5.9 HYDROLOGY AND WATER QUALITY

This section of the Draft Environmental Impact Report (DEIR) evaluates the potential impacts of the proposed project to hydrology and water quality conditions in the City. 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:

- *Preliminary Hydrology Calculations for the Ontario Ranch Commerce Center,* Thienes Engineering Inc., July 25, 2019. (Appendix I1)

- *Preliminary Water Quality Plan for the Ontario Ranch Commerce Center,* Thienes Engineering Inc., August 28, 2018. (Appendix I2)

Complete copies of these studies are included in the DEIR Appendices I1 and I1.

5.9.1 Environmental Setting

5.9.1.1 REGULATORY BACKGROUND

Federal

Clean Water Act and National Pollution Elimination Discharge System

The Clean Water Act establishes regulations to control the discharge of pollutants into the waters of the United States and regulates water quality standards for surface waters (US Code, Title 33, §§ 1251 et seq.). Under the act, the US Environment Protection Agency (EPA) is authorized to set wastewater standards and runs the National Pollutant Discharge Elimination System (NPDES) permit program. Under the NPDES program, permits are required for all new developments that discharge directly into Waters of the United States. The federal Clean Water Act requires wastewater treatment of all effluent before it is discharged into surface waters. NPDES permits for such discharges in the project region are issued by the Santa Ana Regional Water Quality Control Board (RWQCB).

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA), the principal federal law intended to ensure safe drinking water to the public, was enacted in 1974 and has been amended several times since it came into law. The Act authorizes the EPA to set national standards for drinking water, called the National Primary Drinking Water Regulations, to protect against both naturally occurring and man-made contaminants. These standards set enforceable maximum contaminant levels in drinking water and require all water providers in the United States to treat water to remove contaminants, except for private wells serving fewer than 25 people. In California, the State Water Resources Control Board (SWRCB) conducts most enforcement activities. If a water system does not meet standards, it is the water supplier's responsibility to notify its customers.

Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA also issues Flood Insurance Rate Maps (FIRMs) 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 is established by FEMA. FEMA's minimum level of flood protection for new development is the 100-year flood event, also described as a flood that has a 1-in-100 chance of occurring in any given year. The project site is not located within a 100-year floodplain.

State

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act (Water Code Sections 13000 et seq.), which was passed in California in 1969 and amended in 2013, the SWRCB has authority over State water rights and water quality policy. This Act divided the state into nine regional basins, each under the jurisdiction of a Regional Water Quality Control Board (RWQCB) to oversee water quality on a day-to-day basis at the local and regional level. RWQCBs engage in a number of water quality functions in their respective regions. RWQCBs regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. The project site and the City of Ontario are within the jurisdiction of the Santa Ana RWQCB.

State Water Resources Control Board General Construction Permit

The SWRCB has adopted a statewide Construction General Permit (Order No. 2012-0006-DWQ) for stormwater discharges associated with construction activity. These regulations prohibit the discharge of stormwater from construction projects that include one acre or more of soil disturbance. Construction activities subject to this permit include clearing, grading, and other disturbance to the ground, such as stockpiling or excavation, that results in soil disturbance of at least one acre of total land area. Individual developers are required to submit Permit Registration Documents (PRDs) to the SWRCB for coverage under the NPDES permit prior to the start of construction. The PRDs include a Notice of Intent (NOI), 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.

The NPDES Construction General Permit requires all dischargers to (1) develop and implement a SWPPP, which specifies best management practices (BMPs) to be used during construction of the project; (2) eliminate or reduce non-storm water discharge to stormwater conveyance systems; and (3) develop and implement a monitoring program of all specified BMPs. The two major objectives of the SWPPP are to (1) help identify the sources of sediment and other pollutants that affect the water quality of stormwater discharges and (2) to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-storm water discharges.

State Water Resources Control Board Trash Amendments

On April 7, 2015, the State Water Board adopted an Amendment to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) to Control Trash and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California (ISWEBE Plan). Together, they are collectively referred to as "the Trash Amendments". The purpose of the trash amendments is to reduce trash entering waterways Statewide, provide consistency in the SWRCB's regulatory approach to protect aquatic life and public health beneficial uses, and reduce environmental issues associated with trash in State waters. There are two compliance tracks:

- **Track 1:** Permittees install, operate, and maintain a network of certified Full Capture Systems (FCS) to capture trash in storm drains, located in priority land use areas for municipal systems, and the entire facility for industrial and commercial permit holders

- **Track 2:** Permittees install, operate, and maintain any combination of controls (structural and/or institutional) anywhere in their jurisdiction as long as they demonstrate that their system performs as well as Track 1

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.

Senate Bill 92

On June 27, 2017, Governor Brown signed Senate Bill (SB) 92 into law, which set forth new requirements focused on dam safety. As part of this legislation, dam owners must now submit inundation maps to the Department of Water Resources (DWR). After the maps are approved, the dam owner must submit an emergency action plan to the California Office of Emergency Services (Cal OES). The dam owner must submit updated plans and inundation maps every 10 years, or sooner under certain conditions. Cal OES will review and approve the emergency action plans. This legislation set forth additional provisions for the emergency action plans including compliance requirements, exercises of the plan, and coordination with local public safety agencies (Cal OES 2019).

