

4.8 HYDROLOGY AND WATER QUALITY

4.8.1 Setting

a. Regional Hydrology and Drainage. The project site is located within the Froom Creek sub watershed, within the San Luis Obispo Creek watershed of the Estero Bay Hydrologic Unit. The Estero Bay Hydrologic Unit stretches roughly 80 miles between the Monterey County line to the north and the Santa Maria River to the south. Within the Estero Bay Hydrologic Unit, the San Luis Obispo Creek watershed drains approximately 84 square miles (refer to Figure 4.8-1).

The San Luis Obispo Creek watershed generally drains to the south-southwest via San Luis Obispo Creek where it meets the Pacific Ocean at Avila Beach. San Luis Obispo Creek originates in the Cuesta Grade area north of San Luis Obispo at an elevation of 2,200 feet above mean sea level, in the western slopes of the Santa Lucia Range. San Luis Obispo Creek flows south through the City of San Luis Obispo easterly adjacent to U.S. Highway 101 (U.S. 101) until it reaches the southern extent of the Irish Hills where it veers west to the ocean.

According to the Safety Element of the City of San Luis Obispo General Plan, average seasonal precipitation in the City is 22 inches and average seasonal precipitation throughout San Luis Obispo County varies from 8.5 inches (in California Valley) to 25.6 inches (in San Simeon). Flooding within the San Luis Obispo Creek system is generally caused by intense Pacific storm systems that occur during the months of December, January, February, and March. The great topographic variability of the watershed causes these systems to release large amounts of precipitation, especially along the higher ridgelines.

The watershed is dominated by agricultural land uses including ranches and open space and includes the urban core of the City of San Luis Obispo. Other land uses include the California Polytechnic State University, rural residential uses, San Luis Obispo airport, and two wastewater treatment plants.

b. Project Site Hydrology and Drainage. The project site is currently in agricultural use. The site contains permeable agricultural land, which allows for the recharge of water to the subsurface. The site is characterized by two water bodies: Prefumo Creek, which runs along the southwest border of the site, and the Cerro San Luis Drainage Channel, which bisects the site and runs north along the project boundary just south of the U.S. Post Office located at the intersection of Madonna Road and Dalidio Road. The general flow of surface water at the site is from the northeast to the southwest along the Cerro San Luis Drainage Channel and along the west side of U.S. 101, across the agricultural fields in a general widening surface flow path, finally draining into Prefumo Creek. Existing on-site drainage is shown in Figure 4.8-2.

c. Project Site Flooding. Approximately 75 percent of the Specific Plan Area is designated as Special Flood Hazard Area because it is situated in a designated 100-year floodplain as identified by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM). A 100-year flood is defined as a flood event with a one percent probability of being equaled or exceeded during any given year. Floodways are defined as stream channels plus adjacent floodplains that must be kept free of encroachment as much as





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San Luis Obispo Creek Watershed

Figure 4.8-1



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Existing Drainage and Floodplain Conditions

Figure 4.8-2



possible so that 100-year floods can occur without substantial increases to flood elevations. The north-northeastern portion of the site is not within the 100-year floodplain, and therefore, is not within a FEMA-designated floodway. The remainder of the site is located within the 100-year floodplain, and therefore, is within the FEMA-designated floodway. The extent of the 100-year floodplain is shown on Figure 4.8-2.

d. Water Quality. For undeveloped areas like San Luis Ranch, surface waters entering the watercourse from undeveloped areas usually travel over vegetative cover, resulting in little erosion or sedimentation. Urbanized areas typically contain pollutants on the ground surface that are harmful to water quality and natural ecosystems. These include heavy metals, hydrocarbons, detergents, fertilizers, and pesticides that originate from vehicle use and commercial and residential land use activities. For the most part, these pollutants are associated with sediments that collect on roadways and are flushed into the creek systems either in dry weather flows, during construction, or by rainfall. Construction activities can also create erosion and cause sediment to be transported off-site, as surface water runs through the construction site. Therefore, water quality depends primarily on the hydrologic characteristics of the drainage basin, the makeup of the soils in the watershed, and source of pollution in the watershed. The quality of stormwater varies in the region depending on climactic and land use conditions. Urban and industrial runoff generally contains more pollutants than rural runoff.

The protection of water quality within San Luis Obispo County is under the jurisdiction of the Central Coast Regional Water Quality Control Board (CCRWQCB). The CCRWQCB establishes requirements that prescribe the discharge limits and establish water quality objectives through the *Water Quality Control Plan for the Central Coast Basin* (Basin Plan (CCRWQCB March 2016)). Water quality characteristics typically measured include pH, total dissolved solids, levels of herbicides and pesticides, sediment levels, vehicle-related oils, and chemicals such as chloride, sulfate, and nitrate. Water quality objectives are established based on the designated beneficial uses for a particular surface water or groundwater basin. Surface water and groundwater quality and their beneficial uses are discussed herein.

Surface Water. The project site is currently in agricultural use including irrigated row crops. Irrigation and rainwater percolate through the soil or runoff discharge into Prefumo Creek. The runoff from the site is not currently treated and may carry contaminants such as pesticides or fertilizers, contributing to non-point source runoff including sediment, nutrients, and trace amounts of pesticides and herbicides. Runoff from the project site enters Prefumo Creek, which drains into San Luis Obispo Creek and then to the Pacific Ocean. The current water quality statuses of Prefumo Creek and San Luis Obispo Creek are discussed below.

Impaired Water Bodies. Section 303(d) of the federal Clean Water Act requires states to identify waters that do not meet water quality standards after applying effluent limits for point sources (other than publicly owned treatment works) that are based on the best practicable control technology currently available. States are then required to prioritize waters/watersheds for total maximum daily loads (TMDL) development. A TMDL is a written plan that describes how an impaired water body will meet water quality standards. It contains the following:

- A measurable feature to describe attainment of the water quality standards;
- A description of required actions to remove the impairment; and



- An allocation of responsibility among dischargers to act in the form of actions or water quality conditions for which each discharger is responsible.

The Clean Water Act requires that states develop rankings for TMDLs. California ranks TMDLs as high, medium, or low priority, based on a number of factors. These factors include the severity of impairments and the importance of the specific beneficial uses identified for that water body. Regional Boards develop schedules that set the order for TMDL completion.

States are to compile this information in a list and submit the list to the US Environmental Protection Agency for review and approval. This list is known as the 303(d) list of impaired waters. The State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs) monitor and assess water quality to prepare the Section 303(d) list and to develop TMDLs.

The site’s receiving waters are Prefumo Creek, which drains into San Luis Obispo Creek and then to the Pacific Ocean at Avila Beach. Both Prefumo Creek and San Luis Obispo Creek (below Osos Street) are listed as Category 5 on the 2010 California 303(d) List of water quality limited segments. The Category 5 listing describes a water segment where standards are not met and a TMDL is required, but not yet completed, for at least one of the pollutants being listed for this segment. Table 4.8-1 identifies the constituent pollutants for which Prefumo Creek and San Luis Obispo Creek (below Los Osos Street) are included on the Section 303(d) list.

