4.9 HYDROLOGY AND WATER QUALITY

This section describes the existing hydrology and water quality conditions of the project site, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the Cypress Point project (proposed project) in the City of Oceanside (City). The following analysis is based on the Cypress Point Subdivision Drainage Study and Storm Water Quality Management Plan (SWQMP) that were prepared for the proposed project by Omega Engineering Consultants in 2021, and are included as Appendix H and Appendix M of this EIR.

4.9.1 Existing Conditions

Hydrologic Setting

The proposed project is located in northwestern Oceanside. The existing site is a bare, vacant lot with several feet of artificial fill. No drainage improvements currently exist on the site, and the site receives run-on from areas to the east of the site.

The San Luis Rey Hydrological Unit covers a drainage area of approximately 560 square miles. Elevations within this hydrologic unit range from over 4,300 feet to sea level (City of Oceanside 2021a). Average annual precipitation ranges from roughly 10 inches along the coastal region (the project area) to 45 inches in the mountainous area. The project area is within the Coastal Subbasin of the San Luis Rey Hydrologic Unit, which contains the San Luis Rey River. The Coastal Subbasin boundaries extend from the mouth of the San Luis Rey River at the Pacific Ocean to Rice Canyon, approximately 1 mile east of Interstate 15 (I-15). It is the third largest subbasin of the San Luis Rey Hydrologic Unit and is the most populated, containing the cities of Oceanside, Vista, Bonsall, and portions of Fallbrook (from west to east) residing within its boundaries. The lower elevations and southern/western portions, including the project area, of the subbasin are mostly urban/residential, commercial, and light industrial areas.

The San Luis Rey River has been channelized and altered over time. Surface water flows consist of surrounding tributaries supplied by intermittent releases from the Henshaw Dam and surfacing groundwater in the confluence of Couser Canyon Creek. Within the city of Oceanside, the San Luis Rey is fed by its main tributary, Pilgrim Creek, and Henshaw Dam, and the Escondido Canal diversion dam are the primary hydrologic controls of the river (City of Oceanside 2021a). The San Luis Rey River runs adjacent to the northern and western project boundary.

Surface Water Quality

The San Luis Rey River is listed on the State Water Resources Control Board's (SWRCB) 303(d) list of impaired water bodies, as shown below in Table 4.9-1. Under Section 303(d) of the Clean

Water Act (CWA), states are required to develop lists of water bodies that would not attain water quality objectives after implementation of required levels of treatment by point-source dischargers (municipalities and industries). Section 303(d) requires that the state develop a total maximum daily load (TMDL) for each of the listed pollutants as a means to alleviate the impairments within water bodies' surface water.

Table 4.9-1
Downstream Water Quality Impairments

Water Body	Impairments	TMDLs
San Luis Rey River, Lower (west of Interstate 15)	Chloride	Est 2019
	Enterococcus	Est 2021
	Fecal Coliform	Est 2021
	Phosphorus	Est 2021
	Total Dissolved Solids	Est 2019
	Total Nitrogen as N	Est 2021
	Toxicity	Est 2021
Pacific Ocean Shoreline, San Luis Rey HU, at San Luis Rey River Mouth	Esterococcus	Est 2021

Source: Appendix H
Note: TMDL = total maximum daily load

As shown in Table 4.9-1 above, the San Luis Rey River (Lower) is impaired with various pollutants. Upstream agricultural uses, urban runoff, and storm sewers are the likely sources of these pollutants.

Groundwater

The project area overlies the San Luis Rey Valley Groundwater Basin within the Mission sub-basin. The San Luis Rey Basin underlies an east-west trending alluvium-filled valley located along the western coast of San Diego County. The major hydrologic feature is the San Luis Rey River, which drains the valley overlying the basin. The basin is bounded on the east, northeast, and southeast by the contact of alluvium with impermeable Mesozoic granitic and pre-Cretaceous metamorphic rocks. In the northwest and southwest of the lower portion of the basin, alluvium is in contact with semi-permeable Eocene marine deposits and Tertiary non-marine deposits. The basin is bounded on the west by the Pacific Ocean (DWR 2004).