California Water Code Section 13751

In 1949, the California Legislature concluded that collecting information on newly constructed, modified or destroyed wells would be valuable in the event of underground pollution, and would also provide geologic information to better manage California's groundwater resources. Section 13751 of the Water Code requires Well Completion Reports (WCR) forms to be filed with DWR within 60 days from the date that construction, alteration, abandonment, or destruction of a well is completed. Completed WCR forms are sent to the DWR Region Office whose boundaries include the area where the well is located (DWR 1999).

Regional

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 Regional Board and others that are necessary to achieve and maintain the water quality standards. The Regional Board regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under various 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 of the water quality problems, if 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. The latest update for the 1995 Water Quality Control Plan for the Santa Ana River Basin was issued in February 2016.

San Bernardino County Regional Municipal Separate Stormwater Sewer System (MS4) Permit

Within the San Bernardino County area of the Santa Ana River Basin, management and control of the municipal separate storm sewer system (MS4) is shared by a number of agencies, including the San Bernardino County Flood Control District, San Bernardino County, and the cities of Big Bear Lake, Chino, Chino Hills, Colton, Fontana, Grand Terrace, Highland, Lom a Linda, Montclair, Ontario, Rancho Cucamonga, Redlands, Rialto, San Bernardino, Upland, and Yucaipa.

On January 29, 2010, the Santa Ana RWQCB issued an area wide MS4 permit to the County and municipalities in San Bernardino County. Waste discharge requirements for stormwater entering municipal storm drainage systems are set forth in the MS4 permit, Order No. R8-2010-0036, NPDES No. CAS618036. This permit expired on January 29, 2015. On August 1, 2014, the San Bernardino County Flood Control District submitted a Report of Waste Discharge (ROWD) on behalf of San Bernardino County and the 16 incorporated cities within San Bernardino County. The submitted ROWD serves as the permit renewal application for the fifth term MS4 permit for San Bernardino County.

San Bernardino County Stormwater Program

The Technical Guidance Document for Water Quality Management Plans (WQMPs) for the Santa Ana Region of San Bernardino County is the guidance document for the project's stormwater design in compliance with Santa Ana RWQCB requirements for Priority Projects or Transportation Projects. The MS4 Permit requires that a preliminary project-specific WQMP be prepared for review early in the project development process and that a Final WQMP be submitted prior to the start of construction. A project specific WQMP is required to address the following:

- Develop site design measures using Low Impact Development (LID) principles
- Establish project-specific design capture volume (DCV) and applicable Hydrologic Conditions of Concern (HCOC) requirements

- Evaluate feasibility of on-site LID Best Management Practices (BMPs)
- Maximum hydrologic source control, infiltration, and biotreatment BMPs
- Select applicable source control BMPs
- Address post-construction BMP maintenance requirements (CDM 2013)

Local

City of Ontario Standard Conditions of Approval for New Development

The City's standard conditions of approval for new development for the "Ontario Ranch" projects (Resolution No. 2017-027) include the following regulations:

- **SC 3.66:** A hydrology study and drainage analysis, prepared in accordance with the San Bernardino County Hydrology Manual and the City of Ontario's Standards and Guidelines, and signed by a Civil Engineer registered in the State of California, shall be submitted to the Engineering Department prior to Grading Plan approval. Additional drainage facilities may be required as a result of the findings of the study.
- **SC 3.68:** Prior to Grading Plan approval and the issuance of a grading permit, an Erosion and Sediment Control Plan shall be submitted to, and approved by, the Engineering Department. The Erosion and Sediment Control Plan shall identify the Best Management Practices (BMPs) that will be implemented by the Project during construction in order to reduce the discharge of sediment and other pollutants into the City's storm drain system.
- **SC 3.69:** Prior to Grading Plan approval and the issuance of a grading permit, a completed Water Quality Management Plan (WQMP) shall be submitted to, and approved by, the Engineering Department. The WQMP shall be submitted using the San Bernardino County Stormwater Program's model template and shall identify all Post Construction, Site Design, Source Control, and Treatment Control Best Management Practices (BMPs), that will be incorporated into the Project, in order to minimize any potential adverse impacts to receiving waters (Ontario 2017).

City of Ontario Master Plan of Drainage

The City of Ontario's Master Plan of Drainage (MPD) is a planning level drainage study that includes the following:

- Update and evaluation of inventory and capacities of the existing City-owned storm drain facilities.
- Preparation of hydrology studies to quantify peak flow rates for runoffs during major storm events, that are based on built-out conditions as per the Land Use Plan adopted by City Council on January 27, 2010 and the Ontario Plan.

- Identification and quantification of upgrades to existing City-owned storm drain systems to provide adequate flood protection and mitigate development impacts, based on the City's latest policies and goals.
- Evaluation of alternatives to eliminate drainage deficiencies using the existing facilities to the maximum extent.
- Development of a master plan that establishes preliminary alignment and sizes for recommended future backbone drainage facilities that will ensure adequate flood protection.
- Development of project costs and prioritization for the implementation of the recommended master plan facilities (Ontario 2012).

City of Ontario Policy Plan

The City of Ontario's Policy Plan contains policies and goals addressing stormwater infrastructure. Table 5.9-1 provides a summary of these goals and policies.