**Table 4.8-1
 Prefumo and San Luis Obispo Creek (below Osos Street) TMDLs**

Waterbody	Pollutant	Sources	Expected TMDL Completion
Prefumo Creek	Fecal Coliform	Agriculture, Urban Runoff, Unknown nonpoint source	2021
	Low Dissolved Oxygen	Agriculture, Urban Runoff, Unknown nonpoint source	2021
	Nitrate	Agriculture, Urban Runoff, Unknown nonpoint source	2021
	Turbidity	Agriculture, Urban Runoff, Unknown nonpoint source	2021
San Luis Obispo Creek (below Osos Street)	Chloride	Agriculture, Grazing-Related Sources, Municipal Point Sources, Other Urban Runoff	2021
	Chlorpyrifos	Agriculture, Grazing-Related Sources, Other Urban Runoff	2021
	Nitrate as Nitrate (NO ₃)	Agriculture, Grazing Related Sources, Major Municipal Point Source-dray and/or wet weather discharge, Natural Sources, Upstream Impoundment, Urban Runoff/Storm Sewers	2007 (TMDL completed)
	Nutrients	Agriculture, Municipal Point Sources	2007 (TMDL completed)
	Pathogens	Agriculture, Grazing Related Sources, Major Municipal Point Source-dray and/or wet weather discharge, Natural Sources, Transient encampments, Urban Runoff/Storm Sewers	2004
	Sodium	Agriculture, Grazing Related Sources, Major Municipal Point Sources, Other Urban Runoff	2021

Source: SWRCB, 2010



Beneficial Uses. There are 20 categories of “beneficial uses” that are outlined in the Basin Plan (CCRWQCB March 2016). Each body of water in the State has a set of beneficial uses that may or may not include all 20 categories. For example, a reservoir may provide beneficial use as a municipal water supply, agricultural supply, wildlife habitat, and groundwater recharge at the same time. Different beneficial uses require different water quality control. Therefore, each beneficial use has a set of water quality objectives designed to protect that use. Table 4.8-2 contains a list of beneficial uses of Prefumo Creek.

**Table 4.8-2
 Beneficial Uses for Prefumo Creek**

Abbreviation	Beneficial Use	Definition
MUN	Municipal & Domestic Water Supply	Community, military, or individual water supply systems including, but not limited to, drinking water supply.
AGR	Agricultural Supply	Farming or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for grazing.
GWR	Ground Water Recharge	Natural or artificial recharge of ground water for purpose of future extraction or maintenance of water quality.
REC1	Contact Water Recreation	Recreational activities involving body contact with water, where ingestion of water is reasonably possible. Example: swimming, fishing, and wading.
REC2	Non-Contact Water Recreation	Recreational activities close to water, but not normally involving body contact with water. Example: picnicking, hiking, and boating.
WILD	Wildlife Habitat	Terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, and wildlife.
COLD	Cold Freshwater Habitat	Cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife.
SPWN	Spawning, Reproduction, and/or Early Development	Support for high quality aquatic habitats suitable for reproduction and early development of fish.
MIGR	Migration of Aquatic Organisms	Support for habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.
RARE	Rare, Threatened, or Endangered Species	Habitats necessary for the survival of plant and animal species identified under state or federal law as rare, threatened, or endangered.
FRSH	Freshwater Replenishment	Natural or artificial maintenance of surface water quantity or quality (e.g. salinity).
COMM	Commercial & Sport Fishing	Commercial or recreational collection of fish or other organisms including, but not limited to, uses of the organism for human consumption or bait.

Source: CCRWQCB 2016.

Water Quality Objectives. Water quality objectives are the limits or levels of water quality constituents or the characteristics of a water body that are established for the reasonable protection of beneficial uses of water. Water quality objectives are numeric limits and narrative objectives designed to ensure that bodies of water in the state can support their designated beneficial uses. At concentrations equal to or greater than the numeric objectives, constituents (or pollutants) are considered to have impaired the beneficial uses of the state’s water. In some cases, objectives are narrative (qualitative), rather than numerical. The CCRWQCB Basin Plan



provides specific water quality objectives for potential releases of pollutants into County surface waters.

Groundwater. The San Luis Obispo Valley Groundwater Basin is situated in the San Luis and Edna Valleys in central to southwest San Luis Obispo County. A rise in bedrock south of the San Luis Obispo Airport has created the two separate subsurface drainage systems. The basin is bounded on the northeast by the Santa Lucia Range, on the southwest by the San Luis Range, and on all other sides by contact with impermeable Miocene and Franciscan Group rocks and the Los Osos and Edna faults. The northwestern part of the valley is drained by San Luis Obispo, Prefumo, and Stenner Creeks. The southeastern part of the valley is drained by tributaries of Pismo and Davenport Creeks. Laguna Lake lies in the northwestern part of the valley within the City of San Luis Obispo. The basin overlies an area of approximately 12,700 acres (19.9 square miles) and is part of the Central Coast Watershed. The Edna Valley Sub-basin (approximately 4,700 acres) is entirely within unincorporated San Luis Obispo County, while the San Luis Valley Sub-basin (approximately 8,000 acres) includes both unincorporated County and the City of San Luis Obispo.

The San Luis Obispo Basin and its contributing watershed receive annual precipitation ranging between 19 and 23 inches. Groundwater is relatively shallow in this 50- to 100-foot thick unconfined aquifer. Groundwater in the basin is recharged primarily by infiltration of precipitation, applied irrigation water, and streamflow. A sizeable portion of the San Luis Obispo Valley includes urban developments with impervious surfaces that inhibit deeper percolation. Municipal water supply for the City San Luis Obispo comes from both water imported from neighboring watersheds and its water reclamation facility. Treated wastewater generated by the City is discharged into San Luis Obispo Creek, and is used to irrigate various sites, including parks, schools, sports fields, and commercial centers. The City continues to explore other approved uses and potential users of recycled water. The City of San Luis Obispo has historically drawn water from this basin, most recently during the drought of 1986 through 1990. In 2011, the City relied on groundwater to supply approximately two percent of the City's annual water demand. As discussed in more detail in Section 4.13, *Water Resources*, the City discontinued use of the groundwater as part of its drinking water system in April 2015 due to new regulations requiring additional treatment of the wells prior to use. Previously used wells remain in operable standby condition should the use of groundwater be required in the future to meet City needs. The San Luis Obispo Groundwater Basin remains a viable alternative for future groundwater pumping to supplement the City's existing water resources.

In November 2014, Cleath-Harris Geologists, Inc. (Cleath-Harris) prepared a *Hydrogeologic Description and PCE Characterization for Dalidio Laguna Ranch, San Luis Obispo County, California* report (Hydrogeology Report; refer to Appendix H), which characterized tetrachloroethene (also called perchloroethylene, or PCE) in groundwater in the vicinity of the San Luis Ranch Specific Plan Area. The project site is located adjacent to commercial uses to the northeast and residential uses to the southwest. Dry cleaning facilities have been recorded present to the north of the site as early as the 1930s. According to the Hydrogeology Report, the identified PCE groundwater contamination is attributed to spills at these hydrologically upgradient dry cleaning facilities. Shallow groundwater at the site generally flows towards the south-southwest, and wells on the project site have exhibited PCE groundwater contamination above the United States Environmental Protection Agency (U.S. EPA) Maximum Contaminant Level



(MCL) for drinking water of 5 micrograms per liter ($\mu\text{g}/\text{L}$). Cleath-Harris Analyzed analyzed PCE concentrations in four on-site wells and two off-site City wells to the south and the east of the site. The highest concentrations of PCE were detected at wells along the eastern side of the project site. PCE contamination was also identified within the shallow aquifer groundwater (refer to Appendix H for detailed PCE characterization results). There are two aquifers underlying portions of the project site. The shallow aquifer underlies most of the site, except the westernmost area, and the deep aquifer underlies the southern portion of the site. Groundwater within the deep aquifer could not be isolated in existing wells on the project site. Therefore, the PCE concentration in the deep aquifer is unknown. The domestic water well has a PCE concentration of $1.0 \mu\text{g}/\text{L}$, which is within the U.S. EPA MCL for drinking water of $5 \mu\text{g}/\text{L}$. The irrigation groundwater well has a PCE concentration of $9.5 \mu\text{g}/\text{L}$, which exceeds the U.S. EPA MCL.

e. Regulatory Setting. Federal, State, and local agencies that regulate surface water and groundwater resources and their associated water quality are regulated in California include, but are not limited to the following:

- U.S. Army Corps of Engineers
- San Luis Obispo County Flood Control and Water Conservation District
- California Department of Water Resources
- State Water Resources Control Board
- Central Coast Regional Water Quality Control Board
- California Department of Fish and Wildlife
- City of San Luis Obispo

The above agencies are responsible for the protection of watersheds, floodplains, and water quality. These agencies ensure that the hydrologic characteristics of surface water and groundwater are considered, so that the existing identified beneficial uses are not impaired. Similarly, water quality regulations are designed to limit the discharged of pollutants into the environment, maintain surface water and groundwater quality, protect fish and wildlife and their habitats, and protect beneficial uses.