The San Luis Rey Valley groundwater basin is recharged by precipitation, imported irrigation water applied on upland areas, and by storm flow in the San Luis Rey River and its tributaries. Movement of groundwater in the alluvial aquifer is westward towards the Pacific Ocean. Water levels in the basin declined drastically in the 1950s and 1960s due to groundwater development and over pumping. Since the advent of imported water sources, groundwater levels have risen to

near pre-development levels and averages range from 0 to 20 feet below land surface. The estimated total storage capacity for this basin is 240,000-acre feet (DWR 2004).

According to the City, approximately 15% of the city's water comes from groundwater within the Mission Basin (City of Oceanside 2021b). The brackish groundwater pumped from the Mission Basin is extracted and treated at the Mission Basin Groundwater Purification Facility to become potable water through a reverse osmosis desalting process (City of Oceanside 2021b). The City purchases the remaining 85% of the city's water supply from the San Diego County Water Authority (SDCWA), which includes approximately half treated water and half raw water. Treated imported water is conveyed directly to the City's water distribution system, while untreated imported water is conveyed to the Robert A. Weese Filtration Plant, which serves at a capacity of 25 million gallons per day (mgd).

Flood Zone

The project site is in a Special Flood Hazard Area, as designated by the Federal Emergency Management Agency (FEMA), as seen in Flood Insurance Rate Map (FIRM) map number 06073C0752H. The entire project site is within an A99 designation, which is defined as "Areas subject to inundation by the 1-percent-annual-chance flood event, but which will ultimately be protected upon completion of an under-construction Federal flood protection system. These are areas of special flood hazard where enough progress has been made on the construction of a protection system, such as dikes, dams, and levees, to consider it complete for insurance rating purposes." (FEMA 2020). A 1% annual chance of flooding is also known as a 100-year flood. Mandatory flood insurance requirements and floodplain management standards and regulations apply to all parcels located within Zone A99.

Dam Inundation

According to the City's General Plan Public Safety Element, the areas of the city that would be inundated from the Henshaw Lake Dam include the areas surrounding the San Luis Rey River (City of Oceanside 2002). The project site is within the designated dam inundation area for the Lake Henshaw Dam. Located approximately 34 miles east of the project site, this dam was built in 1923 by the Vista Irrigation District with a capacity of 203,581-acre feet but generally contains water levels between 3,000- and 5,000-acre feet (City of Oceanside 2002).

Tsunami Inundation

The project site does not lie within the tsunami inundation area for the City of Oceanside (Cal EMA 2009).

4.9.2 Regulatory Setting

Federal

Clean Water Act

The U.S. Environmental Protection Agency (EPA) regulates water quality under the Clean Water Act (CWA) (also known as the Federal Water Pollution Control Act). Enacted in 1972, and significantly amended in subsequent years, the CWA is designed to restore and maintain the chemical, physical, and biological integrity of waters of the United States. The CWA provides the legal framework for several water quality regulations, including the National Pollutant Discharge Elimination System (NPDES). The NPDES program characterizes receiving water, identifies harmful constituents, targets potential sources of pollutants and implements a comprehensive stormwater management program. Construction and industrial activities are typically regulated under statewide general permits that are issues by the State Water Resources Control Board (SWRCB). The Regional Water Quality Control Board (RWQCB) also issues waste discharge requirements that serve as NPDES permits under the authority delegated to the RWQCBs under the CWA.

The CWA requires NPDES permits for the discharge of pollutants to waters of the United States from any point source. In 1987, the CWA was amended to require that the EPA establish regulations for permitting of municipal and industrial stormwater discharges under the NPDES permit program. In November 1990, Phase I of the urban runoff management strategy, the EPA published NPDES permit applicant requirements for municipal, industrial, and construction stormwater discharges. These requirements are implemented through permits issued by the SWRCB or the local RWQCB in which the project is located (California RWQCB San Diego Region, herein San Diego RWQCB) and/or the governing municipality where the project is located.

The EPA delegated its responsibility for administration of portions of the Clean Water Act to state and regional agencies. The Clean Water Act requires states to adopt water quality standards for receiving water bodies and to have those standards approved by the EPA. Water quality standards consist of designated beneficial uses for a particular receiving water body (e.g., wildlife habitat, agricultural supply, fishing), along with water quality criteria necessary to support those uses. Water quality criteria are prescribed concentrations or levels of constituents, such as lead, suspended sediment, and fecal coliform bacteria, or narrative statements that represent the quality of water that supports a particular use.

