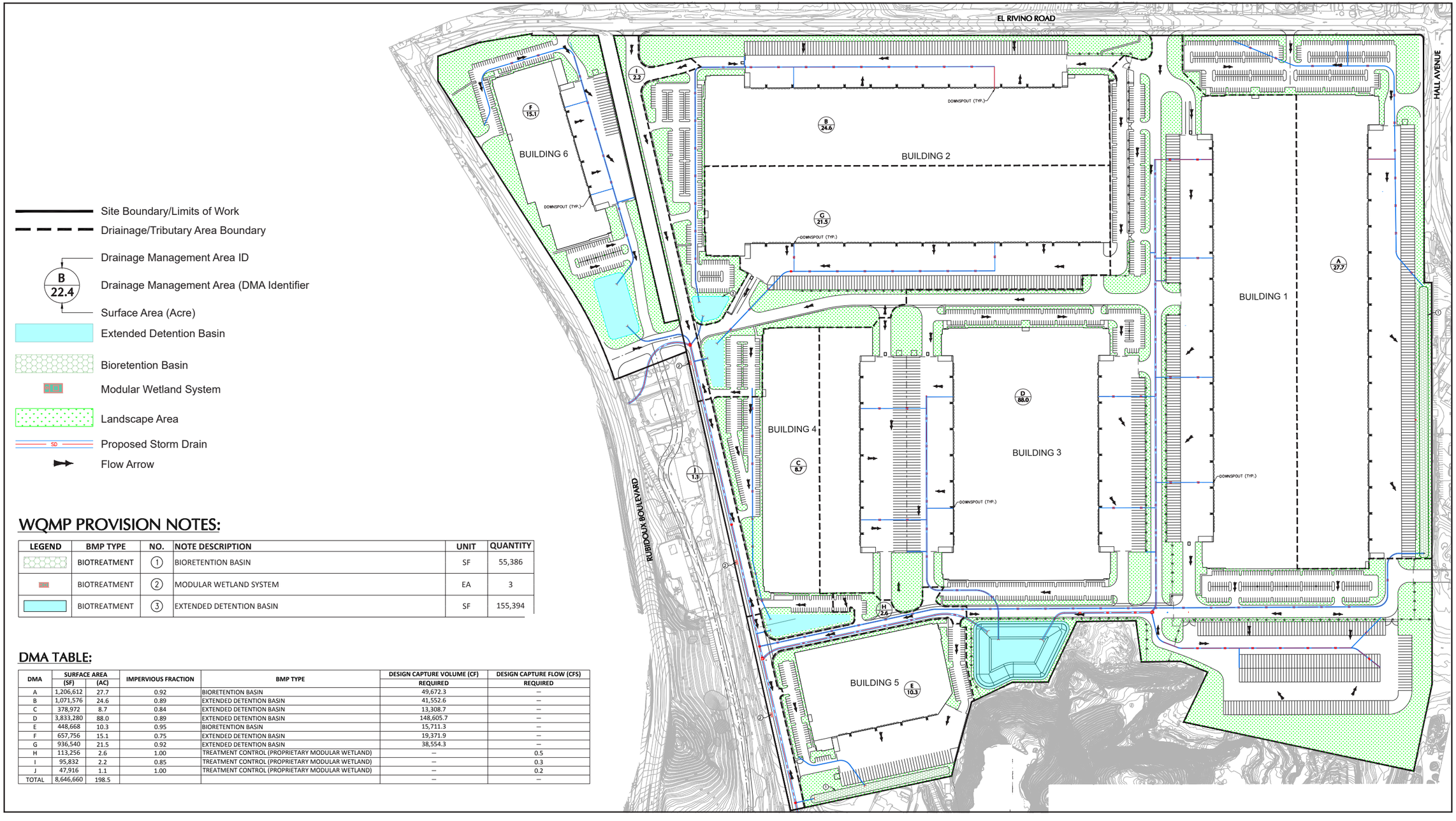
As stated in Section 5.8.1.2, the existing drainage patterns for the project site discharge via two piped conveyance systems owned and operated by the RCFC—Belltown Market Street system and the Agua Mansa Brown Avenue system. Of the total watershed area, which includes the site and the off-site areas, approximately 97 percent is tributary to the Belltown Market Street system, and 3 percent is tributary to the Agua Mansa Brown Avenue syst.