Federal.

Federal Clean Water Act (CWA), 33 U.S.C. 1251 et seq. (1977). This law is the primary federal law regulating water pollution. Relevant sections include:

- Section 208, requiring that states develop programs to identify and control non-point sources of pollution, including runoff.
- Section 303, requiring states to establish and enforce water quality standards to protect and enhance beneficial uses of water for such purposes as recreation and fisheries.
- Section 304(a)(1), requiring the administrator of the U.S. Environmental Protection Agency (USEPA) to develop and publish water quality criteria that reflect the latest scientific knowledge regarding the effects of pollutants in any body of water.
- Section 313(a), requiring that federal agencies observe state and local water quality regulations.



- Section 405 of the Water Quality Act of 1987 added to Section 402(p) to the CWA. Pursuant to Section 402(p)(4) of the CWA, the EPA is required to promulgate regulations for NPDES permit applications for stormwater discharges.
- Safe Drinking Water Act, 40 U.S.C. 100 et seq. This act sets limits on concentrations of pollutants in drinking water sources.

Federal Emergency Management Agency (FEMA). FEMA is the federal agency that oversees floodplains and manages the National Flood Insurance Program (NFIP). FEMA also prepares the FIRMs for communities participating in the NFIP. The FIRMs indicate the regulatory floodplain to assist communities with land use and floodplain management decisions, so that the requirements of the NFIP are met in the event of damaging floods. However, FEMA studies and maps are not necessarily an accurate, up-to-date reflection of all physical flood risk or hazards. The City participates in the Community Rating System (CRS) of the NFIP. As such, the City is required to document and report annually on creditable activities related to the program. The City CRS Class of 7 provides for reduced insurance premiums for commercial and residential developments.

The San Luis Obispo County Flood Control and Irrigation District provides for control, disposition, and distribution of flood and stormwaters of the District and of streams flowing into the district and for protection of the watersheds and watercourses in the district from such waters. Section 22.05.040 of the San Luis Obispo County Land Use Ordinance establishes the County's standards for the control of drainage to minimize the harmful effects of stormwater runoff. However, incorporated cities within the County have their own responsibilities with regard to drainage and flood control. County restrictions on development in floodplains require that incorporated cities, at a minimum, enforce the current federal floodplain management regulations as defined in the FEMA NFIP.

U.S. Army Corps of Engineers. The Army Corps of Engineers (USACE) is the federal agency that studies, constructs, and operates regional-scale flood protection systems in partnership with state and local agencies. Specific agreements between the USACE and its state and local partners on particular projects are used to define shared financial responsibilities and regulations that affect the local partners. Any work that is within USACE jurisdiction, which includes San Luis Obispo Creek and its tributaries, requires permitting through USACE.

State.

California Department of Fish and Wildlife (CDFW). Any work that is within CDFW jurisdiction requires permitting through CDFW. Section 1602 of the Fish and Game Code requires an entity notify the CDFW prior to commencing any activity that may substantially divert or obstruct the flow of any channel or bank.

California Department of Water Resources (DWR). DWR is the state agency that studies, constructs, and operates regional-scale flood protection systems, in partnership with federal and local agencies. DWR also provides technical, financial, and emergency response assistances to local agencies related to flooding.

FloodSAFE California is a strategic multifaceted program initiated by DWR in 2006. FloodSAFE is guiding the development of regional flood management plans, which encourage regional



cooperation in identifying and addressing flood hazards. Regional flood plans include flood hazard identification, risk analyses, review of existing measures, and identification of potential projects and funding strategies. The plans emphasize multiple objectives, system resiliency, and compatibility with state goals and Integrated Regional Water Management Plans (IRWMP). DWR has the lead role to implement FloodSAFE, and works closely with State, federal, tribal, and local partners to help improve integrated flood management systems State-wide. DWR’s role is to advise and provide assistance as a resource to local jurisdictions as they pursue compliance. Table 4.8-3 provides the State-mandated requirements for local agency (including cities and counties) flood planning.

**Table 4.8-3
 Flood Risk Management Legislation and Local Responsibilities**

Planning Document Tool	State-Wide Requirements
General Plan Land Use Element	Identify and annually review areas subject to flooding (identified by FEMA or DWR); consider the location of natural resources used for groundwater recharge and stormwater management.
General Plan Conservation Element	Identify areas that may accommodate floodwater for groundwater recharge and stormwater management; in coordination with agencies, develop a water resources section.
General Plan Safety Element	Identify and revise, per new flood hazard information; establish goals, policies (objectives), and mitigation measures to protect from the risk of flooding; allows information in floodplain management ordinances to be used.
General Plan Housing Element and Regional Housing Needs Assessment	Consider and may exclude land that is not adequately protected, to avoid the risk of flooding.
Local Hazard Mitigation Plan	May adopt safety element in conjunction with local hazard mitigation plan (financial benefits).

Source: DWR, 2010.

Porter-Cologne Water Quality Control Act (1969). The Porter-Cologne Water Quality Control Act act mandates that waters of the State shall be protected such that activities that may affect waters of the State shall be regulated to attain the highest quality. The SWRCB is given authority to enforce Porter-Cologne Water Control Act as well as Section 401 of the Clean Water Act and has adopted a statewide general permit that applies to almost all stormwater discharges. This general permit, which is implemented and enforced in the San Luis Obispo area, is implemented by the local Central Coast RWQCB and requires all owners of land where construction activity occurs to:

- Eliminate or reduce non-stormwater discharges to stormwater systems and other waters of the U.S.;
- Develop and implement a Stormwater Pollution Control Plan emphasizing stormwater BMPs; and
- Perform inspections of stormwater pollution prevention measures to assess their effectiveness.

In addition, SWRCB regulations mandate a “non-degradation policy” for state waters, especially those of high quality. Under the authority of the SWRCB, the protection of water quality in San Luis Obispo Creek and its tributaries is under the jurisdiction of the Central Coast



RWQCB. The RWQCB establishes requirements prescribing the quality of point sources of discharge and establishes water quality objectives. These objectives are established based on the designated beneficial uses for a particular surface water or groundwater. Beneficial uses of San Luis Obispo Creek include municipal, domestic, and agricultural water supply, groundwater recharge, water contact and non-water contact recreation, wildlife habitat, warm and cold water habitats, migration of aquatic organisms, spawning, freshwater replenishment, sport fishing, and rare, threatened, and endangered species habitat. Within city limits of San Luis Obispo, the jurisdiction for the water quality of the San Luis Obispo Creek watershed overlaps with the city public works and utilities agencies.

In accordance with the California Water Code, the CCRWQCB has developed a Basin Plan (March 2016) designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Water quality objectives for the Central Coastal Basin satisfy State and federal requirements established to protect waters for beneficial uses, and are consistent with existing statewide plans and policies.

Regional Central Coast Regional Water Quality Control Board. Since 1990, regulations have increasingly emphasized the control of water pollution from non-point sources, which include stormwater systems and runoff from point-source construction sites and industrial areas. In California, the SWRCB issues a statewide General Permit to regulate runoff from construction sites involving grading and earth moving in areas over one acre. The Construction General Permit also applies to projects of less than one acre that are part of a larger plan of common development. The SWRCB has been designated by the U.S. EPA to enforce requirements of the federal Clean Water Act, as part of the National Pollutant Discharge Elimination System (NPDES). The State Order¹ requires covered construction projects to use the “best available technology economically achievable,” and the “best conventional pollution control technology.” Each construction project subject to the Construction General Permit is required to have Stormwater Pollution Prevention Plan (SWPPP) prepared. A SWPPP identifies likely sources of sediment and pollution and incorporates measures to minimize sediment and pollution in runoff water. These objectives are established based on the designated beneficial uses for the receiving water. Under Phase II of the NPDES, the County was required to seek coverage under SWRCB’s General Permit for Municipal Separate Storm Sewer Systems (MS4s). The City of San Luis Obispo NPDES Phase II Program submitted their stormwater management plan to the CCRWQCB in July 2013 under the NPDES Phase II program. The City requires strict accordance with the program including new treatment and retention requirements for developments.