Table 5.9-1 Ontario Policy Plan Goals and Policies Relevant to Hydrology and Water Quality

Goal/Policy #	Goal/Policy
ER1	A reliable and cost-effective system that permits the City to manage its diverse water resources and needs.
ER 1-5	*Groundwater Management:* We protect groundwater quality by incorporating strategies that prevent pollution, require remediation where necessary, capture and treat urban run-off, and recharge the aquifer.
ER1-6	*Urban Run-off Quantity*: We encourage the use of low impact development strategies to intercept run-off, slow the discharge rate, increase infiltration and ultimately reduce discharge volumes to traditional storm drain systems.
ER1-7	*Urban Run-off Quality*: We require the control and management of urban run-off, consistent with Regional Water Quality Control Board regulations.
S2	Minimize risk of injury, loss of life, property damage and economic and social disruption caused by flooding and inundation hazards.
S2-1	*Entitlement and Permitting Process:* We follow State guidelines and building code to determine when development proposals require hydrological studies prepared by a State-certified engineer to assess the impact that the new development will have on the flooding potential of existing development down-gradient.
S2-2	*Flood Insurance:* We will limit development in flood plains and participate in the National Flood Insurance Program.
S2-5	*Storm Drain System:* We maintain and improve the storm drain system to minimize flooding
S2-6	*Use of Flood Control Facilities:* We encourage joint use of flood control facilities as open space or other types of recreational facilities.

Source: Ontario 2009.

5.9.1.2 EXISTING CONDITIONS

Regional Drainage

The City of Ontario is within the Chino Creek Watershed, which is part of the larger Santa Ana River Watershed. The Chino Creek Watershed encompasses parts of San Bernardino County, Riverside County, and Los Angeles County and includes the cities of Rancho Cucamonga, Upland, Montclair, Ontario, Fontana, Chino, and Chino Hills. It drains a basin of approximately 218 square miles from the San Gabriel Mountains

to the Santa Ana River near Corona. The watershed is intensely developed for residential, industrial, and agricultural use. As a result, the creek and its tributaries are highly polluted and receive effluent from multiple wastewater treatment plants, storm drains, and agricultural runoff.

Local Drainage

The City is divided into two distinct areas: Old Model Colony (OMC) and New Model Colony (NMC). The two areas are generally divided by Riverside Drive. The City presently owns and maintains over 136 miles of storm drains, mostly serving the OMC area of the City. In addition to the City-owned storm drains there are the State-owned storm drains along Caltrans' I-10 and SR-60 corridors. All the City and State storm drain facilities discharge to regional backbone facilities owned and operated by San Bernardino County Flood Control District that are tributary to the US Army Corps of Engineers' Prado Flood Control Basin.

The City lies in the western portion of the Santa Ana River's watershed, upstream of the Prado Flood Control Basin. It is in a 277 square-mile area referred to as Zone 1 by San Bernardino County Flood Control District (SBCFCD). Zone 1 generally slopes towards the south. Four major regional channel systems traverse Zone 1 in a north-south direction; they include San Antonio Channel, Cucamonga Channel, Day Creek Channel and San Sevaine Channel (Hunsaker 2012).

Site Hydrology

The project site currently consists of an operational dairy farm and irrigated cropland. There are large existing retention ponds that collect surface waste from the dairy farming practices. Current drainage for the southeast portion of the site surface is southerly to a dirt swale adjacent to Merrill Avenue, then westerly to a set of four corrugated steel pipes, then southerly to an earthen channel (Airport Channel) adjacent to Euclid Avenue in the City of Chino. The 25-year and 100-year existing condition peak flow rates from this area are approximately 6.2 cfs and 11.6 cfs, respectively.

The remainder of the project site surface drains southerly to an onsite detention basin, then further south to the dirt swale adjacent to Merrill Avenue via a concrete spillway. Stormwater runoff is then conveyed westerly to the set of four corrugated steel pipes, then southerly to the earthen channel (Airport Channel) adjacent to Euclid Avenue in the City of Chino. The 25-year and 100-year existing condition peak flow rates from this area are approximately 73.4 cfs and 114.0 cfs, respectively.

The total existing condition 25-year and 100-year peak flow rates from the project site are approximately 79.6 cfs and 125.6 cfs, respectively (Thienes 2019). The earthen channel adjacent to Euclid Avenue ultimately drains into the Airport Channel, which flows along the easterly side of Euclid Avenue, from Merrill Avenue through the City of Chino to the Prado Flood Control Basin.

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 U.S. EPA every two years. In addition to identifying the water bodies that are not supporting beneficial uses, 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 also identifies water bodies where 1) a Total Maximum Daily Load (TMDL) has been approved by the U.S. EPA and an implementation is available, but water quality standards are not yet met, and 2) water bodies where the water quality problem is being addressed by an action other than a TMDL and water quality standards are not yet met.

Currently, stormwater from the project site discharges to the Airport Channel, which eventually discharges into Prado Park Lake (Prado Basin). Currently, this basin is listed on the California 303(d) list as a Category 5 water body which is defined as "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 Prado Basin are nutrients and indicator bacteria (pathogens). The available information from the Regional Board 8 indicates a TMDL completion date of 2019 for nutrients. The TMDL for pathogens was approved in 2007 (SWRCB 2019).