Proposed Drainage

Development of the proposed project would alter the on-site drainage patterns with the development of the buildings, roadways, and associated site improvements. The project would also alter the percentage of tributary area to each system, with more area being directed to the Belltown Market Street system.

The proposed project would include onsite stormwater detention BMPs designed in accordance with the RCFC and NPDES requirements. The surface runoff would be conveyed from the project to the BMPs, which then discharge into the existing storm drainage infrastructure and ultimately to the Santa Ana River at the same locations. The proposed project would connect to the Belltown Market Street system at the southwest corner of the site, which is the terminus of the RCFC "Line A" at the Rubidoux Boulevard and Union Pacific Railroad intersection, and would connect to the Agua Mansa Brown Avenue system at the northeast corner of the site, which is the upstream end of the system at a recently constructed (2005) concrete drop inlet. The surface runoff from the Jurupa Mountains, west of the site, would continue to pass through the project site. Although the type of drainage conveyance onsite would change, the direction of drainage would remain similar to existing conditions.

Figure 5.8-1 - Water Quality Management Plan – Industrial and Business Parks



WQMP PROVISION NOTES:

LEGEND	BMP TYPE	NO.	NOTE DESCRIPTION	UNIT	QUANTITY
	BIOTREATMENT	1	BIORETENTION BASIN	SF	55,386
	BIOTREATMENT	2	MODULAR WETLAND SYSTEM	EA	3
	BIOTREATMENT	3	EXTENDED DETENTION BASIN	SF	155,394

DMA TABLE:

DMA	SURFACE AREA (SF)	SURFACE AREA (AC)	IMPERVIOUS FRACTION	BMP TYPE	DESIGN CAPTURE VOLUME (CF) REQUIRED	DESIGN CAPTURE FLOW (CFS) REQUIRED
A	1,206,612	27.7	0.92	BIORETENTION BASIN	49,672.3	–
B	1,071,576	24.6	0.89	EXTENDED DETENTION BASIN	41,552.6	–
C	378,972	8.7	0.84	EXTENDED DETENTION BASIN	13,308.7	–
D	3,833,280	88.0	0.89	EXTENDED DETENTION BASIN	148,605.7	–
E	448,668	10.3	0.95	BIORETENTION BASIN	15,711.3	–
F	657,756	15.1	0.75	EXTENDED DETENTION BASIN	19,371.9	–
G	936,540	21.5	0.92	EXTENDED DETENTION BASIN	38,554.3	–
H	113,256	2.6	1.00	TREATMENT CONTROL (PROPRIETARY MODULAR WETLAND)	–	0.5
I	95,832	2.2	0.85	TREATMENT CONTROL (PROPRIETARY MODULAR WETLAND)	–	0.3
J	47,916	1.1	1.00	TREATMENT CONTROL (PROPRIETARY MODULAR WETLAND)	–	0.2
TOTAL	8,646,660	198.5			–	–

Source: Langan Engineering and Environmental Services, 2018

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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Impervious Areas and Drainage Flow Rates

Industrial and Business Parks

Project development would increase impervious areas onsite from its current approximately 100 acres to approximately 187 acres, a net increase of 87 acres of impervious area. The onsite comparison of the peak drainage flow rates and discharge volume from a 2-year, 24-hour storm to the Belltown Market Street tributary and the Agua Mansa Brown Avenue tributary are shown in Table 5.8-4.

Table 5.8-4 Proposed Peak Drainage Flow Rates from a 2-Year, 24-Hour Storm

Belltown Market Street	Pre-Development	Post-Development	% Difference
Peak Flow rate (cfs)	43.7	56.7	29.8
Volume (cubic feet)	1,196,781	1,559,448	30.2
Agua Mansa Brown Avenue			
Peak Flow rate (cfs)	0.68	3.72	447.1
Volume (cubic feet)	17,424	100,188	190

Source: Langan 2018.
cfs = cubic feet per second

As demonstrated in the table above, the pre-development hydrology is not maintained. The volume that needs to be mitigated was determined by taking the difference between pre- and post-project conditions at each tributary area. This displayed an excess runoff of 361,548 cubic feet and 82,764 cubic feet from the Belltown Market and Agua Mansa Brown tributaries respectively. As depicted in Figure 5.8-1, a bioretention basin (south of building 5) and five extended detention basins have been placed throughout the Belltown Market Tributary, capable of capturing and storing approximately 616,080 cubic feet. Furthermore, the stormwater bioretention basin east of building 1 is capable of handling 86,320 cubic feet of runoff from the Agua Mansa Brown Tributary. Thus, all additional runoff created by post-development conditions is mitigated by the proposed BMPs, and the overall impact would be less than significant.