The CCRWQB’s Resolution R3-2013-0032, which outlines runoff reduction and treatment requirements, are also applicable to the project site. The Resolution R3-2013-0032 requires Central Coast municipalities to implement Post Construction Requirements to comply with the statewide Phase II Municipal General Permit. The following applicable Post-Construction Requirements are summarized below:

¹ Construction General Permit: Water Quality Order #2009-0009-DWQ, as amended by Water Quality Orders #2010-0014-DWQ and #2012-006-DWQ.



1. **Runoff Reduction:** Requirements include limiting disturbance to creeks and drainage features, minimize compaction of permeable soils, limit clearing and grading of vegetation, and minimizing impermeable surfaces.
2. **Water Quality Treatment:** Requirements include treating urban runoff with onsite source control systems such as Low Impact Development (LID) treatment systems, Bio filtration Treatment Systems, or other BMPs to reduce pollution before runoff enters the MS4.
3. **Runoff Retention:** Prevent offsite discharge from events up to the 95th percentile 24-hour rainfall event (as determined from local rainfall data).
4. **Peak Management:** Post development peak flows, discharged from the site, shall not exceed peak flows for the 10-year storm event (note: the City's Drainage Design Manual [DDM] requires that post-development peak flows from a project site do not exceed peak flows for the 2-year through 100-year storm events).

Local Policies and Regulations. The protection of water quality in San Luis Obispo Creek and its tributaries is under the jurisdiction of the RWQCB. The City also has the responsibility for regulating water quality under its NPDES MS4 permits program. The RWQCB establishes requirements prescribing the quality of point sources of discharge and establishes water quality objectives. These objectives are established based on the designated beneficial uses for a particular surface water or groundwater. Within the City limits, the jurisdiction for the water quality of the San Luis Obispo Creek watershed overlaps with the City Public Works and Utilities agencies.

City of San Luis Obispo General Plan. The City addresses hydrology and water quality issues through implementation of adopted General Plan policies and programs. These policies are found in the Land Use, Conservation and Open Space, and Safety Elements. The goals and policies from the existing General Plan relate to protecting water quality and minimizing flood hazard risk within the city. The City seeks to protect and enhance creek corridors to promote wildlife and water conservation. The City seeks to accomplish these goals by promoting responsible stormwater management techniques including using porous paving, preventing creek bank encroachment, and ensuring new developments do not decrease flood capacity of waterways. Under the General Plan, any property within the FIRM defined 100-year flood zone is considered as having a hazard potential requiring specified controls or protective measures.

Land Use Element. The Land Use Element contains the following policies which define the local regulatory setting related to hydrology and water quality:

Policy 6.6.1. Creek and Wetlands Management Objectives. *The City shall manage its lake, creeks, wetlands, floodplains, and associated wetlands to achieve the multiple objectives of:*

- B. Preventing loss of life and minimizing property damage from flooding;***
- C. Providing recreational opportunities which are compatible with fish and wildlife habitat, flood protection, and use of adjacent private properties.***

Policy 6.6.5. Runoff Reduction and Groundwater Recharge. *The City shall require the use of methods to facilitate rainwater percolation for roof areas and outdoor hardscaped areas where practical to reduce surface water runoff and aid in groundwater recharge.*



Policy 6.6.6. Development Requirements. *The City shall require project designs that minimize drainage concentrations and impervious coverage. Floodplain areas should be avoided and, where feasible, any channelization shall be designed to provide the appearance of a natural water course.*

Policy 6.6.7. Discharge of Urban Pollutants. *The City shall require appropriate runoff control measure as part of future development proposals to minimize discharge of urban pollutants (such as oil and grease) into area drainages.*

Policy 6.6.8. Erosion Control Measures. *The City shall require adequate provision of erosion control measures as part of new development to minimize sedimentation of streams and drainage channels.*

Policy 6.7.2. National Flood Program. *The City shall administer the national Flood Insurance Program standards.*

Policy 6.7.3. Creekside Care and Notification. *In maintaining creek channels to accommodate flood waters, the City shall notify owners of creeks and adjacent properties in advance of work, and use care in any needed removal of vegetation.*

Conservation and Open Space Element. The COSE contains the following goals and policies which define the local regulatory setting related to hydrology and water quality:

Policy 7.7.9. Creek Setbacks. *As further described in the Zoning Regulations, the City will maintain creek setbacks to include: an appropriate separation from the physical top of the bank, the appropriate floodway as identified in the Flood Management Policy, native riparian plants or wildlife habitat and space for paths called for by any City-adopted plan. In addition, creek setbacks should be consistent with the following:*

- A. The following items should be no closer to the wetland or creek than the setback line: buildings, streets, driveways, parking lots, above-ground utilities, and outdoor commercial storage or work areas.*
- B. Development approvals should respect the separation from creek banks and protection of floodways and natural features identified in part A above, whether or not the setback line has been established.*

Policy 8.3.3. Open Space for Safety. *Secure open space where development would be unsafe. Generally, the following locations are considered to be unsafe:*

- D. Areas subject to flooding, where the frequency, depth, or velocity of floodwaters poses an unacceptable risk to life, health, or property.*

Goal 10.1.3. Water Quality. *Protect and maintain water quality in aquifers, Laguna Lake, streams, and wetlands that supports all beneficial uses, agriculture, and wildlife habitat.*

Policy 10.2.1. Water Quality. *The City will employ the best available practices for pollution avoidance and control, and will encourage others to do likewise. "Best available practices" means behavior and technologies that result in the highest water quality, considering*



available equipment, life-cycle costs, social and environmental side effects, and the regulations of other agencies.

Policy 10.2.2. Ahwahnee Water Principles. *In planning for its water operations, programs, and services, the City will be guided by the Ahwahnee Water Principles and will encourage individuals, agencies, and organizations to follow these policies:*

- A. Community design should be compact, mixed use, walkable and transit-oriented so that automobile-generated urban runoff pollutants are minimized and the open lands that absorb water are preserved to the maximum extent possible.*
- B. Natural resources such as wetlands, floodplains, recharge zones, riparian areas, open space, and native habitats should be identified, preserved and restored as valued assets for flood protection, water quality improvement, groundwater recharge, habitat, and overall long-term water resource sustainability.*
- C. Water holding areas such as creekbeds, recessed athletic fields, ponds, cisterns, and other features that serve to recharge groundwater, reduce runoff, improve water quality and decrease flooding should be incorporated into the urban landscape.*
- D. All aspects of landscaping from the selection of plants to soil preparation and the installation of irrigation systems should be designed to reduce water demand, retain runoff, decrease flooding, and recharge groundwater.*
- E. Permeable surfaces should be used for hardscape. Impervious surfaces such as driveways, streets, and parking lots should be minimized so that land is available to absorb stormwater, which reduces polluted urban runoff, recharges groundwater, and reduces flooding.*
- F. Dual plumbing that allows grey water from showers, sinks, and washers to be reused for landscape irrigation should be included in the infrastructure of new development, consistent with state guidelines.*
- G. Community design should maximize the use of recycled water for appropriate applications including outdoor irrigation, toilet flushing, and commercial and industrial processes. Purple pipe should be installed in all new construction and remodeled buildings in anticipation of future availability of recycled water.*
- H. Urban water conservation technologies such as low-flow toilets, efficient clothes washers, and more efficient water-using industrial equipment should be incorporated in all new construction and retrofitted in remodeled buildings.*
- I. Groundwater treatment and brackish water desalination should be pursued when necessary to maximize locally available, drought-proof water supplies.*