National and State Safe Drinking Water Acts

The federal Safe Drinking Water Act, established in 1974, is administered by the EPA and sets drinking water standards throughout the country. The drinking water standards established in the

act, as set forth in the Code of Federal Regulations (CFR), are referred to as the National Primary Drinking Water Regulations (Primary Standards; 40 CFR 141), and the National Secondary Drinking Water Regulations (Secondary Standards; 40 CFR 143). According to the EPA, the Primary Standards are legally enforceable standards that apply to public water systems. The Secondary Standards are non-enforceable guidelines regulating contaminants that may cause cosmetic or aesthetic effects in drinking water. The EPA recommends the Secondary Standards for water systems but does not require systems to comply. California passed its own Safe Drinking Water Ac in 1986 that authorizes the state's Department of Health Services to protect the public from contaminants in drinking water by establishing maximum contaminant levels (as set forth in the California Code of Regulations (CCR), Title 22, Division 4, Chapter 15) that are at least as stringent as those developed by the EPA, as required by the federal Safe Drinking Water Act.

Federal Antidegradation Policy

The Federal Antidegradation Policy (40 CCR 131.12) requires states to develop statewide antidegradation policies and identify methods for implementing them. Pursuant to this policy, state antidegradation policies and implementation methods shall, at a minimum, protect and maintain: (1) existing in-stream water uses; (2) existing water quality where the quality of the waters exceeds levels necessary to support existing beneficial uses, unless the state finds that allowing lower water quality is necessary to accommodate economic and social development in the area; and (3) water quality in waters considered an outstanding national resource. State permitting actions must be consistent with the Federal Antidegradation Policy.

State

California Toxics Rule

Because of gaps in California's regulations, the EPA promulgated the California Toxics Rule (40 CCR131.38), which established numeric water quality criteria for certain toxic substances in California surface waters. The California Toxics Rule establishes acute (i.e., short-term) and chronic (i.e., long-term) standards for water bodies that are designated by the San Diego RWQCB as having beneficial uses protective of aquatic life or human health. The California Toxics Rule criteria are appliable to the receiving waters from the project site.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) established the principal California legal and regulatory framework for water quality control. The Porter-Cologne Water Quality Control Act is embodied in the California Water Code. The California Water Code authorizes the State Water Resources Control Board (SWRCB) to implement the provisions of the CWA.

California is divided into nine regions governed by RWQCBs. The RWQCBs implement and enforce provisions of the California Water Code and the CWA under the oversight of the SWQCB. The project site is located in Region 9, also known as the San Diego Region, and is governed by the San Diego RWQCB.

Each RWQCB must formulate and adopt a water quality control plan for its region. The San Diego RWQCB has adopted and periodically amends a water quality control plan titled Water Quality Control Plan for the San Diego Basin (Basin Plan). The San Diego RWQCB Basin Plan must conform to the policies set forth in the Porter-Cologne Act as established by the SWQCB in its state water policy. The Porter-Cologne Act also provides the RWQCBs with authority to include within their basin plans water discharge prohibitions applicable to particular conditions, areas, or types of waste.

Section 303(d)—TMDLs

The CWA requires states to publish, every 2 years, an updated list of streams and lakes that are not meeting their designated uses because of excess pollutants (i.e., impaired water bodies). The list, known as the Section 303(d) list, is based on violations of water quality standards. Once a water body has been deemed impaired, a TMDL must be developed for the impairing pollutant(s). A TMDL is an estimate of the total load of pollutants from point, non-point, and natural sources that a water body may receive without exceeding applicable water quality standards (plus a margin of safety). Once established, the TMDL allocates the loads among current and future pollutant sources to the water body. Targets utilized in the TMDL do not establish new water quality objectives and are not enforceable against dischargers. Allocations made to point sources are implemented primarily through NPDES permits, particularly the MS4 permit as well as the General Industrial Permit and Construction General Permit. Additionally, once a TMDL is developed and adopted into a basin plan, the water body is removed from the Section 303(d) list.

States are required to submit the Section 303(d) list and TMDL priorities to the EPA for approval. The 2014 Section 303(d) list is the most recently adopted list (SWRCB 2014). The 2014 Section 303(d) list was adopted by the SWRCB and approved by the EPA on October 3, 2017. The project site borders the San Luis Rey River, which is identified on the 2014 303(d) list as an impaired water body.

