

### **3.9 HYDROLOGY AND WATER QUALITY**

This section describes the environmental and regulatory setting for hydrology and water quality. It also describes existing conditions and potential impacts related to hydrology and water quality that would result from implementation of the Project, and mitigation for potentially significant impacts, where feasible.

#### **SUMMARY OF IMPACTS**

***The Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin. The impacts are considered less than significant.***

***The Project could alter the existing drainage pattern of the sites by substantially increasing the rate or amount of runoff, create or contribute to runoff water, or impede or redirect flood flow. The Project would implement Mitigation Measure HYD-1 which includes site specific analysis and potential improvements which would reduce impacts to less than significant.***

***The Project would not result in the release of pollutants from a flood hazard, tsunami, or seiche zone. The impacts are considered less than significant.***

***The Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. The impacts are considered less than significant.***

***The residential component of the ORCC Specific Plan Project was considered within the review of potential groundwater, stormwater, and runoff impacts of this Project. Specific impact findings associated with the development of the ORCC Specific Plan Project are being evaluated in a standalone EIR.***

#### **3.9.1 Environmental Setting**

##### **Watershed and Regional Drainage**

A watershed is the geographic area draining into a river system, ocean, or other body of water through a single outlet and includes the receiving waters. The City is located within the Santa Ana River Watershed, which is the most extensive watershed in Orange County, running through a three-county area from its headwaters in the San Bernadino Mountains to its outlet in the Pacific Ocean (Orange County 2015). The Santa Ana River Watershed encompasses approximately 2,700 square miles.

The City is located near multiple hydrologic features which include rivers, the Pacific Ocean, and wetlands, which are subject to various sources of pollution within the community. The mouth of the San Gabriel River lies within City limits and drains an area of approximately 700 square miles within Los Angeles and Orange Counties. The San Gabriel River is located along the western boundary of the City. The San Gabriel River originates in Los Angeles County but empties into the ocean at Seal Beach. Additionally, the river provides an outlet for flood control basins and channels within the City. The river is



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a major source of ocean contamination after storm events due to the washing of upstream pollutants and trash into the ocean (City of Seal Beach 2003).

#### **Groundwater**

The City is located within the Orange County Groundwater Basin which is located within an area designated by the California Department of Water Resources (DWR) as Basin 8-1. The basin stores an estimated 66 million acre-feet of water, although only a fraction of this can be sustainably pumped without causing physical damage such as seawater intrusion or potential land subsidence.

The DWR has designated the Orange County Groundwater Basin as a medium-priority basin, primarily due to heavy reliance on the Basin's groundwater as a source of water supply. Sources of groundwater recharge for the Basin include Santa Ana River base flow, storm flow, imported water, recycled water, incidental recharge, and in-lieu programs (OCWD 2015).

#### **Water Quality**

The mouth of the San Gabriel River is located within the City limits, which drains an area of approximately 700 square miles within Los Angeles and Orange Counties, the Pacific oceanfront, and various wetlands areas that are subject to various sources of pollution within the community (City of Seal Beach 2003).

Within the City, the Bolsa Chica Channel also drains into Anaheim Bay, which is in the Seal Beach Naval Weapons Station between the Coastal District and Surfside Colony. It links the salt marshlands with the ocean and serves as a major drainage channel (City of Seal Beach 2003).

Pollutants could be present in stormwater runoff, including sediment, nutrients, oxygen-demanding substances, heavy metals, petroleum hydrocarbons, pathogenic bacteria, and viruses. Stormwater runoff is the principal source of pollution entering surface and ground water in the region. Typical pollutants include oil, grease, or antifreeze releases from cars or trucks; paint or paint products; leaves or yard waste; pesticides, herbicides, or fertilizers from yards and gardens; solvents and household chemicals; animal wastes, litter, or sewer leakage; and construction debris such as fresh concrete, mortar, or cement.

#### **Flooding**

Seal Beach lies along the Pacific Ocean and can be subject to coastal flooding, which occurs when water levels rise high enough to inundate areas that are normally dry. This typically occurs during a storm or during high tides (City of Seal Beach 2018).

Flood hazard zones are identified on official Flood Insurance Rate Maps (FIRM) issued by the Federal Emergency Management Agency (FEMA). The City has designated various flood hazard zones ranging from areas of reduced flood risk due to levees to areas with high-risk flood hazards. Specifically, the City includes FEMA Zone VE, Zone AE, Zone D, and Zone X (FEMA 2019). Zones VE and AE are special flood hazard areas that are high risks with a 25 percent chance of flooding during a 30-year period. Zone



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D are areas where flooding is possible, but the flood hazard is either undetermined or unstudied. Zone X are areas with moderate to low risks of floods (FEMA 2023).

The areas most vulnerable to 100-year floods are located adjacent to the San Gabriel River and the flood control channels, the main beach, the southeastern end of Electric Avenue, and parts of the Old Ranch Golf Course. The College Park East neighborhood is also susceptible to flooding during winter storms. The College Park East neighborhood drains to the Old Ranch Country Club Golf Course. The Seal Beach 2018 Evacuation Plan identified the following areas in the City as potential flooding areas (City of Seal Beach 2018):

- Parts of downtown/Old Town Seal Beach, including the Pacific Coast Highway near Seal Beach Blvd, the Pacific Coast Highway near 5<sup>th</sup> Street, 1<sup>st</sup> Street, Ocean Avenue, Seal Way, Main Street, and Marina Drive;
- The area around Leisure World, including Westminster Avenue and Seal Beach Blvd;
- The Pacific Coast Highway near the San Gabriel River;
- The College Park East neighborhood in northern Seal Beach, adjacent to the Joint Forces Training Base in Los Alamitos, and including I-405 and the northern parts of Seal Beach Blvd;
- The College Park West neighborhood near the San Gabriel River and I-405; and
- The Bridgeport area.