Policy 10.3.2. Maintain Water Quality. *The City will do the following to maintain a high level of water quality, and will encourage individuals, organizations, and other agencies to do likewise:*

- A. Design and operate its water supply, treatment, and distribution system to prevent adverse effects on water quality (potential point source of pollutants such as chlorine).*
- B. Design and operate its wastewater collection and treatment system to prevent adverse effects on water quality (potential point source of pollutants such as untreated sewage and chlorine).*



- C. *Design, construct, and maintain its facilities such as parks, buildings and grounds, stormwater facilities and parking to prevent adverse effects on water quality (potential point sources for pollutants such as petroleum and non-point sources of runoff contaminated with fertilizers, pesticides, litter, and vehicle residues).*
- D. *Regulate the design, construction, and operation of private facilities over which the City has permit authority to ensure they will not have adverse effects on water quality (potential point sources for, as examples, sediment from construction and chemicals used in operations, and non-point sources for contaminated runoff).*
- E. *Participate with other agencies, in particular the California Regional Water Quality Control Board, in watershed planning and management.*
- F. *In locations subject to flooding, not allow activities, such as outdoor storage, that would be substantial sources of chemical or biological contamination during a flood, even though buildings associated with the activities would meet flood-protection standards.*
- G. *Establish standards for non-point source water pollution in cooperation with the Regional Water Quality Control Board.*
- H. *Establish a program of baseline water quality testing for City creeks.*
- I. *Identify and protect groundwater recharge areas to maintain suitable groundwater levels and to protect groundwater quality for existing and potential municipal water sources.*

Safety Element. The General Plan Safety Element contains the following relevant policies which define the local regulatory setting related to flooding:

Policy 2.1. Flood Hazard Avoidance and Reduction.

- A. *The City will develop and carry out environmentally sensitive programs to reduce or eliminate the potential for flooding in previously developed, flood-prone areas of the City.*
- B. *The City should allow flood waters to move through natural channels. Flow should be accommodated by removing debris and man-made obstructions. The City recognizes that many natural channels cannot contain runoff from a storm greater than a 25-year event. Areas flooded by storms as large as a 100-year event will be mapped.*
- C. *No new building or fill should encroach beyond, or extend over, the top-of-bank of any creek.*
- D. *Within predominantly developed areas (such as downtown) infill, remodel, and replacement projects should not displace more flood water than previous structures on the site or in the vicinity. Commercial buildings may be flood-proofed where providing floor levels above the 100-year storm flow is not appropriate due to adjacent improvements. New infill buildings may be required to have greater setbacks than their older neighbors.*
- E. *Within new development areas, substantial displacement of flood waters should be avoided by:*
 - 1. *Keeping a substantial amount of flood-prone land in the vicinity as open space;*
 - 2. *Enlarging man-made bottlenecks, such as culverts, which contribute to flood waters backing up from them;*



3. *Accommodating in such places uses which have relatively low ratios of building coverage to site area, for which shallow flooding of parking and landscape areas would cause minimum damage; and*
4. *Requiring new buildings to be construction above the 100-year flood level.*
- F. *Creek alterations shall be considered only if there is no practical alternative, consistent with the Conservation and Open Space Element.*
- G. *Development close to creeks shall be designed to avoid damage due to future creek bank erosion. Property owners shall be responsible for protecting their developments from damage caused by future bank loss due to flood flows.*

City of San Luis Obispo Municipal Code.

Municipal Code 12.08 – Stormwater Quality Ordinance. The purpose and intent of this ordinance is to ensure the health, safety, and general welfare of citizens. The ordinance also protects and enhances the quality of watercourses and water bodies in a manner pursuant to and consistent with the Clean Water Act by reducing pollutants in stormwater discharges to the maximum extent practicable, by prohibiting non-stormwater discharges to the storm drain system, and improving stormwater management. The City will adopt design standards requiring appropriate Best Management Practices (BMPs) to control the volume, rate, and potential pollutant load of stormwater runoff from newly developed property. These requirements will be incorporated, in any land use entitlement and construction or building-related permit to be issued relative to such development or redevelopment.

Municipal Code 13.08 – Sewers. The purpose and intent of this ordinance is to authorize the issuance of wastewater discharge permits to industrial users, provide for monitoring, compliance, and enforcement activities, and require significant industrial user reporting.

Municipal Code 17.16.025 – Creek Setbacks. The City’s Creek Setback requirement applies to all creeks that are shown on Figure 9 of the Conservation and Open Space Element in the General Plan, including Prefumo Creek. A 35-foot setback is required for Prefumo Creek “from the existing top of bank (or the future top of bank resulting from a creek alteration reflected in a plan approved by the City), or from the edge of the predominant pattern of riparian vegetation, whichever is farther from the creek flow line.”

Municipal Code 17.84 – Floodplain Management Regulations. Based on FEMA NFIP requirements, the City’s Floodplain Management Regulations apply to areas of special flood hazard as identified by FEMA, which are areas that FEMA has identified as subject to inundation by the 100-year flood. Approximately 75 percent of the Specific Plan Area is designated as Special Flood Hazard Area because it is situated in a designated 100-year floodplain as identified by the FEMA FIRM. As a result, the following Municipal Code provisions would apply to the project:

- The proposed development is within a special floodplain management zone as defined by the City, so the requirements of the City’s Floodplain Management Regulations for those zones must be met.
- Base flood elevations for the Project site must be determined.
- An approved Letter of Map Revision (LOMR) is required prior to issuance of building permits.



- All proposed nonresidential structures require certification from a registered civil engineer or architect that they are floodproofed in accordance with Section 17.84.050(A)(3) of the Municipal Code.
- All proposed residential structures require post-construction certification from a registered civil engineer or licensed land surveyor that their lowest floors are one foot above the base flood elevation.
- Public utilities and facilities such as sewer, gas, electrical, and water systems are to be located and constructed to minimize flood damage.

Special Floodplain Management Zone Regulations (Managed Fill Criteria). The City's Floodplain Management Regulations require that all building pads within a 100-year flood zone be raised at least 1 foot above the specified 100-year flood elevation. The regulations also state that, cumulatively, developments will not displace floodwater sufficient to raise the flood elevation more than 1 foot at any point, without causing damage to any offsite properties. Development of vacant lands in Special Floodplain Management Zone areas have been determined to have a potentially significant effect on downstream flooding and bank stability. These potential impacts can be mitigated by incorporation of the specific floodplain management policies in project design. For any development or subdivision proposal within the 100-year FEMA floodplain, on individual parcels or developments larger than 2.5 acres, the development proposal shall include a Concept Grading Plan and Master Drainage Plan. These Plans shall be submitted to the City or County Public Works Director for approval and shall meet specific criteria, including:

- The project shall not cause the 100-year flood elevation to increase more than 2.5 inches.
- The project shall not cause stream velocities to increase more than 0.3 feet per second.
- The project shall not cause a significant net decrease in floodplain storage volume unless several exceptions are met.

Municipal Code 17.84.050 Provisions for flood hazard reduction - C. Standards for Subdivisions and Other Proposed Development makes the following specifications relative to the timing and applicability of conditional letters of map revision (CLOMR) and LOMRs:

1. All new subdivisions proposals and other proposed development, including proposals for manufactured home parks and subdivisions, greater than fifty lots or five acres, whichever is the lesser, shall:
 - a. Identify the special flood hazard areas (SFHA) and base flood elevations (BFE).
 - b. Identify the elevations of lowest floors of all proposed structures and pads on the final plans.
 - c. If the site is filled above the base flood elevation, the following as-built information for each structure shall be certified by a registered civil engineer or licensed land surveyor and provided as part of an application for a letter of map revision based on fill (LOMR-F) to the floodplain administrator:
 - i. Lowest floor elevation.
 - ii. Pad elevation.
 - iii. Lowest adjacent grade.