NPDES Permits

In California, the SWRCB and its RWQCBs administer the NPDES permit program. The NPDES permits cover all construction and subsequent drainage improvements that disturb 1 acre or more, industrial activities, and municipal separate storm drain systems. Construction and industrial activities are typically regulated under statewide general permits that are issued by the SWRCB.

The SWRCB also issued a statewide general small MS4 stormwater NPDES permit for public agencies that fall under that Phase II NPDES regulations.

The NPDES permit system was established in the CWA to regulate both point source discharges (a municipal or industrial discharge at a specific location or pipe) and nonpoint source discharges (diffused runoff of water from adjacent land uses) to surface waters of the United States. For point source discharges, each NPDES permit contains limits on allowable concentrations and mass emission of pollutants contained in the discharge. For nonpoint source discharges, the NPDES program establishes a comprehensive stormwater quality program to manage urban stormwater and minimize pollution of the environment to the maximum extent practicable. The NPDES program consists of characterizing receiving water quality, identifying harmful constituents, targeting potential sources of pollutants, and implementing a comprehensive stormwater management program.

The reduction of pollutants in urban stormwater discharge to the maximum extent practicable through the use of structural and nonstructural BMPs is one of the primary objectives of the water quality regulations for MS4s. BMPs typically used to manage runoff water quality include controlling roadway and parking lot contaminants by installing filters with oil and grease absorbents at storm drain inlets, cleaning parking lots on a regular basis, incorporating peak-flow reduction and infiltration features (e.g., grass swales, infiltration trenches, and grass filter strips) into landscaping, and implementing educational programs.

Local

San Diego Basin Plan

The Basin Plan sets forth water quality objectives for constituents that could potentially cause an adverse effect or impact on the beneficial uses of water. Specifically, the San Diego Basin Plan is designed to accomplish the following:

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

The Basin Plan incorporates by reference all applicable SWRCB and RWQCB plans and policies.

Regional MS4 Permit

On May 8, 2013, the RWQCB approved a regional MS4 permit for San Diego, southern Orange, and southwest Riverside Counties (Order No. R9-2013-0001). Order No. R9-2013-0001 has been subsequently amended by Order Nos. R9-2015-0001 and R9-2015-0100. The region-wide NPDES Permit (commonly referred to as the Regional MS4 Permit) sets the framework for municipalities, such as the City of Oceanside, to implement a collaborative watershed-based approach to restore and maintain the health of surface waters. The Regional MS4 Permit requires development of Water Quality Improvement Plans (WQIPs) that will allow the City of Oceanside (and other watershed stakeholders) to prioritize and address pollutants through an appropriate suite of BMPs in each watershed.

The project lies within the San Luis Rey Watershed Management Area, and the City of Oceanside is one of the responsible municipalities for the watershed's WQIP. The San Luis Rey Watershed WQIP was approved by the RWQCB on February 12, 2016.

City of Oceanside General Plan

The City of Oceanside's General Plan Community Facilities Element contains plans, policies, objectives, and goals related to stormwater system management. The overall objective for managing the City's drainage and stormwater system is:

- Objective: To provide adequate stormwater management facilities and services for the entire community in a timely and cost-effective manner, while mitigating the environmental impacts or construction of the storm drainage system as well as stormwater runoff.

The City of Oceanside works to achieve this objective through the following nine policies:

- **Policy 6.1:** The Master Drainage Plan for the City of Oceanside shall establish standards for citywide drainage. Within each major watercourse addressed by the Plan, the City and/or developers shall assure that adequate drainage improvements and facilities are provided to handle runoff when the drainage basin is fully developed to the intensity proposed by the Land Use Element of the General Plan.
- **Policy 6.2:** All new development in the City of Oceanside shall pay drainage impact fees to defray the development's proportionate share of drainage facilities serving the basin where the new development is located.
- **Policy 6.3:** The City shall continue to participate in the National Flood Insurance Program. Any development application for construction within the 100-year floodplain shall be reviewed to ensure that the project complies with flood protection measures required by the National Flood Insurance Program. For existing developed areas within the 100-year

floodplain, these same measures and standards shall be applied if City approval of substantial improvements or upgrades is sought.