While not identified in the Seal Beach 2018 Evacuation Plan as a potential flooding area, the Surfside Neighborhood has experienced flooding in recent years during high tide and strong ocean swells. Surfside is located along the Pacific Ocean and Pacific Coast Highway, immediately south of Anaheim Bay.

### **Seiches and Tsunamis**

Tsunamis are seismic sea waves generated by large submarine earthquakes, volcanic eruptions, or large submarine landslides. Seiches are stationary oscillations of enclosed or partly enclosed bodies of water caused by landslides, sudden changes in atmospheric and wind pressure or earthquakes. According to the City's General Plan, seismically induced seiches are not considered a potential hazard. The tsunami hazard is considered to be low for the elevations above the principal sea bluff in the City. Areas on the beach or below the sea bluff are considered to have moderate tsunami hazard, depending on tidal conditions and their elevation with respect to sea level (City of Seal Beach 2003).

The Army Corps of Engineers has estimated a seven-to-eight-foot potential run-up for the coastal area. Assuming a coincidental highest tide, areas below the 16-to-17-foot contour level could be inundated by a tsunami. The chance of this occurring appears to be low based on existing data; but if an earthquake happened along the Newport-Inglewood fault, a tsunami of a much higher inundation level could be expected (City of Seal Beach 2003).



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#### Sea Level Rise

The City is located along the shoreline and is susceptible to the effects of sea level rise (SLR). The coastal reach between the San Gabriel River and Anaheim Bay jetties encompasses West Beach, the Seal Beach Municipal Pier and East Beach. This is the center of beach-related activity in Seal Beach due to the accessibility and proximity to Main Street, residential development and visitor serving amenities. According to the Sea Level Rise Vulnerability Assessment prepared by the City, this area is currently exposed to coastal erosion, wave run-up and flooding during extreme events. SLR has the potential to increase these hazards impacting the recreational beach areas, amenities and residential development. The Surfside Community, south of Anaheim Bay, is also exposed to the open coast and associated process of coastal erosion, wave run-up and flooding during extreme events. Located downcoast of a complete littoral barrier formed by the Anaheim Bay jetties, this segment of shoreline is particularly vulnerable to erosion and dependent on regular nourishment from the USACE to maintain a sandy beach in front of residential development. Inland low-lying areas of Seal Beach are also susceptible to potential flooding from SLR in combination with high tides and fluvial events from sources such as the San Gabriel River, Los Cerritos Wetlands and Anaheim Bay (City of Seal Beach 2019).

According to the Sea Level Rise Vulnerability Assessment, for the 2050 time horizon the “likely range” of SLR is between 0.5 to 1.0 feet with an estimated 66 percent probability that SLR will fall within this “likely range”. The likely range of SLR at the 2100 time horizon is 1.3 to 3.2 feet for a high emissions scenario (City of Seal Beach 2019).

#### 3.9.2 Regulatory Setting

##### Federal

###### Federal Clean Water Act

The federal CWA (33 USC Section 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). Section 401 of the CWA regulates surface water quality, and a Water Quality Certification is required for federal actions (including construction activities) that may result in impacts to surface water. In California, NPDES permitting authority is delegated to, and administered by, the nine RWQCBs. The Project is located within Region 8, regulated by the Santa Ana RWQCB.

###### National Pollutant Discharge Elimination System

The NPDES permit program was established by the CWA to regulate municipal and industrial discharges to surface waters of the United States, including discharges from municipal separate storm sewer systems. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and non-point source stormwater runoff. NPDES



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permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions of discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger including industrial pretreatment, pollution prevention, self-monitoring and other activities.

Developers whose projects disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres are required to file a notice on intent to obtain coverage under the NPDES Construction General Permit. The Construction General Permit requires the preparation and implementation of a stormwater pollution prevention plan (SWPPP) which must be completed before construction begins. The SWPPP should contain a site map that shows the construction site perimeter; existing and proposed buildings, lots, roadways, and stormwater collection and discharge points; general topography both before and after construction; and drainage patterns across the project site. The SWPPP must list best management practices the discharger will use to manage stormwater runoff and the placement of those BMPs.

### State

#### California Coastal Act

The State of California passed the California Coastal Act in 1976 which created protections over the State's coastal zones to promote the public safety, health, and welfare, and to protect public and private property, wildlife, marine fisheries, ocean resources, and the natural environment from deterioration and destruction from existing and future development.

#### Porter Cologne Water Quality Control Act

The State of California established the SWRCB, which oversees the nine RWQCBs, through the Porter-Cologne Water Quality Control Act (Porter-Cologne). Through the enforcement of Porter-Cologne, the SWRCB determines the beneficial uses of the waters (surface and groundwater) of the State, establishes narrative and/or numerical water quality standards, and initiates policies relating to water quality. The SWRCB and, more specifically, the RWQCB, are authorized to prescribe Waste Discharge Requirements for the discharge of waste, which may impact waters of the State. Furthermore, the development of water quality control plans, or Basin Plans, is required by Porter-Cologne to protect water quality. The SWRCB issues both General Construction Permits and Individual Permits under the auspices of the federal NPDES program.

#### State Water Resources Control Board and Regional Water Quality Control Boards

In California, the SWRCB has broad authority over water quality control issues for the state. The SWRCB is responsible for developing statewide water quality policy and exercises the powers delegated to the state by the federal government under the CWA.

Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The regional boards are required to formulate and adopt water quality control plans for all areas in the region and establish water quality objectives in the plans. The City of Seal Beach is within the jurisdiction of the Santa Ana RWQCB (Region 8). The Santa Ana RWQCB adopted a Water Quality Control Plan for the



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Santa Ana River Basin (Basin Plan) which includes the water quality standards (water quality objectives, beneficial uses, and anti-degradation policy) for the Region, regionally important water quality management and improvement initiatives, policies and practices for implementing water quality standards, and implementation plans.

### Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) is a three-bill package that passed the California state legislature and was signed into California state law by Governor Jerry Brown in September 2014. SGMA establishes a framework for long-term sustainable groundwater management across California and requires local agencies to bring over drafted basins into balanced levels of pumping and recharge. The DWR uses the California Statewide Groundwater Elevation Model Priority List to rank groundwater basins across the state according to priority levels of high, medium, low, or very low, and SGMA specifies deadlines for completion of Groundwater Sustainability Plans (GSPs) in order of basin priority. Under SGMA, high- and medium-priority basins, as designated by DWR, must establish GSPs in order of basin priority. Under SGMA, high- and medium-priority basins, as designated by DWR, must establish Groundwater Sustainability Agencies (GSAs) that oversee the preparation and implementation of a local GSP.

### Local

#### City of Seal Beach General Plan

The City's General Plan is a comprehensive long-range general plan for the physical development of the City of Seal Beach. The General Plan contains the current Housing Element Update, which was adopted in 2022 and revised in 2024. The various elements within the General Plan include goals and policies for the physical development of the City. The City's General Plan goals and policies applicable to hydrology and water quality are presented below:

#### Safety Element

- **Policy 2N:** Facilitate the proper separation of sewer and storm drain systems through construction upgrades and operation and maintenance of sewer and storm drain infrastructure to eliminate the flow of sewage into the City storm drains.
- **Policy 2O:** Facilitate coordination and participation by all of the jurisdictions that make up the Los Angeles and Santa Ana RWQCBs to improve water quality. Encourage the elimination of sewer discharges and non-point source pollution into the San Gabriel River.
- **Policy 2S:** Minimize changes in hydrology and pollutant loading, require incorporation of control, including structural and non-structural BMPs to mitigate the projected increase in pollutant loads and flows, ensure that post-development runoff rates and velocities from a site have no significant adverse impact on downstream erosion and stream habitat, minimize the quantity of storm water directed to impermeable surfaces and the MS4s, and maximize the percentage of permeable surfaces to allow more percolation of storm water into the ground.



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- **Policy 2U:** Encourage the use of water quality wetlands, biofiltration swales, watershed-scale retrofits, etc. where such measures are likely to be effective and technically and economically feasible.
- **Policy 2V:** Provide for appropriate permanent measures to reduce storm water pollutant loads in storm water from the development site.
- **Policy 2W:** Establish development guidelines for areas particularly susceptible to erosion and sediment loss.

#### City of Seal Beach Municipal Code

The City's Municipal Code includes Chapter 9.45, Floodplain Management. The chapter's purpose is to promote public health, safety, and general welfare, and to minimize public and private losses due to flood conditions by legally enforceable regulations applied uniformly throughout the community to all publicly and privately-owned land within flood prone, mudslide, or flood related erosion areas. The chapter includes provisions of methods of reducing flood losses and specific standards related to construction and development within areas of the City

### 3.9.3 Environmental Impacts

This section analyzes the Project's potential to result in significant hydrology and water quality impacts. When an impact is determined to be significant, mitigation measures are identified that would reduce or avoid impacts.

#### Methodology for Analysis

The evaluation of potential hydrologic and water quality impacts was based on a review of City documents, including the General Plan. Mapping tools provided by FEMA were also reviewed. The information obtained from these sources is summarized to establish existing conditions and to identify potential environmental effects. In determining the level of significance, the analysis assumes that the Project would comply with relevant federal, state, and local ordinances and regulations.

#### Thresholds of Significance

In accordance with the CEQA Guidelines' Appendix G Environmental Checklist, the following questions were analyzed and evaluated to determine whether the Project's impacts to hydrology and water quality are 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?*



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- *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:*
  - *Substantially increase the rate or amount of surface runoff in a manner which would result in flood on or offsite;*
  - *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantially additional sources of polluted runoff; or*
  - *Impede or redirect flood flows?*
- *In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?*
- *Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

The following issues were determined to have no impact or a less than significant impact during the NOP Scoping. These issues are summarized in Section 6.0, Effects Found Not to Be Significant, and are not discussed further in this section.

#### *Would the Project:*

- *Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?*
- *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on or offsite?*

## Impact Analysis and Mitigation Measures

### Groundwater

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<b>Impact HYD-1</b>	<b>The Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin.</b>
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### Impact Analysis

A significant impact would occur if future developments under the Project resulted in a net reduction in the groundwater supply or lower the groundwater table. As noted in Section 3.9.1, Environmental Setting, the City is located within the Orange County Groundwater Basin which is located within an area designated by the DWR as Basin 8-1. The DWR has designated the Orange County Groundwater Basin as a medium-priority basin, primarily due to heavy reliance on the Basin's groundwater as a source of water supply. Sources of groundwater recharge for the Basin include Santa Ana River base flow, storm flow, imported water, recycled water, incidental recharge, and in-lieu programs (OCWD 2015). Future



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development facilitated by the Project would likely be located within developed areas of the City and would not be anticipated to substantially interfere with groundwater recharge. The majority of the Housing Opportunity Sites and the entirety of the Main Street Program area are located on sites that are developed with existing uses or have been developed with impervious surfaces and therefore, the sites for potential future development would not be identified as an area with high groundwater recharge potential. However, Housing Opportunity Site 8 – 99 Marina Drive and the residential component of the ORCC Specific Plan Project are undeveloped and contain pervious surfaces. Therefore, there is some potential for the site to provide opportunities for groundwater recharge. However, as identified in OCWD's Groundwater Management Plan, the Santa Ana River base flow and recycled water are the largest sources of groundwater recharge for the basin (OCWD 2015). This site is an extremely small site area compared to the OC Basin and not within the basin recharge areas, therefore this Housing Opportunity Site would not result in a significant decrease in groundwater recharge potential.