City of San Luis Obispo NPDES Phase II Program. The City has developed a stormwater management plan (SWMP) that was submitted to the RWQCB in July 2009 under the NPDES Phase II program. Development is required to be undertaken in strict accordance with conditions and requirements of that program.

City of San Luis Obispo Waterway Management Plan (2003). The City of San Luis Obispo Waterway Management Plan incorporates three volumes: the WMP, the DDM, and the Stream Management and Maintenance Program (SMMP). The WMP is a watershed-based management plan for San Luis Obispo Creek and its tributaries. The City's WMP serves as a basis for future project planning, decision-making, and permitting. The DDM contains policies for floodplain and stream corridor management, and Best Management Practices for construction related stormwater management. The floodplain management policies in the DDM generally require that fill placed on floodplains be managed so that there is no adverse impact in terms of flooding or bank stability, and that post-development peak flows from a project site do not exceed peak flows for the 2-year through 100-year storm events. These are referred to as the "Managed Fill" and "No Adverse Impact" policies. The DDM also requires applicants that create adverse hydrologic impacts to fully mitigate them. The SMMP outlines the Best Management Practices for stream maintenance such as sediment removal, bank repair, and vegetation management.

City of San Luis Obispo Engineering Standards. The current Engineering Standards for the City include the following requirement relevant to water quality:

- All new development or redevelopment shall comply with the criteria and standards set forth in the Waterways Management Plan DDM, applicable area specific plans, and the Post-Construction Stormwater Management Requirements for Development Projects in the Central Coast Region, adopted by the Central Coast Regional Water Quality Control Board, and included in the appendices. Where requirements conflict, the stricter shall apply.
- Stormwater Control Plan, and Operation and Maintenance Plan are required prior to final approvals.
- Projects with pollution generating activities and sources must be designed to implement operation or source control measures consistent with recommendations from the California Stormwater Quality Association Handbook for New Development and Redevelopment or equivalent, including:
 - a. Accidental spills or leaks
 - b. Interior floor drains
 - c. Parking / storage areas and maintenance
 - d. Indoor and structural pest control
 - e. Landscape / outdoor pesticide use
 - f. Pools, spas, ponds, decorative fountains and other water features
 - g. Restaurants, grocery stores, and other food service operations
 - h. Refuse areas
 - i. Industrial processes
 - j. Outdoor storage of equipment or materials
 - k. Vehicle and equipment cleaning, repair, and maintenance
 - l. Fuel dispensing areas



- m. Loading docks
 - n. Fire sprinkler test water
 - o. Drain or wash water from boiler drain lines, condensate drain lines, rooftop equipment, drainage sumps, and other sources
 - p. Unauthorized non-stormwater discharges
 - q. Building and grounds maintenance
- Design should prevent water from contacting work areas, prevent pollutants from coming in contact with surfaces used by stormwater runoff, or where contact is unavoidable, and treat stormwater to remove pollutants.
 - Operations and maintenance activities required to achieve Source Control are to be included in the Operation and Maintenance Plan submitted for approvals and recorded with the property as required by the 2013 State General Stormwater Permit Section E.12.d.

4.8.2 Previous Program-Level Environmental Review

The 2014 Land Use and Circulation Element Update EIR (LUCE Update EIR) previously analyzed potential impacts to hydrology and water quality from development planned under the Land Use and Circulation Element update, including the planned development on the project site. In particular the LUCE Update EIR addressed the impact of development on floodplains, water quality and runoff, water resources, and drainage patterns. The LUCE Update EIR noted that development in the San Luis Ranch Specific Plan Area within the 100-year floodplain could be subject to flooding and have the potential to impede flow, increase the amount of impervious surfaces on the site, add new point and non-point source contamination of local waterways, and contribute to runoff water that could exceed existing drainage capacity. However, the LUCE Update EIR concluded that implementation of applicable General Plan policies, City Ordinance requirements, adherence to the City's Floodplain Management Regulations, the City's SWMP, the CCRWQCB Post Construction Requirements, and state regulatory requirements would reduce impacts associated with General Plan buildout to a less than significant level. The LUCE Update EIR also stated that individual development, such as the project, would be required to undergo separate environmental review, which may result in specific impacts that require project-specific mitigation consistent with these policies.

4.8.3 Impact Analysis

a. Methodology and Significance Thresholds. The analysis of site drainage in this section is based on the *Preliminary Storm Water Control & Treatment Strategy* (July 2016) for the project prepared by Cannon (refer to Appendix J).

An impact would occur if development of the project significantly alters drainage and hydrology. Potential impacts to drainage are assessed based on site topography, the proposed layout and elevations of potential project components, the erodibility of soils, the amount of impervious surfacing proposed, and the regulatory framework necessary for the project. In addition, pursuant to City standards, hydrological and water quality impacts would be potentially significant if:



- Flooding impacts would be considered potentially significant if shallow groundwater came in contact with building foundations and retaining walls, exposing people or structures to potentially adverse effects.
- Flooding impacts would be considered potentially significant if the development is proposed within an identified flood-prone area, as determined by the City of San Luis Obispo FIRM, thereby increasing the number of buildings exposed to the existing flood hazard; or if the new development conflicted with Flood Hazard avoidance policies in the City's Safety Element.
- Water quality impacts would be considered potentially significant if development of the project would result in the increased degradation of surface or subsurface water quality, including indirect impacts to threatened and endangered species downstream of the Downtown area.

With respect to water quality, determining significance is more indirect, because there are no specific discharge requirements or standards for stormwater runoff than can be compared at this time. For the purposes of this EIR, the determination of significance is based on a review of typical construction site pollutants usually found on job sites which may contribute to disproportionate amounts of polluting materials in runoff. The SWRCB has not attempted to identify numerical limits to be achieved in runoff from construction sites. Instead, the General Order contains narrative restrictions referencing best available technology economically achievable and the best conventional pollution control technology. Thus, the significance of water quality impacts will be evaluated based on conformance with these requirements.

The analysis within this section also builds upon conclusions identified in the LUCE Update EIR, which identified impacts to hydrology and water quality as less than significant with the implementation of existing federal, State, and local regulatory policies. Mitigation measures provided in this section implement these existing policies. The assessment of hydrology and water quality impacts for the project includes a review of regulations that control the City's water resources. Construction impacts are assessed based on information provided within the preliminary tract map, development plan, and grading and drainage plans, which include the size, location, and grade of building pads, and location and size of drainage infrastructure. As some of this information is at the conceptual or preliminary stage, a conservative, reasonable worst-case approach has been taken to ensure that potential impacts are addressed. Operational impacts are assessed based on the increase of development, impervious surfaces, and changes in drainage features throughout the project site.

In accordance with Appendix G of the *State CEQA Guidelines*, impacts would be considered significant if the project would result in any of the following:

1. *Violate any water quality standards or waste discharge requirements;*
2. *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;*
3. *Substantially alter the existing drainage pattern of a site or areas, including through the alteration of the course of a stream or river, in a manner which result in substantial erosion or siltation on- or off-site;*



4. *Substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;*
5. *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;*
6. *Otherwise substantially degrade water quality;*
7. *Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;*
8. *Place within a 100-year flood hazard area structures which would impede or redirect flood flows;*
9. *Expose people or structure to a significant risk of loss, injury, or death involving flooding, including flooding as the result of failure of a dam or levee; and/or*
10. *Be subject to inundation by seiche, tsunami, or mudflow.*

The Initial Study determined that the project would not interfere substantially with groundwater recharge with compliance with applicable General Plan policies, and would not be subject to inundation by seiche, tsunami, or mudflow. Therefore, Thresholds 2 and 10 are not discussed further in this section. See Section 4.14, *Issues Addressed in the Initial Study*, for a discussion of these impacts. See Section 4.13, *Water Resources*, for a discussion of the project’s potential impact to groundwater resources. In addition, the project would result in no impact related to flooding as the result of failure of a levee or dam. Regionally, the Salinas Dam and the Nacimiento Dam provide some measure of flood protection to northern San Luis Obispo County. However, these dams are not located within the same watershed as the project site, and a large-scale dam failure would be unlikely to cause significant loss, injury, or death onsite. Therefore, Threshold 9 is not discussed further in this section.