- **Policy 6.4:** To the degree that it is economically feasible and consistent with sound engineering practices and maintenance criteria, the City shall discourage disruption of the natural landform and encourage the maximum use of natural drainage ways in new development. Non-structural flood protection methods, which avoid major construction programs such as channels and favor vegetative measures to protect and stabilized land areas, should be considered as an alternative to constructing concrete channels where feasible.
- **Policy 6.5:** The City shall locate and/or design new critical facilities to minimize potential flood damage from the 100-year flood. Such facilities include those that provide emergency response (hospitals, fire stations, police stations, civil defense headquarters, utility lines, ambulance services, and sewage treatment plants). Such facilities also include those that do not provide emergency response but attract large numbers of people, such as schools, theaters and other public assembly facilities.
- **Policy 6.6:** The City shall maintain public flood control channels and storm drains through dredging, repair, desilting, and clearing as needed to prevent any loss in effective use.
- **Policy 6.7:** The City shall require appropriate and sufficient screening, fencing, landscaping, open space setbacks, or other permanent mitigation or buffering measures between drainage way corridors and adjacent and surrounding land uses. The employed measures shall be of sufficient scope to minimize, to the maximum extent possible, negative impacts to adjacent surrounding land uses from the particular drainage way corridor.
- **Policy 6.8:** The City of Oceanside shall integrate required drainage planning efforts with linear open space amenities and trail corridors through the community, while addressing the issues of life safety, attractive nuisances, and long-term maintenance responsibility and costs.
- **Policy 6.9:** The City shall comply with the sections of the federal CWA in regard to stormwater drainage.

City of Oceanside Municipal Code

Chapter 40 of the City of Oceanside Municipal Code is known as the Urban Runoff Management and Discharge Control Ordinance. The overall intent of this ordinance is to "protect the health, safety, and general welfare of Oceanside residents; to protect water resources and to improve water quality; to cause the use of management practices by the city and its citizens that will reduce the adverse effects of polluted runoff discharges on waters of the state; to secure benefits from the use of storm water as a resource; and to ensure the city is compliant with applicable state and federal law" (City of Oceanside 2020). General provisions of the Urban Management and Discharge Control Ordinance include compliance with the current and applicable RWQCB discharge permits,

requirements for discretionary approvals subject to discharge control, development of Urban Runoff Standards Manuals, and designations for permitted use of collected stormwater.

4.9.3 Thresholds of Significance

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

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
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 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.
4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

4.9.4 Impacts Analysis

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

The project is located within the San Luis Rey Hydrologic Unit (903), within the Lower San Luis Hydrologic Area (903.1) and the Mission Hydrologic Sub-Area (903.11) of the Water Quality Control Plan for the San Diego Basin (California Regional Water Quality Control Board 2016). Within this Hydrologic Sub-Area, downstream impaired 303(d) listed water bodies include the

Pacific Ocean Shoreline, San Luis Rey River Mouth impaired by enterococcus, total coliform, indicator bacteria; and San Luis Rey River and Lower Stream impaired by chloride, enterococcus, fecal coliform, phosphorus, total dissolved solids, total nitrogen, toxicity, and indicator bacteria. Total Maximum Daily Loads (TMDLs) have been accordingly established to address these pollutants for these impaired water bodies. Considering the downstream waters are impaired by these pollutants, the potential pollutants of concern that may be generated by the project based on the proposed residential use are sediment, nutrients, organic compounds, trash and debris, oxygen demanding substances, bacteria and viruses, and pesticides.

In accordance with regulations, a SWQMP has been prepared to address the project's operational impacts to water quality and the potential pollutants of concern. According the SWQMP, hydromodification management flow control structural BMPs are required for the proposed project. The SWQMP also notes that a point of compliance (POC1) is located in proximity to the project site at an outfall to a vegetated area adjacent to the San Luis Rey River. The project is not exempt from a hydromodification management plan (HMP), because the flow does not immediately drain into the river, but rather flows west approximately 0.5 mile before flowing into the river. Per the SWQMP, the project source control measures would include storm drain inlet stenciling to indicate water flows into the ocean, Integrated Pest Management program to reduce pesticide use, use efficient irrigation systems, fire sprinkler and rooftop equipment drainage to the sewer system, and regular sweeping of the site during construction. The project includes the installation of four biofiltration basins as a treatment control BMP. The project would be required to provide for ongoing implementation and maintenance of these features in accordance with the SWQMP. Implementation of the SWQMP and associated HMP source control measures, and BMPs would reduce potential operational impacts related to water quality standards or waste discharge requirements to less than significant levels.