A Water Supply Assessment (WSA) was prepared for the Project by Stantec Consulting Services in April 2025 (Appendix G). As identified in the WSA, the eight Housing Opportunity Sites and the Main Street Program area have existing structures that have existing water uses. These existing water demands were part of the City's and Golden State Water Company's (GSWC) demand analysis in their respective 2020 Urban Water Management Plan (UWMP). Therefore, the WSA calculated the additional demand that would result at these sites from buildout of the Project. It should be noted that Housing Opportunity Site 4 – The Shops at Rossmoor is anticipated to be served by GSWC West Orange Service Area. The remaining seven Housing Opportunity Sites and the Main Street Program would be served by the City of Seal Beach. The Housing Element Update plans for up to 1,339 new dwelling units in the City by 2029 to accommodate its RHNA allocation of 1,243 units. However, the assumed residential development potential of the Housing Element Update is developed using conservative assumptions that would develop the Housing Opportunity Sites below the maximum allowable density. For the purposes of analysis contained in this EIR, a more intense level of development (maximum buildout) was analyzed so that potential impacts resulting from projects that might propose maximum developable densities are considered as part of this EIR. Therefore, the analysis contained herein as well as the analysis contained in the WSA assumed maximum buildout under the Project.

The WSA compared the percentage increase in water demand over a 25-year period due to the Project for a normal year and the highest demand from the five-year period of multiple dry years as a worst-case scenario for portions of the Project served by the City of Seal Beach and GSWC. As shown in Section 3.17, Utilities and Service Systems, the maximum buildout scenario of the eight Housing Opportunity Sites and the Main Street Program would result in a total additional water demand of 405-acre feet per year (AFY). This includes 139 AFY for Housing Opportunity Site 4 – the Shops at Rossmoor served by GSWC and 266 AFY for the remaining seven Housing Opportunities Sites and the Main Street Program served by the City of Seal Beach. This equates to 139 AFY above the projected demands for a normal water year in 2030 established in the GSWC West Orange Service Area 2020 UWMP. Regarding the City's portion of the Project, for the remaining 7 Housing Opportunities Sites and the Main Street Program, an additional supply of 266 AFY is required above the projected demands for a normal water year in 2030 established in the City's 2020 UWMP. For multiple dry-years, the total additional water demand of 435 AFY, which equates to 282 AFY above the City's 3,570 AFY projected for the fifth dry year in 2030 and 153 AFY above GSWC's 16,330 AFY projected for the fifth dry year in 2030. Based on



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the estimated additional water required for the Project, an approximate 8 percent and 1 percent increase in supply for the City and GSWC, respectively, is needed to meet these demands.

As identified in the WSA, both the City's 2020 UWMP and GSWC's 2020 UWMP project that after 2025, the Basin Production Percentage (BPP) will be set at 85 percent. This means that the water portfolio for each retail water supplier will be composed of 85 percent groundwater and 15 percent imported water. As part of the OCWD's Groundwater Reliability Plan, the groundwater levels are managed within a safe operating range to mitigate land subsidence, provide sustainability to the basin, and reduce the risk of overdraft. OCWD assesses the basin annually and sets a BPP uniformly for all producers, which is defined as the percentage of the City's total water demand that comes from groundwater.

Per OCWD Groundwater Management Plan and Basin 8-1 Alternative, the BPP is based on estimated demands from all groundwater producers, the amount of imported water available from the Metropolitan Water District of Southern California (MET), the estimated basin operating range, basin storage conditions, the amount of recharge water available to OCWD, and other factors (OCWD 2017). Groundwater producers meet bi-annually with OCWD to establish a Replenishment Assessment (RA) based on demands estimated from the previous year and the amount of groundwater that has been pump during the year. While there is no legal limit as to how much a groundwater producer pumps from this basin, agencies that pump above the established BPP are charged a RA fee plus a Basin Equity Assessment (BEA) fee. OCWD forecasts that the basin would be able to sustain a BPP of 85 percent beyond 2025 to meet demands from groundwater producers (City of Seal Beach 2021). Since the BPP is established annually by OCWD's assessment of the OC Basin, the BPP is subject to change. For this analysis, the BPP is assumed to be held at 85 percent through 2045.

The City's projected water supplies along with GSWC West Orange Service Area's projected water supplies, identified in the respective 2020 UWMPs, would not be adequate to serve the additional demand that would result from maximum buildout of the Project. However, the City and GSWC would be able to meet the projected and additional demand associated with the Project through 2045 with a combination of groundwater production and imported water purchased. Moreover, since imported MET water purchases through Municipal Water District of Orange County (MWDOC) and the BPP within the OC Basin are established annually via agency coordination, the future developments constructed as a result of the Project would start being incorporated into this agency coordination as the future developments under this Project came online. Therefore, the estimated Project demands would start being incorporated as the eight Housing Opportunity Sites and Main Street Program were built out.

Based on MET's reliability and sustainable management of the OC Basin by OCWD, the WSA concluded that the additional demand from the Project along with the projected demands from the UWMP can be met as these additional demands would be accounted for during coordination and BPP establishment for both the City and GSWC the following year that future developments under the Project is developed. With the assumption that BPP is set at 85 percent, an 8 percent increase in demands for the City, or 282 AF during dry years, would require ground water pumping of 240 AF and purchasing of 42 AF from imported sources by the City. With an additional 1 percent increase in demand for GSWC, or 153 AFY during dry years, 130 AFY of groundwater and 23 AFY of imported water would be required by GSWC to meet these demands. This is a total increase in demand of 435 AFY during dry year, which represents approximately



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a 0.1 percent increase in total groundwater production over the estimated average within the OC Basin and a 0.05 percent increase over the total estimated average water purchased from MWDOC for retail sales. For any demands beyond the annual estimates within the City's and GSWC West Orange's service area, the City would have to increase groundwater production beyond the BPP established by OCWD, which may result in costs incurred associated with RA and BEA. The other option would be to purchase more imported water from MWDOC to provide adequate supplies to meet the increased demand.