Groundwater

The City of Ontario obtains its groundwater from the Chino Groundwater Basin. The Chino Basin is one of the largest groundwater basins in southern California and encompasses about 235 square miles of the Upper Santa Ana River watershed. It lies within portions of San Bernardino, Riverside, and Los Angeles counties. The Chino Basin has approximately 5 to 7 million-acre feet of water in storage and an estimated 1 million acre-feet of additional unused storage capacity. Prior to 1978, the Basin was in overdraft. After 1978, the Basin has been managed via adjudication by the Chino Basin Watermaster.

Groundwater quality in Chino Basin is generally good with better quality in the northern portion of the basin where recharge occurs. Generally, salinity, measured as total dissolved solids (TDS) exceeds 500 mg/l and nitrate concentrations exceed 50 mg/l south of Riverside Drive. There also are several groundwater contamination plumes that affect the City of Ontario's groundwater supply. The project site is not within any of the groundwater contamination plumes.

The project site is currently agricultural land use, including dairy operations and field crops. The site is not connected to the City's water supply and use an on-site groundwater well for irrigation of crops and other agricultural-related uses. The use of this water supply would cease upon implementation of the proposed project and the project would be connected to the City's municipal water supply. There is an existing on-site groundwater well in the northeast corner of the site that will be abandoned in accordance with DWR standards and San Bernardino County permit requirements.

Flood and Dam Inundation Zones

The project site is within Federal Emergency Management Act (FEMA) Flood Zone Designation X (Zone D), as per the FEMA FIRM Map. No. 06071C9335H dated August 28, 2008 (FEMA 2008). Zone D is an area where there are possible but undetermined flood hazards, as no analysis of flood hazards has been conducted. There are no nearby water bodies or streams that would result in flooding at the project site.

The site is also located within the dam inundation area for San Antonio Dam, which is a flood control and debris dam on San Antonio Creek. The dam is owned and operated by the Army Corp of Engineers The

reservoir behind the dam is usually dry but can fill with up to 11,880 acre-feet of water after large flooding events.

Seiche

A seiche is an oscillation of a body of water in an enclosed or semi-enclosed basin such as a reservoir, harbor, lake, or storage tank. The project site is not located near any water storage tanks or reservoirs that would be at risk of seiche during seismic activity. The nearest body of water is the San Antonio Dam, approximately 12 miles to the north. A seiche at San Antonio Dam would cover a much smaller area than a catastrophic failure of the dam and it is highly unlikely that any flood waters would reach the project site.

Tsunami

A tsunami is a great sea wave produced by undersea disturbances such as tectonic displacement or large earthquakes. The project site is approximately 30 miles from the ocean and therefore not at risk of flooding from a tsunami.

5.9.2 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 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.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold HYD-2
- Threshold HYD-3(i)

Therefore, these impacts will not be addressed in the following analysis.

5.9.3 Plans, Programs, and Policies

PPP HYD-1 The proposed project will be constructed and operated in accordance with the City's Standard Condition SC 3.66 that requires a hydrology study and drainage analysis be prepared and signed by a California registered civil engineer in accordance with the San Bernardino County Hydrology Manual and the City of Ontario's Standards and Guidelines. Additional drainage facilities may be required after review of the studies by the City.

PPP HYD-2 Any construction 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. This includes preparation of a SWPPP and an Erosion Sediment and Control Plan, as per the City of Ontario's requirements.

PPP HYD-3 The project will be constructed and operated in accordance with the San Bernardino County MS4 Permit (Order No. R8-2010-0036, NPDES No. CAS618036 as renewed by the ROWD submitted on August 1, 2014). The MS4 Permit requires new development and redevelopment projects to prepare a preliminary WQMP and a final WQMP to:

- Develop site design measures using Low Impact Development (LID) principles
- Establish project-specific design capture volume (DCV) and applicable Hydrologic Conditions of Concern (HCOC) requirements
- Evaluate feasibility of on-site LID Best Management Practices (BMPs)
- Maximize hydrologic source control, infiltration, and biotreatment BMPs
- Select applicable source control BMPs
- Address post-construction BMP maintenance requirements

PPP HYD-4 Onsite wells shall be abandoned in compliance with DWR standards and San Bernardino County well permit requirements.

5.9.4 Environmental Impacts

5.9.4.1 METHODOLOGY

A preliminary hydrology report and preliminary WQMP were prepared for the proposed project. Hydrology calculations were computed using San Bernardino County Rational Method program (by AES Software). The soil type is "B" per the San Bernardino County Hydrology Manual. The San Bernardino County Small Area Unit Hydrograph Model (also by AES Software) was used for detention calculations.

5.9.4.2 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.9-1: The proposed project would not violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. [Threshold HYD-1]

Construction

Clearing, grading, excavation, and construction activities associated with the proposed project have the potential to 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, development of the project would require compliance with the Construction General Permit (CGP) 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 requires the incorporation of BMPs to control sediment, erosion, and hazardous materials contamination of runoff during construction and prevent contaminants from reaching receiving water bodies. The SWRCB mandates that projects that disturb one or more acres of land must obtain coverage under the Statewide GCP. The GCP also requires that prior to the start of construction activities, the project applicant must file PRDs with the SWRCB, which includes a NOI, risk assessment, site map, annual fee, signed certification statement, SWPPP, and post-construction water balance calculations. The construction contractor is always required to maintain a copy of the SWPPP at the site 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. Categories of potential BMPs that would be implemented for this project are described in Table 5.9-2, *Construction BMPs*.