Construction activities associated with the proposed project could result in wind and water erosion of the disturbed area leading to sediment discharges. Fuels, oils, lubricants, and other hazardous substances used during construction could be released and impact water quality. The proposed project is required to comply with the NPDES State Water Resources Control Board Construction General Permit Order No. 2009-0009-DWQ for stormwater discharges and general construction activities, and incorporate standard BMPs such as regular cleaning or sweeping of construction areas and impervious areas, and runoff controls. In compliance with the Construction General Permit Order 2009-0009-DWQ, a Stormwater Pollution Prevention Plan (SWPPP) would be prepared that specifies BMPs that would be implemented during construction to minimize impacts to water quality. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation.

Therefore, it is determined that construction and operational project impacts related to water quality standards or waste discharge requirements would be **less than significant**.

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?

The proposed project would not use groundwater during construction or operation. According to the Geotechnical Report (Appendix F), no groundwater was encountered during the field exploration and it is assumed that the groundwater depth is located at a depth of approximately 17 feet below the ground surface. Although the proposed project would result in a change in amount of impervious groundcover on the project site, the proposed project would include pervious features that include tree wells, landscaping throughout the site, and vegetated biofiltration basins. About 26.6% of the project site would be comprised of permeable surface area, which is greater than the 22% minimum requirement for sites over one acre in size per Article 30 of the City's Zoning Ordinance. Due to the depth of groundwater and the proposed type of construction and surface water management, the project is not anticipated to decrease groundwater supplies or interfere with groundwater recharge in a manner that would impede sustainable groundwater management. Therefore, project impacts related to groundwater recharge would be **less than significant**.

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 substantial erosion or siltation on or off site;

During construction, the project has potential to result in exposed soils or changes in runoff that could result in erosion or siltation. This potential impact would be minimized through the implementation of BMPs during construction in accordance with a SWPPP, as required by City regulations in conformance with the NPDES State Water Resources Control Board Construction General Permit Order No. 2009-0009-DWQ (As amended by 2010-0014-DWQ and 2012-0006-DWQ). As the project is over one acre in size, the project would be subject to the General Permit Order and required to prepare a SWPPP and comply with the associated BMPs. Preparation of a SWPPP would also be required to obtain a grading permit for the project. Construction BMPs described in the SWPPP may include, but are not limited to, measures minimizing exposed soils, silt fencing, soil binders, street sweeping, hydroseeding soils, and using sandbags, check dams or berms during rain events to direct flows. Surface drainage during project construction would be controlled through implementation of the SWQMP and SWPPP, and in accordance with NPDES regulations and provisions of the City's Grading and Erosion Control Ordinances.

During operations of the project, the site surfaces would be covered by pavement or landscaping. The proposed residences would have a drainage system to collect roof runoff.

As described above, the project would be subject to operational BMPs and stormwater management strategies outlined in the project's SWQMP. Positive surface drainage would be provided to direct surface water on-site toward the street or suitable drainage facilities. Planters would be designed with provisions for drainage to the storm drain system. Surface runoff would be controlled in a manner to avoid erosion and sedimentation in accordance with regulations and the prepared SWQMP (Appendix M). Therefore, no substantial erosion or siltation on or off site is anticipated during operation.

For the reasons outlined above, construction nor operation of the proposed project would result in substantial erosion or siltation on- or off-site, and impacts would be **less than significant**.

ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;

According to the Drainage Study performed by Omega Engineering, the project site is currently undeveloped with no permanent drainage improvements. Ground surface conditions consist of seasonal grasses and shrubs. On-site drainage is overland flow and concentrated natural flow. Runoff from the residential project area to the west flows onto the site at the dead-end of Aspen Street. It then flows across the site in a graded channel and enters a concrete drainage channel that runs along the east side of the site, discharging to a vegetated area adjacent to San Luis Rey River.