It should be noted that Housing Opportunity Site 4 - The Shops at Rossmoor, would receive water distribution service from GSWC. This has been accounted for in the additional demand from the Project shown in the supply and demand analysis described in the WSA, which concluded that there would be adequate water supplies available to the City of Seal Beach and GSWC serve the Project during normal, dry, and multiple dry years.

This EIR includes a discussion of the residential component of the ORCC Specific Plan Project based on the site location and proposed buildout of the 167 dwelling units that are included within the City's site inventory to meet its RHNA requirements. The WSA determined that the maximum buildout scenario of the seven Housing Opportunity Sites and the Main Street Program served by the City would result in an additional water demand of 266 AFY (1,054 dwelling units) for a normal water year. Scaling to the residential component of the ORCC Specific Plan Project, the additional 167 units would result in an additional water demand of 42 AFY for a total of 308 AFY above the projected demands established in the City's 2020 UWMP. With the additional demands associated with the Project, the City would require additional water supplies to be able to meet the City's projected overall demand. As identified in the WSA, based on the estimated additional water required for the Project and the residential component of the ORCC, an approximate 9.3 percent increase in supply is required to meet these demands. Based on MET's reliability and sustainable management of the OC Basin by OCWD, the WSA concluded that the additional demand from the Project along with the projected demands from the UWMP can be met as these additional demands would be accounted for during coordination and BPP establishment for the following year. With the BPP set at 85 percent, additional demands of 308 AF would require ground water pumping of 262 AF and purchasing of 46 AF from imported sources for the City. This represents approximately a 0.12 percent increase in groundwater production over the estimated annual average within the OC Basin and a 0.05 percent increase over the estimated annual average MET water purchased for retail sales. Specific impact findings associated with the development of the ORCC Specific Plan Project are being evaluated in a standalone EIR.

For any demands beyond the annual estimates, the City and/or GSWC may have to increase groundwater production beyond the BPP established by OCWD, which may result in costs incurred associated with RA and BEA. The other option would be to purchase more imported water from MWDOC to provide adequate supplies to meet the increased demand.

Though the Project itself does not propose any specific developments at this time and approval of this Project would not result in the construction of new development, the Project would facilitate the ability for new developments to be proposed and constructed within the City. The Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project



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may impede sustainable groundwater management of the basin and impacts would be less than significant.

#### **Level of Significance Before Mitigation**

Less Than Significant Impact.

#### **Mitigation Measures**

No mitigation is necessary.

#### **Level of Significance After Mitigation**

Less Than Significant Impact.

#### Drainage Pattern

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<b>Impact HYD-2</b>	<b>The Project could 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:</b> <ul style="list-style-type: none"><li><b>i) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite;</b></li><li><b>ii) 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</b></li><li><b>iii) Impede or redirect flood flows.</b></li></ul>
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#### **Impact Analysis**

Site-specific drainage reports to evaluate hydrological impacts would be prepared as individual developments are proposed on individual Housing Opportunity Sites. However, the development of some of the Housing Opportunity Sites may result in the alteration of existing drainage patterns of the site or area and have potential adverse effects on existing surface drainage patterns caused by the creation of new impervious surfaces. These would be minimized through the required construction and post-construction stormwater controls and measures for minimizing erosion and stormwater runoff.

Full buildout of future developments resulting from Project implementation could potentially increase the rate and amount of surface runoff and could create flood hazards. As identified in Section 2.0, Project Description, the eight Housing Opportunity Sites and the Main Street Program area are within areas already developed with existing uses; therefore, development of these sites and areas with uses would not result in a substantial increase in runoff and are required to be designed to not substantially alter the drainage pattern of the area. To prevent long-term impacts related to Project operation, new developments related to Project implementation would be required to comply with City's Municipal Code Chapter 9.20, Storm Water Management Program. Municipal Code Section 9.20.015, Controls for Water Quality Management, outlines water quality management requirements for all new development and significant redevelopment projects, including requiring compliance with the Orange County Drainage Area Management Plan (DAMP). Additionally, future development resulting from Project implementation would



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be required to comply with development requirements and standards for storm drainage and stormwater runoff identified under City Municipal Code Section 11.4.10.020(H), Storm Drainage and Stormwater Runoff, including prevention of runoff, connection to the public drainage system, incorporation of design requirements and integration of BMPs, as required by the City's NPDES permit requirements. All future developments would also be required to comply with the applicable requirements of the NPDES Construction General Permit related to preparation and implementation of a SWPPP and associated BMPs during the construction period to ensure that polluted runoff does not leave the site and enter the storm drainage system.

However, there are existing storm drainage capacity issues within portions of the City. Therefore, Project implementation and development of some of the identified sites may result in flooding related impacts due to the existing drainage system in the City not providing adequate capacity. The majority of the Housing Opportunity Sites as well as the Main Street Program area are located within areas identified by FEMA as Zone X with reduced flood risk due to levees and therefore, is not anticipated to result in impeding or redirecting flood flows. However, a small portion of Housing Opportunity Site 5 – Old Ranch Town Center is located within an area identified by FEMA as Zone AE (EL 14), or a special flood hazard area with a flood elevation of 14 feet. Therefore, the development of Housing Opportunity Site 5 – Old Ranch Town Center could result in the new development impeding or redirecting flood flows and result in an impact. Housing Opportunity Site 5 – Old Ranch Town Center would be required to be designed per the FEMA flood zone requirements. The residential component of the ORCC Specific Plan Project would also be located within FEMA Zone AE, see below.