Open Space District

The Open Space District would leave the site undeveloped resulting in no changes in current use. Therefore, this portion of the site would not result in a change to the existing drainage pattern and would have no impact.

Level of Significance before Mitigation: With implementation of PPP HYD-3, PPP HYD-4, PDF HYD-1, and PDF HYD-2, Impact HYD-3 would be less than significant.

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

According to the Federal Emergency Management Agency (FEMA) flood insurance rate map for the project area, the entire project site is located within Zone X "Other Flood Areas" and is outside of any 100-year flood hazard area. The existing body of water within the southern portion of the site, which is outside the developable

area of the project, is shown as a 100-year flood hazard area and designated Zone A "Special Flood Hazard Area" with no base flood elevation determined (FEMA 2008). This portion of the project site is proposed for open space and no development would occur near the body of water. Furthermore, the proposed project does not include any housing, Thus, potential flood hazard impacts would be less than significant.

A seiche is a surface wave created when a body of water is shaken, usually by earthquake activity. Seiches are of concern relative to water storage facilities because inundation from a seiche can occur if the wave overflows a containment wall, such as the wall of a reservoir, water storage tank, dam, or other artificial body of water. There are no bodies of water near the project site, with the exception of the water-filled Chino Quarry in the southern portion of the Specific Plan area. The lake is approximately 200 feet in depth, and the project site is approximately 100 feet higher than the water elevation. Therefore, the potential for a seiche to overtop the site is considered to be low and insignificant (Langan 2017).

Tsunamis are large ocean waves caused by underwater seismic activity. When tsunamis hit the coast, they can cause considerable damage to property and put the public at risk. The project site is over 40 miles from the Pacific Ocean and is well outside the tsunami hazard zone.

Mudflows are associated with landslides and heavy rainfall. The project site is mostly flat in the northern portion of the site where the closed Riverside Cement plant is located; however, the southern portion includes the quarry and steeply sloped hill. Nevertheless, this southern portion of the site would be developed an open space; all other development (i.e., industrial park and business park) would occur in the northern portion. Additionally, surrounding uses near the project site are mostly flat, and there are no adjacent hillsides that could cause mudflows or landslides onto the project site. Overall, impacts would be less than significant.

Level of Significance before Mitigation: Impact HYD-4 would be less than significant.

5.8.6 Cumulative Impacts

Hydrology and Drainage

Cumulative projects in the Upper Santa Ana River basin hydrologic units could increase impervious areas and would thus increase local runoff rates at those project sites. However, other projects in the region would be required to capture and infiltrate runoff from two-year storms, and many other projects in the region would be required to limit post-development runoff discharges to no greater than pre-development runoff rates, in accordance with the NPDES MS4 permit. Thus, no significant cumulative drainage impact would occur, and project drainage impacts would not be cumulatively considerable.

Water Quality

Cumulative projects would generate pollutants during project construction and operation. While the specific types of pollutants would vary by land use category, the types of pollutants that would be generated by the proposed project are common to a range of developed land uses. Other construction projects of one acre or more would be required to prepare and implement SWPPPs in order to obtain coverage under the statewide Construction General Permit. Other projects in the region would also be required to prepare and implement

WQMPs specifying BMPs, including LID measures that would be applied during project design and project operation to minimize water pollution from project operation. Thus, no significant cumulative water quality impact would occur, and project water quality impacts would not be cumulatively considerable.

5.8.7 Level of Significance Before Mitigation

Upon implementation of PPP HYD-1, PPP HYD-2, PPP HYD-3, PPP HYD-4, and PDF HYD-1, Impacts HYD-1, HYD-2, HYD-3, and HYD-5 would be less than significant.

Impact HYD-4 would be less than significant.

5.8.8 Mitigation Measures

No mitigation measures required.

5.8.9 Level of Significance After Mitigation

Impacts would be less than significant.

5.8.10 References

California State Water Resources Control Board (SWRCB). 2019. Chromium-6 Drinking Water MCL. https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Chromium6.html.

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

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5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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