Table 5.9-2 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
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.

In addition, the City of Ontario requires that an erosion and sediment control plan be submitted prior to grading plan approval and the issuance of a grading permit. Implementation of the erosion control plan would address any potential erosion issues associated with the proposed grading and site preparation activities.

Submittal of the PRDs and implementation of the SWPPP and the erosion control plan throughout the construction phase of the proposed project will address anticipated and expected pollutants of concern as a result of construction activities. The proposed project would comply with all applicable water quality standards and waste discharge requirements. As a result, water quality impacts associated with construction activities would be less than significant.

Operations

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.

According to the Santa Ana RWQCB MS4 permit, this project would be classified as a Priority Development Project because it would create more than 10,000 square feet of impervious surfaces. Therefore, a preliminary WQMP and a final WQMP would be required for the proposed Project under the MS4 permit. A preliminary WQMP has been prepared by Thienes Engineering (2018) and a final WQMP will be submitted to the City prior to the start of construction.

The preliminary WQMP for the proposed project includes the following site design BMPs:

- Minimize parking lot stalls to the minimum widths necessary.
- Install hydrodynamic separators prior to entry into the underground detention chambers to remove sediment and other pollutants
- Install underground detention basins at 11 locations throughout the site for temporary detention of stormwater DCV
- Install modular wetlands systems at 11 locations throughout the site for biofiltration prior to discharge to the storm drain system.

Source control BMPs are designed to minimize the potential for pollutants to come into contact with stormwater, thereby limiting the potential for water quality impacts downstream. A variety of source control BMPs will be incorporated into the proposed project and implemented during its operation, including the following:

- Minimize non-stormwater site runoff through efficient irrigation system design and controllers.
- Minimize trash and debris in storm runoff in parking lots, and roadways through a regular sweeping program.
- Provide solid roofs over all trash enclosures

- Provide site occupants with a copy of the project WQMP and stormwater BMPs.
- Provide site occupants and employees with education/training materials for operation and maintenance of the stormwater BMPs.
- Install stormwater placards/stenciled messages with a "No Dumping" message on all on-site/off-site storm drain inlets.

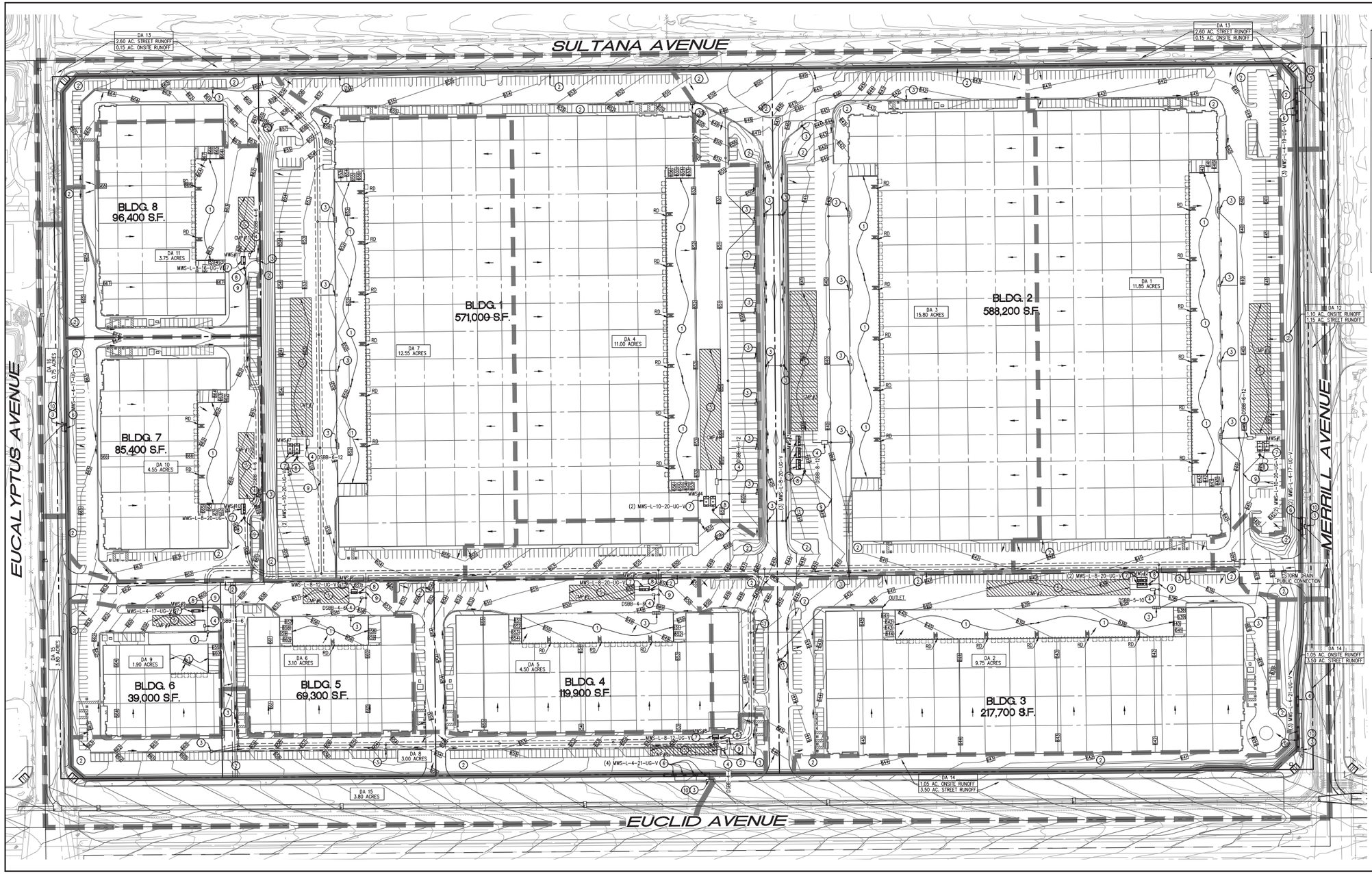
Treatment control BMPs (single or in combination) remove pollutants of concern from on-site runoff. Volumetric treatment control BMPs will mitigate (temporarily detain and treat) the DCV from the project site, based on the 24-hour, 85th percentile storm event. Flow-based BMPs are used after on-site retention and volume-based biotreatment BMPs have been implemented and are also based on the same storm event. All treatment BMPs will be designed in accordance with the procedures and spreadsheets provided in the *San Bernardino County Technical Guidance Document for WQMPs* (2013) and include:

- Hydrodynamic separators prior to entry into the underground detention chambers for the pretreatment of sediment, trash/litter, and/or oil and grease (BioClean Nutrient Separating Baffle Box)
- Underground detention chambers for the temporary retention of the DCV (Contech CMP Detention Systems)
- Modular wetlands stormwater biofiltration system (BioClean MWS Linear)

The preliminary WQMP shows that the project can treat the full design capture volume (DCV) onsite. The DCV would be captured and treated by11 CMP underground detention basins and 11 modular wetland systems (MWS). Stormwater runoff is captured via catch basins that convey the runoff into hydrodynamic separators (Debris Separating Baffle Boxes-DSBBs). The DSBBs consist of settling chambers for separating out larger solids and a media filter cartridge for capturing fine total suspended solids that may contain metals, nutrients, and bacteria. Runoff is then detained in the CMP detention basins and then flows into the modular wetland chambers. As stormwater passes through the planting soil in the modular wetland chambers, pollutants are filtered, absorbed, and sequestered by the soil and plants. Runoff is then released into the on-site storm drains for eventual discharge into the regional storm drain system.

The proposed BMPs are shown in Figure 5.9-1. Buildings 1 and 2 have two CMP detention basins and two MWSs located east and west of the buildings. Building 3 through 8 have one CMP detention basin and one MWS. There is one additional CMP detention basin and one MWS that serves the parking lot south of Buildings 4, 5, and 6. In addition, the proposed project will employ irrigation systems that respond to changing weather conditions, irrigate by hydrozone, and use micro-irrigation techniques, as specified in the Ontario Ranch Specific Plan.

Figure 5.9-1 - Preliminary Water Quality Management Plan



LEGEND

1. ABOVEGROUND LOADING DOCK
2. LANDSCAPE/IRRIGATION
3. STORM DRAIN SYSTEM SIGNS "NO DUMPING – DRAINS TO RIVER"
4. BIO CLEAN NUTRIENT SEPARATING BAFFLE BOX MODEL # PER PLAN
5. UNDERGROUND CMP SYSTEM (SOLID)
6. PROPRIETARY BIOFILTRATION UNIT (FLOW-BASED) MODEL # PER PLAN
7. PROPRIETARY BIOFILTRATION UNIT (VOLUME-BASED) MODEL # PER PLAN
8. SUMP PUMP
9. PUMP DISCHARGE LOCATION
10. BIOCLEAN DVERT

NOTES:

RD ROOF DRAIN
BOUNDARY
DRAINAGE AREAS
FLOW DIRECTION

DA DMA	BMP ID
DA 1	CMP & MWS #1
DA 2	CMP & MWS #2
DA 3	CMP & MWS #3
DA 4	CMP & MWS #4
DA 5	CMP & MWS #5
DA 6	CMP & MWS #6
DA 7	CMP & MWS #7
DA 8	CMP & MWS #8
DA 9	CMP & MWS #9
DA 10	CMP & MWS #10
DA 11	CMP & MWS #11

VOLUME REQUIRED (CF)
58,015
47,734
77,354
53,854
22,031
15,177
61,442
14,687
9,302
22,276
18,359

VOLUME PROVIDED (CF)
58,052
47,822
77,541
54,031
22,125
15,304
61,470
14,751
9,374
22,426
18,413

0 200
Scale (Miles)

Source: Thienes Engineering, Inc., 2018

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As specified in the PWQMP, the HCOC requirements are achieved by using LID and hydromodification BMPs. The total volume of stormwater runoff detained by the underground CMP chambers and proprietary biofiltration units (401,309 cubic feet) is greater than the calculated volume needed to meet the HCOC requirements (280,483 cubic feet). Therefore, implementation of the project will not increase the time of concentration and the post-development runoff volume will not exceed pre-development conditions for the design storm event. Operational water quality impacts would be less than significant with implementation and maintenance of the BMPs described above and as specified in the WQMP. Also, the project will comply with all State, County, and local regulations regarding stormwater runoff during construction and operational phases of the project. Therefore, water quality standards and waste discharge requirements will not be exceeded, and surface water and groundwater quality will not be degraded. Impacts would be less than significant.