As described in Section 4.8.1(d), the Hydrogeology Report (Appendix H) identified PCE contamination in groundwater in the vicinity of the San Luis Ranch Specific Plan Area. However, the domestic water well has a PCE concentration of 1.0, which is within the U.S. EPA MCL for drinking water of 5 µg/L. The project does not include any uses that would contribute to increased PCE concentration in groundwater in the vicinity of the site such that it would result in any new violations of water quality standards. Therefore, impacts related to PCE contamination are not discussed further in this section. Refer to Section 4.7, *Hazards and Hazardous Materials*, for a discussion of hazards associated with risk of exposure to PCE in groundwater.

b. Impacts and Mitigation Measures.

Threshold 1	<i>Would the project violate any water quality standards or waste discharge requirements?</i>
Threshold 6	<i>Would the project otherwise substantially degrade water quality?</i>

Impact HWQ-1 **During project construction, the surface soil would be subject to erosion and the downstream watershed would be subject to pollution. The project’s impact on water quality during construction would be Class II, significant but mitigable.**



Grading associated with construction of each phase of the project would temporarily expose bare soil, which could be removed from the site and transported through the drainages on and downstream of the project site. Construction wastes, paving materials, heavy equipment fuels, lubricants and solvents, or products of incomplete combustion, could also contribute to water pollution. Uncontrolled discharges of sediment and other pollutants could create temporary adverse effects to water quality in downstream surface waters, including Prefumo Creek and the Cerro San Luis Drainage Channel. As shown in Table 4.8-1, Prefumo Creek, the project's receiving water, is impaired by fecal coliform, low dissolved oxygen, nitrate, and turbidity as a result of current agricultural, urban runoff, and other unknown point sources. TMDLs have not yet been established for these contaminants for Prefumo Creek.

Project construction would be phased over an approximately 7-year period. In total, earthwork for buildout of the project site is estimated to require 817,200 cubic yards (CY) of cut, and 569,200 CY of fill, resulting in a need for approximately 248,000 CY of soil import. Approximately 428,600 cubic yards of soils would be redistributed across the site, particularly to fill lower lying floodplain areas, potentially resulting in large exposed areas within the project site over an extended period of time. Based on the site's existing topography and proposed elevation pads, runoff from exposed construction areas during storm events would flow into Prefumo Creek. Construction activities could impact hydrology by exposing disturbed ground to potential erosion or by introducing pollutants such as oils, chemicals, sediments, and construction debris into the runoff. Construction activities could also result in the pollution of natural watercourses downstream or underground aquifers. In particular, Phases 1 and 3 of project development would include grading and construction activities in close proximity or adjacent to Prefumo Creek. Grading, excavation, and placement of fill soils near Prefumo Creek would also occur during the installation of the bicycle pathways within the open space corridor. Grading for housing pads adjacent to Prefumo Creek included in Phases 1 and 3 (refer to Figures 2-13 and 2-14 in Section 2.0, *Project Description*) would be within 100 feet of the top of the Creek bank. The presence and use of large construction machinery within close proximity of the Creek has the potential to result in a spill of fluids, such as oil, gasoline, and hydraulic fluids, which could be mobilized by stormwater runoff. Refer to Section 4.4, *Biological Resources*, for additional detail on impacts of runoff within the creek to biological resources.

Construction activities that disturb one or more acres of soil (such as the project) are required to comply with the NPDES program through preparation of a SWPPP, which outlines BMPs that would address construction-related runoff. The project would be subject to construction-phase stormwater regulations, as described in Section 4.8.1(e), *Regulatory Setting*. Construction would be completed in compliance with the State's Construction General Permit (Order No. 2009-0009-DWQ). The Construction General Permit requires the development of a SWPPP be developed by a Qualified SWPPP Developer (QSD).

Mitigative Components of the Specific Plan and Impact Conclusion. Section 7.3 of the San Luis Ranch Specific Plan requires development in the Plan Area to be designed to conform to stormwater management requirements of the City of San Luis Obispo, including standards for LID set forth by SWRCB, and construction of retention and detention systems that would be adequate to meet the needs of future development and consistent with State and local requirements. Preparation of the required SWPPP and compliance with applicable State and local regulations would reduce potential impacts to water quality due to polluted runoff from



construction activities. In order to ensure implementation of SWPPP requirements, this impact is identified as potentially significant, and incorporation of the following mitigation measures is required.

Mitigation Measures. The following mitigation measures are required to reduce impacts to water quality due to due to polluted runoff from construction activities:

- HWQ-1(a) Stormwater Pollution Prevention Plan.** All required actions shall be implemented pursuant to a SWPPP and SWMP to be prepared by the project applicant and submitted by the City to the Regional Water Quality Control Board under the NPDES Phase II program. At a minimum, the SWPPP/SWMP shall including the following BMPs:
- The use of sandbags, straw bales, and temporary de-silting basins during project grading and construction during the rainy season to prevent discharge of sediment-laden runoff into stormwater facilities;
 - Revegetation as soon as practicable after completion of grading to reduce sediment transport during storms;
 - Installation of straw bales, wattles, or silt fencing at the base of bare slopes before the onset of the rainy season (October 15th through April 15th);
 - Installation of straw bales, wattles, or silt fencing at the project perimeter and in front of storm drains before the onset of the rainy season (October 15th through April 15th); and/or
 - Alternative BMPs as approved by the RWQCB as part of the SWPPP submittal.
- HWQ-1(b) Berms and Basins.** As specified in the SWPPP, the applicant shall be required to manage and control runoff by constructing temporary berms, sediment basins, runoff diversions, or alternative BMP's as approved by the RWQCB as part of the SWPPP submittal, in order to avoid unnecessary siltation into local streams during construction activities where grading and construction shall occur in the vicinity of such streams.
- Berms and basins shall be constructed when grading commences and be periodically inspected and maintained. The project applicant shall sufficiently document, to the CCRWQCB satisfaction, the proper installation of such berms and basins during grading.
- HWQ-1(c) Concept Grading Plan and Master Drainage Plan.** As specified in the SWPPP and the City's Floodplain Management Regulations, the applicant shall be required to submit a Grading Plan and Master Drainage Plan to the Planning Division and City Public



Works Director for approval prior to approval of the VTTM. The grading and drainage plans shall be designed to minimize erosion and water quality impacts, to the extent feasible, and shall be consistent with the project's SWPPP. The plans shall include the following:

- a. Graded areas shall be revegetated with deep-rooted, native, non-invasive drought-tolerant species to minimize slope failure and erosion potential. Geotextile fabrics shall be used if necessary to hold slope soils until vegetation is established;
- b. Temporary storage of construction equipment shall be limited to a minimum of 100 feet away from drainages on the project site; and
- c. Erosion control structures shall be installed.
- d. Demonstrate peak flows and runoff for each phase of construction.
- e. Be coordinated with habitat restoration efforts, including measures to minimize removal of riparian and wetland habitats and trees (Mitigation Measures BIO-2[a] and BIO-2[b]).

Grading and drainage plans shall be submitted for review and approval by the Planning Division. The applicant shall ensure installation of erosion control structures prior to beginning of construction of any structures, subject to review and approval by the City.

Plan Requirements and Timing. The project applicant shall prepare a SWPPP and SWMP that identifies construction-related staging and maintenance areas, and at a minimum, the BMPs identified in Mitigation Measure HWQ-1(a). The SWPPP and notices shall be submitted for review and approval by the City prior to the initiation of construction. The SWPPP/SWMP shall be designed to address erosion and sediment control during all phases of development of the site until all disturbed areas are permanently stabilized.