In the proposed condition, the project would collect and treat runoff prior to discharging from the site in accordance with stormwater regulations. Off-site runoff currently flows from Aspen Street and Pala Road and adjacent project areas. Private and public storm drains would intercept this flow and convey it though the site. Runoff would flow from on-site drainage would be collected and filtered at the four proposed biofiltration basins for the purpose of combined pollutant and hydromodification control.

The project's drainage study concludes that project improvements will result in an increase in peak runoff flowrate by approximately 15%. Although the project would lead to increased runoff, the amount generated is not anticipated to create adverse effects on the project site or downstream due to on-site operational management plans. The Drainage Study also calculates and concludes that the project site would not receive waters during the peak of a 100-year, 6-hour, storm event (Appendix H). Due to the designed drainage systems, the project would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site and the impact would be **less than significant**.

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;

No permanent stormwater conveyances currently exist on the vacant project site. The existing on-site drainage is natural, as it occurs via overland flow and concentrated flow in earthen ditches. A graded ditch accepts runoff from the dead end of Aspen Street and conveys it west across the site to a concrete channel that borders the site. Runoff from the residential area to the west flows onto the project site at the dead-end of Aspen Street. It then flows across the project site in a graded channel and enters a concrete drainage channel that runs along the east side of the site, discharging to a vegetated area adjacent to the San Luis Rey River. Runoff from Pala road enters the site immediately south of the intersection of Los Arbolitos Boulevard and Pala Road. This runoff flows east across the undeveloped right-of-way and discharges to the same vegetated area as the on-site flows (Appendix H). The runoff then confluences with San Luis Rey River (Lower) approximately 1,600 feet south of the site (Appendix M).

In proposed conditions, on-site areas will surface drain to the proposed private streets, and then to one of four on-site biofiltration BMPs on-site. The BMPs will drain via a private storm drain system. Flow from off-site areas that drain to the project site would be intercepted and conveyed through the project site. Runoff from off-site tributary areas and on-site areas will confluence in the proposed storm drain under Pala Road and would be discharged via a 60-inch storm drain to a headwall located at the existing point of discharge southwest of the project site.

Stormwater treatment to meet water quality requirements include four bio-basins on the project site and storm water quality areas within the public right-of-way. On-site basins include one in the common area central to the project site and three along the southern edge of the project site. Additional stormwater management areas include the landscaped areas adjacent to the public street improvement areas to treat street runoff. As described above, the SWQMP designs stormwater quality measures to remove pollutants from runoff in compliance with the City BMP Manual.

The existing municipal storm drain system has sufficient conveyance capacity to accept the proposed runoff from the site that will be reduced by the four proposed on-site biofiltration basins. The Drainage Study performed by Omega Engineering, calculates existing and proposed stormwater runoff conditions by reviewing time of concentration, peak intensity, and peak flowrate of stormwater. The study concludes that peak runoff at the project's discharge point would amount to 107.40 cubic feet per second (cfs); this represents an increase of 14.29 cfs over current conditions. Although there would be an overall increase in

runoff from the project site by approximately 15% due to project development, the Drainage Study calculates and anticipates no adverse impact as a result of the proposed development (Appendix H). As the project would not contribute runoff which would exceed existing capacity of storm drain facilities, impacts would be **less than significant**.

iv) impede or redirect flood flows?

The project site is located in an A99 Flood Zone, as designated by FEMA; these are defined as areas subject to inundation by the 1-percent-annual-chance flood event, but which will ultimately be protected upon completion of an under-construction Federal flood protection system.

As described above, no permanent stormwater conveyances currently exist on the vacant project site. The existing on-site drainage is natural, as it occurs via overland flow and concentrated flow in earthen ditches. A graded ditch accepts runoff from the dead end of Aspen Street and conveys it west across the site to a concrete channel that borders the site. Runoff from the residential area to the west flows onto the project site at the dead-end of Aspen Street. It then flows across the project site in a graded channel and enters a concrete drainage channel that runs along the east side of the site, discharging to a vegetated area adjacent to the San Luis Rey River. Runoff from Pala road enters the site immediately south of the intersection of Los Arbolitos Boulevard and Pala Road. This runoff flows east across the undeveloped right-of-way and discharges to the same vegetated area as the on-site flows (Appendix H). The runoff then confluences with San Luis Rey River (Lower) approximately 1,600 feet south of the site (Appendix M). In proposed conditions, on-site areas will surface drain to the proposed private streets, and then to one of four on-site biofiltration BMPs on-site. The BMPs will drain via a private storm drain system. Flow from off-site areas that drain to the project site would be intercepted and conveyed through the project site. Runoff from off-site tributary areas and on-site areas will confluence in the proposed storm drain under Pala Road and would be discharged via a 60-inch storm drain to a headwall located at the existing point of discharge southwest of the project site.