General Plan Policy 5G states the City will review and update the Master Plan of Drainage to integrate the drainage systems of the entire City into one plan and include an implementation schedule and priorities for improvements. The City's Master Plan of Drainage was last updated in 2008, and the plan identifies areas of the City's storm drainage system which require improvements ranking them from high priority projects to low priority projects. Long-range improvement needs as documented in the City's Master Plan of Drainage are prioritized and budgeted into the City's Capital Improvement Program (CIP). The City's CIP would be used as a management tool to facilitate the planning and construction of specific projects such as storm drainage improvement projects.

As outlined in Mitigation Measure HYD-1, future development projects facilitated by the Project shall be required to prepare a site-specific evaluation to determine the potential impact the proposed development project could have on the existing deficiencies to the City's storm drainage system and provide onsite mitigation measures to resolve impacts to the City's storm drain infrastructure. If it is found that using onsite mitigation measures does not resolve all impacts consistent with federal, state, and local requirements, then it shall be required to fund improvements to the storm drainage system as a condition of approval for the proposed development. As potential Housing Opportunity Sites are proposed in all areas of the City, each proposed project would have varying drainage patterns. Future development projects would be required to design and construct storm drainage systems in accordance with City standards and requirements. For potential development within identified flood zones, the development structures and associated storm drainage system would be required to be designed and constructed to meet FEMA flood zone requirements.



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As the City already has existing storm drainage capacity issues within portions of the City, future development projects facilitated by the Project could contribute to the existing issues and could result in increased impacts. Therefore, the Project identified Mitigation Measure HYD-1 to reduce potential impacts. Implementation of Mitigation Measure HYD-1 would ensure that potential impacts to storm drainage systems from future development projects facilitated by the Project are analyzed and mitigated. Therefore, the Project would have less than significant impacts.

This EIR includes a discussion of the residential component of the ORCC Specific Plan Project based on the site location and proposed buildout of the 167 dwelling units that are included within the City's site inventory to meet its RHNA requirements. The residential component of the ORCC Specific Plan is located within FEMA Flood Zone AE and has a moderate risk of flooding that would be evaluated within its own standalone EIR. Additionally, the residential component of the ORCC Specific Plan Project would be required to comply with City Municipal Code Section 11.4.10.020(H) and requirements for preparation and implementation of a SWPPP and associated BMPs. Therefore, the 167 dwelling units proposed under the ORCC Specific Plan Project were considered within the analysis of this Project. Specific impact findings associated with the development of the ORCC Specific Plan Project are being evaluated in a standalone EIR.

#### **Level of Significance Before Mitigation**

Potentially Significant Impact.

#### **Mitigation Measures**

**MM HYD-1: Stormwater Drainage Infrastructure.** Future development projects facilitated by the Housing Element and Zoning Code Update shall be required to prepare a site-specific evaluation to determine the potential impacts the proposed development project could have on the existing deficiencies to the City's storm drainage system and provide onsite mitigation measures to resolve impacts to the City's storm drain infrastructure. If it is found that using onsite mitigation measures do not resolve all impacts consistent with federal, state, and local requirements, then it shall be required to fund improvements to the storm drainage system as a condition of approval for the proposed development. The requirement for contribution to funding improvements and the anticipated cost shall be analyzed at the time of project-specific environmental analysis.

#### **Level of Significance After Mitigation**

Less Than Significant Impact with Mitigation.



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#### Project Inundation

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**Impact HYD-3      The Project would not, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.**

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#### Impact Analysis

The majority of the Housing Opportunity Sites as well as the Main Street Program area are located within areas identified as Zone X with reduced flood risk due to levees. Therefore, these sites would not be located in a flood hazard zone and would not risk the release of pollutants due to project inundation. However, a small portion of Housing Opportunity Site 5 is located within areas identified by FEMA as Zone AE (EL 14), or a special flood hazard area with a flood elevation of 14 feet. Additionally, due to the City's proximity to the Pacific Ocean, the City is at risk of tsunamis. The City's General Plan Safety Element identified that the risk of inundation by a tsunami appears to be low; however, if an earthquake occurred along the Newport-Inglewood fault, a tsunami of high inundation level could be expected (City of Seal Beach 2003).

The City's Municipal Code includes Chapter 9.45, Floodplain Management, includes provisions of methods of reducing flood losses and specific standards related to construction and development within areas of the City. Sites in identified flood areas are required to adhere to the development specifications in City's Municipal Code Section 9.45.08, Provisions for Flood Hazard Reduction. This Municipal Code section provides standards of construction in areas of special flood hazards, standards for utilities, and standards for different proposed developments and floodways.

Compliance with the City's Municipal Code requirements would reduce impacts of flooding on future development projects facilitated by the Project to less than significant. Future development of identified Housing Opportunity Sites as well as new developments within the Main Street Program area facilitated by the Project may be subject to subsequent individual environmental review to analyze its potential impacts related to flood risk. As all future development projects would be required to be designed and constructed in accordance with City requirements and standards, the future developments would be anticipated to be constructed to withstand any potential flooding impacts and would not risk the release of pollutants due to project inundation. Future developments located in flood risk or tsunami risk areas would be anticipated to be constructed to be located above the anticipated flood elevation.

Seiches are stationary oscillations of enclosed or partly enclosed bodies of water caused by landslides, sudden changes in atmospheric and wind pressure or earthquakes. As identified in the City's General Plan Safety Element, seismically induced seiches are not considered a potential hazard for the City. With minimal potential for inundation by flood, low likelihood of inundation by tsunamis, and no potential for inundation by a seiche, there would be little potential for future development sites to release pollutants into water resulting from inundation. Additionally, future development projects located within flood zones would be required to be designed and constructed in accordance with the City's flood hazard reduction standards and requirements which would reduce potential impacts. Therefore, the Project would have a less than significant impact related to releasing pollutants during inundation of future project sites.