Level of Significance before Mitigation: With implementation of PPP HYD-1, PPP HYD-2, and PPP HYD-3, Impact 5.9-1 would be less than significant.

Impact 5.9-2:	**The proposed project would increase the amount of impervious surfaces but will not substantially increase the rate or amount of surface runoff in a manner which would result in potential flooding on- or offsite, create runoff water that would exceed the capacity of storm drain systems, or provide substantial additional sources of polluted runoff. [Thresholds HYD-3 (ii), (iii) and (iv)]**

The proposed project will not involve the alteration of any natural drainages or watercourses. The storm drain facilities would include an on-site internal storm drain system that discharges via catch basins to 11 underground detention chambers and 11 modular wetlands biofiltration units scattered throughout the site. The treated water would be released into the on-site storm drain system, which will eventually connect to the proposed future regional storm drain network.

There currently are no improved drainage facilities other than earthen ditches in the vicinity of the project site, since the existing land use is agricultural. However, the Ontario Ranch Business Park Specific Plan describes storm drain improvements that will be implemented as part of the project consistent with the City of Ontario's Master Plan of Drainage.

After pre-treatment, detention, and biofiltration, the on-site storm drain system will convey runoff southerly to a proposed 9.5-foot by 9.5-foot reinforced concrete box structure in Merrill Avenue. Landscaped areas adjacent to Euclid Avenue will continue to drain to the street. Storm drains will also be constructed in Eucalyptus Avenue and Euclid Avenue. Runoff from these storm drains will eventually discharge into the Airport Channel, which runs along the east side of Euclid Avenue to the Prado Flood Control Basin. The City of Chino has future plans to replace the Airport Channel with the Euclid Avenue Storm Drain, which will need to be evaluated to accommodate flow rates projected from Drainage Area XIV, including the project site as described in the Ontario Master Plan of Drainage.

Until the future storm drain infrastructure is constructed, the project will retain on-site any stormwater runoff in excess of the stormwater volume produced by a 25-year storm under existing conditions. This will prevent the stormwater discharge into the earthen channel along Merrill Avenue from exceeding its capacity in the interim period before the regional storm drain system is installed.

In general, stormwater runoff from the project site will surface drain to various catch basins scattered throughout the site. The on-site storm drain system will then convey runoff to one of the 11 DSBBs for pre-treatment, followed by a Contech CMP underground chamber, and finally to a proprietary modular wetlands system for biotreatment and filtration prior to discharge back into the on-site storm drain system and eventual discharge to Merrill Avenue. This system is designed to detain the stormwater runoff from the 2-year, one-hour storm event (i.e., the Design Capture Volume [DCV] specified in the RWQCB regulations. It also is designed to meet HCOC requirements by temporarily detaining 401,309 cubic feet of stormwater runoff so that the post-development peak flows do not exceed pre-development conditions by more than five percent.

Since the existing storm drain infrastructure does not have the capacity to accept stormwater flows in excess of the 25-year storm, the project proposes an additional detention system at the site. Flow rates that exceed the existing condition 25-year storm up to the proposed condition 100-year storm will be temporarily detained and allowed to pond in the truck yard bays throughout the site. The ponded water will then be slowly released via the proposed onsite storm drains at a rate that does not exceed the 25-year storm event runoff rate under existing conditions. Details regarding the proposed stormwater systems are provided in the hydrology report and PWQMP. (Appendices I1 and I2) Table 5.9-3 indicates the peak flow rates that would be discharged from the site for the 25-year and 100-year storm events under existing conditions and under post-development conditions with and without the proposed on-site detention.

Table 5.9-3 Proposed Peak Drainage Flow Rates from a 25-Year and 100-Year Storm

	Existing 25-Year Storm	Existing 100-Year Storm	Proposed 100-Year Without Detention	Proposed 100-Year With Detention
Peak Flow rate (cfs)	79.6	125.6	210.8	65.5

Source: Thienes Engineering 2019.
cfs = cubic feet per second

With the proposed BMPs and onsite detention, the 100-year peak flow rate from the project site to Merrill Avenue will be approximately 65.5 cfs. This is less than the peak flow rate under existing conditions for the 25-year storm (79.6 cfs). Storm drainpipe sizes and hydraulics will be determined during the final design phase to ensure that the post-development 100-year flow rate is below the existing condition 25-year flow rate.

The project would not result in the impedance or redirection of flood flows. Offsite stormwater runoff will be intercepted by the proposed future storm drain along Eucalyptus Avenue. Onsite stormwater runoff will be retained and filtered on-site prior to discharge into the existing earthen ditch along Merrill Avenue or the City's proposed future storm drain system and post-development flow rates for the 100-year storm will be less than existing condition flow rates for the 25-year storm. In general, the site will retain existing drainage patterns with eventual discharge to the earthen ditch to the south or into the proposed future storm drain along Merrill Avenue. In addition, the site is not in a 100-year floodplain or near any surface water bodies that could result in flood flows.