Due to new impervious surfaces on-site, the project would generate additional stormwater runoff that would be managed with engineering methods described above, implementation of the SWPPP and the SWQMP. There would be an overall increase in peak runoff on the project area during the post development condition that would enter existing and proposed infiltration basins. Stormwater runoff would eventually reach the San Luis Rey River as in the existing condition. However, the proposed stormwater drainage system would be equipped with a 60” storm drain with an invert that would be installed below the 100-year flood elevation per the FEMA Flood Profile for the San Luis River (point of stormwater discharge). Furthermore, the project is designed to import several feet of fill to raise the site above the 100-year flood elevation; the site will also be regraded to generate a gradual

slope of 0.5% to the south to accommodate sufficient drainage conditions. Overall, project impacts would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows and impacts would **be less than significant**.

In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

According to the FEMA Flood Insurance Rate Map (FIRM) for this site, the project is located in A99 designation, which is a Special Flood Hazard Area within a 100-year floodplain. The site is bordered by the San Luis Rey River, which could pose a seiche hazard to the project considering the river's elevation and distance relative to the project site. The project site is also within the designated dam inundation area for the Lake Henshaw Dam. However, the proposed project would import several feet of fill to raise the site above the 100-year flood elevation. According to the Tsunami Inundation Map for Emergency Planning Oceanside Quadrangle the property is not located within the inundation area (CalEMA 2009). For these reasons, it is determined that significant impacts related to the release of pollutants due to project inundation would not occur. Project impacts related to the potential release of pollutants due to project inundation would be **less than significant**.

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

The project site is located within the San Luis Rey Watershed Water Quality Improvement Plan (WQIP) area. The goal of the WQIP is to protect, preserve, enhance, and restore water quality of receiving water bodies (City of Oceanside et al. 2016). These improvements in water quality would be accomplished through an adaptive planning and management process that identifies the highest priority water quality conditions within the watershed and implementation strategies. The project is consistent with these goals by complying with the regulations as described below.

The Sustainable Groundwater Management Act has enacted sustainable groundwater management requirements. In San Diego County, there are four basins that meet the criteria as medium-priority and are subject to this regulation: Borrego Valley, San Diego River Valley, San Luis Rey Valley and San Pasqual Valley. While the site is located near the San Luis Rey River corridor, the project does not fall within the area of the San Luis Rey Valley that is considered a medium-priority basin category that requires a Groundwater Sustainability Plan (California Department of Water Resources 2019). Currently there is no adopted sustainable groundwater management plan applicable to the project site. The project does not involve the use or extraction of groundwater; the project would not significantly impact groundwater quality due to proposed engineering

methods and regulatory compliance, as discussed above. Thus, the project would not conflict with a sustainable groundwater management plan.

The SWQMP prepared for the project was based on requirements set forth in the Regional Water Quality Control Board's National Pollutant Discharge Elimination System MS4 Permit that covers the San Diego Region (Order No. R9-2013-0001). The storm water quality design was also prepared in accordance with the City's Best Management Plan (BMP) Design Manual. The project would include appropriate BMPs to reduce water quality pollutant impacts of concern during construction and operations Furthermore, the project would be required to adhere to a project specific SWPPP during construction, which would satisfy the requirements set forth by NPDES State Water Resources Control Board Construction General Permit Order No. 2009-0009-DWQ. Overall, the project would comply the San Luis Rey Watershed Water Quality Improvement Plan and would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan impacts. The project would be in compliance with all applicable regulations outlined in Section 4.9.2 above, and impacts are determined to be **less than significant**.

4.9.5 Mitigation Measures

Impacts related to hydrology and water quality as a result of project implementation are determined to be less than significant, and therefore no mitigation measures are required.

4.9.6 Level of Significance After Mitigation

No substantial impacts related to hydrology and water quality were identified; therefore, no mitigation measures are required. Impacts related to hydrology and water quality would be **less than significant**.

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