This EIR includes a discussion of the residential component of the ORCC Specific Plan Project based on the site location and proposed buildout of the 167 dwelling units that are included within the City's site



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inventory to meet its RHNA requirements. The residential component of the ORCC Specific Plan is located within FEMA Flood Zone AE and has a moderate risk of flooding that would be evaluated within its own EIR. The residential component of the ORCC Specific Plan Project would be required to be designed and constructed in accordance with City requirements and standards. The future developments would be anticipated to be constructed to withstand any potential flooding impacts and would not risk the release of pollutants due to project inundation. Future developments located in flood risk or tsunami risk areas would be anticipated to be constructed to be located above the anticipated flood elevation. Therefore, the 167 dwelling units proposed under the ORCC Specific Plan Project were considered within the analysis of this Project. Specific impact findings associated with the development of the ORCC Specific Plan Project are being evaluated in a standalone EIR.

#### **Level of Significance Before Mitigation**

Less Than Significant Impact.

#### **Mitigation Measures**

No mitigation is necessary.

#### **Level of Significance After Mitigation**

Less Than Significant Impact.

Water Quality Control Plan or Sustainable Groundwater Management Plan

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<b>Impact HYD-4</b>	<b>The Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.</b>
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#### **Impact Analysis**

Water Quality Control Plan

The City's water quality control plan is the Basin Plan prepared by the Santa Ana RWQCB. Future residential developments facilitated by the Project would be required to implement and comply with the Basin Plan to ensure that new development minimizes potential water quality impacts. Additionally, the City has adopted regulations and requirements related to protection of water quality. Construction activities related to future development projects facilitated by the Project would be required to comply with Chapter 9.30, Storm Water Management Program, of the City's Municipal Code which includes requirements for stormwater drainage systems, polluted runoff, construction of water quality management, and enforcement and permit requirements. Any projects that include one acre or greater of soil disturbance would be required to comply with the Construction General Permit and associated NPDES regulations. Additionally, future development associated with Project implementation would be required to comply with all relevant NPDES requirements and would be required to prepare a SWPPP. The SWPPP would be required to include construction BMPs that address pollutant source reduction and provide measures of control necessary to mitigate potential pollutant sources.

To prevent long-term impacts related to operation, new developments resulting from the Project would be required to comply with City's Municipal Code Chapter 9.20, Storm Water Management Program. Municipal Code Section 9.20.015, Controls for Water Quality Management, outlines water quality



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management requirements for all new development and significant redevelopment projects, including requiring compliance with the Orange County DAMP. Additionally, future developments resulting from Project implementation would be required to comply with development requirements and standards for storm drainage and stormwater runoff identified under City Municipal Code Section 11.4.10.020(H), Storm Drainage and Stormwater Runoff, including prevention of runoff, connection to the public drainage system, incorporation of design requirements and integration of BMPs, as required by the City's NPDES permit requirements. Future developments facilitated by the Project would be required to incorporate General Plan policies which ensure that new development does not impact water quality. Implementation of City standards and requirements would ensure that future developments comply with the Basin Plan. With adherence to federal, state, and local regulations and requirements, runoff associated with both construction and regular operation of future developments facilitated by the Project would not violate any water quality control standards or any water quality control plan, and impacts would be less than significant.

#### Sustainable Groundwater Management Plan

The City is located within the Orange County Groundwater Basin which is located within an area designated by the DWR as Basin 8-1. The DWR has designated the Orange County Groundwater Basin as a medium-priority basin, primarily due to heavy reliance on the Basin's groundwater as a source of water supply. In 2014, the State of California adopted the SGMA to support and manage its groundwater sustainably and mitigate significant low groundwater levels, land subsidence, and water quality issues. SGMA requires all high- and medium-priority basins, as designated by DWR, be sustainably managed. To comply with the SGMA, the agencies within Basin 8-1, led by OCWD submitted an Alternative to a Groundwater Sustainability Plan in 2017, titled the "Basin 8-1 Alternative".

As identified in the OCWD's Groundwater Management Plan, sources of groundwater recharge for the Basin include Santa Ana River base flow, storm flow, imported water, recycled water, incidental recharge, and in-lieu programs (OCWD 2015). As the majority of the Housing Opportunity Site and the Main Street Program area are developed with existing uses including existing impervious surfaces, future development projects facilitated by the Project on these sites are not anticipated to interfere with groundwater recharge and would not conflict with the OCWD's Groundwater Management Plan. However, the City relies on groundwater and imported water for sources of potable water. The Project would increase the City's water demands and therefore would require more pumping of the groundwater basin.

OCWD collects samples and analyzes water elevation and water quality data to ensure a safe and sustainable level of groundwater production is established (OCWD 2015). The OCWD monitors the groundwater supply and operates the basin in accordance with an identified safe operating range which ensures that the basin is not over pumped leading to potential impacts such as seawater intrusion and land subsidence. As identified above under Impact HYD-1, future development projects facilitated by the Project could result in increased groundwater pumping, but not above the safe operating range for the basin and therefore would not conflict with sustainable management of the basin. Any future development projects facilitated by the Project would be required to comply with the goals and objectives of the Sustainable Groundwater Management Plan to ensure that construction and operation of the future



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project would not result in groundwater impacts. As future developments would be anticipated to comply with the Sustainable Groundwater Management Plan, impacts would be less than significant.

This EIR includes a discussion of the residential component of the ORCC Specific Plan Project based on the site location and proposed buildout of the 167 dwelling units that are included within the City's site inventory to meet its RHNA requirements. The residential component of the ORCC Specific Plan would be required to comply with federal, state, and local regulations and requirements as well as incorporate General Plan policies which ensure that new development minimize potential water quality impacts which would ensure that future developments follow the Basin Plan. Additionally, development within the City would be required to comply with the goals and objectives of the Sustainable Groundwater Management Plan. Therefore, the 167 dwelling units proposed under the ORCC Specific Plan Project were considered within the analysis of this Project. Specific impact findings associated with the development of the ORCC Specific Plan Project are being evaluated in a standalone EIR.