With the implementation of the BMPs and detention features, the project would not substantially increase the rate or amount of surface runoff in a manner that would result in on- or off-site flooding. Also, the site design LID features and on-site detention facilities will ensure that stormwater runoff does not exceed the capacity

of the storm drain system. The calculated stormwater runoff volume for the 100-year storm under post-development conditions would be less than the amount of stormwater runoff for the 25-year storm under existing conditions. In addition, the modular wetlands system will provide biofiltration and treatment prior to discharge into the storm drain system so there will not be additional sources of polluted runoff. Therefore, this impact would be less than significant.

Level of Significance before Mitigation: With implementation of PPP HYD-1 and PPP HYD-3, Impact 5.9-2 would be less than significant.

Impact 5.9-3: The proposed site is not located in tsunami or seiche zones and would not release pollutants due to inundation from a flood hazard. [Threshold HYD-4]

The project site is not within a 100-year floodplain, as per FEMA FIRM No. 06071C9335H dated August 28, 2008. It is designated as within Zone D, where no analysis of flood hazards has been conducted. However, the project site is relatively flat and there are no nearby water bodies or streams or other conditions that would result in flooding at the project site.

The project site, as well as a large portion of the City of Ontario, is within the dam inundation zone of San Antonio Dam. The dam is owned and operated by the Army Corps of Engineers and functions as a flood control and debris dam for the San Antonio River. Dams in California are monitored and inspected annually by the California Division of Safety of Dams (DSOD). In addition, dam owners are required to maintain Emergency Action Plans (EAPs) that include procedures for damage assessment and emergency warnings. An EAP identifies potential emergency conditions at a dam and specifies preplanned actions to help minimize property damage and loss of life should those conditions occur. EAPs contain procedures and information that instruct dam owners to issue early warning and notification messages to downstream emergency management authorities.

The probability of dam failure is very low and the City of Ontario has never been impacted by a major dam failure. According to the latest dam inundation map dated February 1986, the arrival time of the first flood wave would be between 8 and 10 hours after the catastrophic failure of the dam and the depth of water is estimated to be approximately two feet. This would provide ample time for implementing evacuation procedures, as specified in the City's 2018 Hazard Mitigation Plan (Ontario 2018). In addition, the proposed BMPs and LID measures at the project site would result in the treatment and biofiltration of any flood waters that enter the site and prevent pollutants from entering the regional storm drain system.

The project site is also not located near any water storage tanks or reservoirs that would result in a seiche during seismic activity. The project site is inland and approximately 30 miles from the ocean and therefore is not at risk of flooding due to tsunamis. Impacts associated with the release of pollutants due to inundation would be less than significant.

Level of Significance Before Mitigation: Impact 5.9-3 would be less than significant.

Impact 5.9-4: The proposed project would not obstruct or conflict with the implementation of a water quality control plan or sustainable groundwater management plan. [Thresholds HYD-5]

Adherence to the State GCP, implementation of the SWPPP, and adherence to the City's Erosion and Sediment Control Plan requirements, as described in detail in Impact 5.9-1, would ensure that surface and groundwater quality are not adversely impacted during construction. In addition, implementation of the LID and BMP measures at the site, including hydrodynamic separators, underground detention, and modular wetlands biofiltration will ensure that water quality is not impacted during the operational phase of the project. As a result, site development will not obstruct or conflict with the implementation of the Santa Ana River Basin Water Quality Control Plan.

The project site is currently used for agricultural uses, including dairy operations and field crops. The site currently uses groundwater from an on-site groundwater well for the irrigation of crops and other agricultural-related uses, which would cease with implementation of the proposed project. The on-site groundwater well will be abandoned per the California Department of Water Resources Standards and will require a permit from the San Bernardino DEHS and completion of a DWR 188 Well Completion Form.

Upon development, the project site will be connected to the City's public water supply and there will be no on-site wells for use of groundwater. The City manages both the potable and non-potable supplies to ensure withdrawals from the Chino Groundwater Basin do not exceed the safe yield for the Basin, as per the Chino Basin Watermaster's Optimum Basin Management Program (OBMP). Therefore, the project would not obstruct or conflict with the OBMP and impacts would be less than significant.

Level of Significance before Mitigation: With implementation of PPP HYD-2, PPP HYD-3, and PPP-HYD-4, Impact 5.9-4 would be less than significant.

5.9.5 Cumulative Impacts

Hydrology and Drainage

Cumulative projects within the Chino Watershed could increase impervious areas and increase stormwater runoff rates. However, all projects within the watershed would be required to prepare and implement WQMPs that include provisions for the capture and infiltration of runoff or the temporary detention of stormwater runoff in HCOC areas so that post-development runoff discharges do not exceed pre-development runoff rates, in accordance with the NPDES MS4 permit. Thus, no significant cumulative drainage impacts would occur, and project drainage impacts would not be cumulatively considerable.

Water Quality

Cumulative projects have the potential to generate pollutants during project construction and operation. All construction projects that disturb one acre or more of land would be required to prepare and implement SWPPPs in order to obtain coverage under the Statewide GCP. All projects within the watershed 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 impacts would occur and project water quality impacts would not be cumulatively considerable.

5.9.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.9-1, 5.9-2, 5.9-3, 5.9-4 and 5.9-5.

5.9.7 Mitigation Measures

No mitigation measures required.

5.9.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.9.9 References

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