#### **Level of Significance Before Mitigation**

Less Than Significant Impact.

#### **Mitigation Measures**

No mitigation is necessary.

#### **Level of Significance After Mitigation**

Less Than Significant Impact.

### **3.9.4 Cumulative Impacts**

CEQA requires that EIRs evaluate the potential cumulative impacts of a project. A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (CEQA Guidelines Section 15065(a)(3)). The geographic scope for cumulative hydrology and water quality impacts is the extent of the watersheds located in Seal Beach, as described above under Section 3.9.1, Environmental Setting. This geographic scope is appropriate for hydrology and water quality because water quality impacts are localized in the watershed where the impact occurs.

As discussed in Section 3.0, Environmental Analysis, CEQA Guidelines Section 15130 requires cumulative impact analysis in EIRs to consider a list of planned and pending projects that may contribute to the cumulative impacts of a project. Section 3.0, Table 3.0-3 identifies all past, present, and probable future residential projects in the City and surrounding areas that may impact the Project. Table 3.9-1 identifies the cumulative past, present, and probable future projects from Table 3.0-3 that may drive a potential cumulative impact related to hydrology and water quality and therefore were analyzed in this cumulative discussion.



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**Table 3.9-1: Cumulative Projects Related to Hydrology and Water Quality**

#	Project Name	Location	Project Characteristics	Status	Total Dwelling Units
1	Old Ranch Country Club Project	Old Ranch Country Club, City of Seal Beach	Construction of a 116-unit, 4-level (188,500 square feet) multi-family housing development; a 51-unit, 3-level senior housing complex; medical office facility; overnight accommodation, including a bar and lounge and specialty restaurant	Preparation of EIR	167
2	Naval Weapons Station	Pacific Coast Hwy & Seal Beach Boulevard	Potential future housing developments proposed within the Naval Weapons Station	Anticipated	150
3	Water Storage Site	Within the Naval Weapons Station, approximately 1,000 feet east of Seal Beach Boulevard, near the housing community off Anchor Way	Potential future housing developments proposed within the Naval Weapons Station	Anticipated	65
4	Lampson Project	4665 Lampson Avenue, City of Los Alamitos	Redevelopment of existing office building with a residential development consisting of cluster homes, townhomes, and apartments totaling 246 units	Approved (By City of Los Alamitos)	246
10	Orange County Housing Element Sites	11061 Los Alamitos Blvd (086-521-47); 11031 Los Alamitos Blvd (086-521-46);	Candidate site identified in the County of Orange's Housing Element as a	Proposed in Housing Element Update (By Orange County)	619



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#	Project Name	Location	Project Characteristics	Status	Total Dwelling Units
		3352 Katella Ave (086-521-19); 11131 Los Alamitos Blvd (086-521-23); 11088 Wallingsford Rd (086-521-11); 11171 Los Alamitos Blvd (086-521-24)	site for potential future residential development		
11	Westminster Housing Element Sites	13251 Springdale Street (203-073-04); Dorothy Lane /Melanie Lane (203-073-05); Dorothy Lane/Lee Drive (203-073-01 and 203-073-03)	Candidate site identified in the City of Westminster's Housing Element as a site for potential future residential development	Proposed in Housing Element Update (By City of Westminster)	122

Development under the Project in combination with cumulative development identified in Table 3.9-1 could increase stormwater runoff such that water quality impacts could occur. The cumulative projects listed within Table 3.9-1 are located within the Santa Ana watershed, the geographic scope of this analysis. Projects located in other watersheds would not impact the hydrology or water quality within the City and therefore were not evaluated below. For example, Long Beach lies within the San Gabriel watershed and, as a result, those projects would not contribute to cumulative hydrologic and water quality impacts in combination with the Project and were not included in this evaluation.

The Naval Weapons Station and Water Storage Site are in FEMA Zone D and are in areas that are known to flood according to the City of Seal Beach 2018 Evacuation Plan. The Lampson Project is also located within FEMA Zone D and would drain to the City. The Orange County and Westminster Housing Element Sites are in FEMA Zone X and, therefore, would have a low risk of flooding.

The ORCC Specific Plan Project is in FEMA Zone AE and includes the ORCC golf course that serves as a drainage basin for the City. Development of the ORCC Specific Plan Project would reconfigure the drainage basin. However, new development and redevelopment within the City would be subject to City, state, and federal policies and ordinances, design, guidelines, the Zoning Code, and other applicable regulatory requirements that reduce impacts related to water quality on a project-by-project basis. Overall, implementation of the Project and cumulative developments would not substantially increase the total area of impervious surface in the area; would not result in substantial groundwater use within the entire groundwater basin or affect groundwater recharge; and would not modify the course of an existing stream or river. Required conformance with state and local policies and regulations would reduce hydrology and



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water quality impacts associated with future cumulative development. The anticipated Project related impacts from future housing development facilitated by the Project, in conjunction with cumulative development in the City, would include increased development in a previously developed area (changes in impermeable surfaces) and could result in impacts to water quality. Potential impacts concerning hydrology and water quality would be site-specific and would require evaluation on a case-by-case basis at the project level when future development is proposed including in accordance with the Housing Element Update. As required by Mitigation Measure HYD-1, each cumulative project may require separate discretionary permit approval and development subject to CEQA would address potential hydrology and water quality impacts and identify necessary mitigation measures, where appropriate. Consequently, future housing development facilitated by the Project and cumulative development would not result in significant cumulative impacts concerning violation of water quality standards or waste discharge requirements, decreased groundwater supplies or interference with groundwater recharge, alterations to existing drainage patterns, or conflicts with water quality or groundwater plans. Therefore, the Project would not cause a cumulatively considerable impact concerning hydrology and water resources.

### 3.9.5 References

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