Monitoring. The City shall ensure compliance with the SWPPP. A Geotechnical Engineer or an Engineering Geologist shall be made available to monitor technical aspects of the grading activities, including installation of the drainage outlets and associated headwalls and aprons. The City shall also inspect the site during grading to monitor runoff and after conclusion of grading activities.

Residual Impacts. Implementation of the above mitigation measures and compliance with existing regulations would ensure that the potentially significant construction runoff and associated impacts to water quality would be reduced to a less than significant level.



Threshold 3	<i>Would the project substantially alter the existing drainage pattern of a site or areas, including through the alteration of the course of a stream or river, in a manner which result in substantial erosion or siltation on- or off-site?</i>
Threshold 4	<i>Would the project substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?</i>
Threshold 5	<i>Would the project create or contribute runoff water that would exceed the capacity of the existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?</i>

Impact HWQ-2 The project would alter the existing drainage pattern of the project site, which could result in flooding, erosion, or siltation onsite and offsite. However, the proposed retention and detention systems, along with compliance with applicable regulations, would ensure that this impact would remain Class III, less than significant.

The project would alter the existing drainage pattern on the project site through re-grading of the project site and soil import to the site to raise building ground elevations above the existing 100-year floodplain. In addition, the project design includes the construction of a diversion structure on the upstream side of the property at the Cerro San Luis Channel, which would divert flows to underground storage chambers within the commercial portion of the project site. The proposed detention facilities on the project site are shown in Figure 2-12 in Section 2.0, *Project Description*, and described in detail in the *Preliminary Storm Water Control & Treatment Strategy* for the project (July 2016, refer to Appendix J). Flows from these chambers would be released through a metered outlet structure to a storm drain, which would outfall to Prefumo Creek south of the Froom Ranch Way Bridge. The proposed design of the chambers and the outflow structure are based on the requirements in the City’s DDM, matching post-development flows to pre-development for the 2-year through 100-year storm events. The detention structures would be designed to address increased runoff from the proposed residential properties, as well as runoff due to development of the project roadway infrastructure. Table 4.8-4 depicts the peak flow rates off of the site for the 2-year through 100-year storms.



**Table 4.8-4
 Combined Peak Discharge from Proposed Drainage Basins**

Scenario	Peak Flow (cubic feet per second [cfs])				
	2-Year	10-Year	25-Year	50-Year	100-Year
Existing Conditions	262.20	505.92	673.51	804.08	906.47
Proposed Conditions	265.39	495.44	646.58	756.58	861.59
Difference	3.20	-10.48	-26.93	-47.27	-44.88
Percent Change	1.2%	-2.1%	-4.0%	-5.9%	-5.0%

1. Peak flows shown are preliminary and are subject to change as the design develops.
 2. The San Luis Obispo City DDM (Section 3.3) allows up to a 5 percent increase in peak flows from existing conditions.
 Source: Cannon, July 2016. Refer to Appendix J.

For those areas not included in this regional detention (commercial, hotel, office and Agricultural Heritage Facilities and Learning Center) drainage would be treated and detained on-site, including retention within underlying rock below biofiltration areas (refer to Figure 2-12 in Section 2.0, *Project Description*). Flows from these areas would be released through a metered outlet structure to the project storm drain network which would outfall to Prefumo Creek south of the proposed Froom Ranch Way bridge, or to Cerro San Luis Channel. Design of the chambers and the outflow structure is based on City requirements in the DDM. Potential effects on agricultural resources associated with changes to the floodplain on the project site are discussed in Section 4.2, *Agricultural Resources*.

Mitigative Components of the Specific Plan and Impact Conclusion. As described above, the Specific Plan includes a preliminary drainage plan that would satisfy City flow requirements with the proposed development. The proposed detention facilities and stormwater conveyance infrastructure would change the way water is conveyed through the site to Prefumo Creek and would result in changes to stormwater management control and peak surface flows. However, the proposed detention and existing drainage facilities would meet applicable City requirements, and would not result in an increase in post-development peak runoff from the project site. Therefore, this impact would be less than significant.

Mitigation Measures. No mitigation measures are required.

Residual Impacts. This impact would be less than significant without mitigation.

Threshold 1	Would the project violate any water quality standards or waste discharge requirements?
Threshold 6	Would the project otherwise substantially degrade water quality?

Impact HWQ-3 During operation, the proposed residential, commercial, and agricultural uses would increase the quantities of pollutants associated with runoff and sedimentation. The project’s impact on water quality would be Class II, significant but mitigable impact.



Project development would replace approximately 78 acres of agricultural land with an equivalent area of urban development and associated changes in pollutant runoff. Current agricultural operations use chemicals such as pesticides and fertilizers which may currently enter Prefumo Creek and affect water quality. Development of the project with residential and commercial uses would be expected to increase the quantities of pollutants associated with runoff from streets, lawns, landscaping, and gardens. Other activities that may increase pollutants due to site development include motor vehicle operations in the area, pesticide/herbicide/fertilizer uses, human littering, careless material storage and handling, pavement disintegration, and domestic animal waste. During storm events, these pollutants would be transported into drainage systems by surface runoff. Disturbed soils, sedimentation, and contaminants that are mobilized by water flow through Prefumo Creek may ultimately be conveyed to San Luis Obispo Creek.

The project would be required to manage stormwater treatment in accordance with the CCRWQCB's Resolution R3-2013-0032, which requires Central Coast municipalities to implement Post Construction Requirements to comply with the Statewide Phase II Municipal General Permit. The General Permit requires MS4s to develop and implement Best Management Practices (described in Section 4.8.1[e], above) to reduce the discharge of pollutants and protect water quality. In addition, the project would be required to prepare a SWMP consistent with the City's NPDES Phase II Program. As described in Impact HWQ-2, the project design includes the construction of a diversion structure on the upstream side of the property at the Cerro San Luis Chanel which would divert flows to underground storage chambers within the commercial portion of the project site (refer to Figure 2-12 in Section 2.0, *Project Description*). The detention structures would be designed to limit the release of "first flush" water, which generally contains the highest concentration of pollutants from buildup during the dry season. Runoff from the high-density residential development in the northern portion of the project site would be retained within underlying rock below biofiltration areas located throughout the residential development. Biofiltration uses grass or other dense plants to filter out sediments, oily materials, and other pollutants through the combined effects of filtration, infiltration, and settling. Therefore, in accordance with the CCRWQCB Post-Construction requirements, residential and commercial runoff would be treated prior to entering the receiving waters. No stormwater treatment is required for agricultural uses; however, the project represents a net reduction in agricultural acreage in the Specific Plan Area. As a result, implementation of the project would be expected to reduce the long-term agricultural pollutant load into Prefumo Creek.

Mitigative Components of the Specific Plan and Impact Conclusion. As described above, the Specific Plan includes retention and detention structures and LID measures intended to minimize pollutants associated with runoff and sedimentation, consistent with State and local requirements, including new standards for LID set forth by SWRCB. Compliance with the CCRWQCB's Post Construction Requirements, NPDES discharge permits, the City's SWMP, Engineering Standards, General Plan, and City Ordinance requirements would reduce potential impacts to water quality due to polluted runoff during operation of the project. However, mitigation is required to ensure the inclusion of locally-appropriate stormwater best management practices in the final design of the stormwater quality system, and to ensure that the stormwater quality system is maintained in order to ensure continued to ensure long-term



operation. Therefore, potential impacts to water quality resulting from runoff during operation of the project would be significant but mitigable.

Mitigation Measures. The following mitigation measures are required to reduce impacts to water quality due to due to polluted runoff during operation of the project:

HWQ-3(a) Stormwater Quality Treatment Controls. BMP devices shall be incorporated into the stormwater quality system depicted in the Master Drainage Plan (refer to Mitigation Measure HWQ-1[c]). The final design of the stormwater quality system shall be reviewed and approved by the City.

The Master Drainage Plan shall contain the following relevant BMPs:

- Vegetated bioswales to reduce sediment and particulate forms of metals and other pollutants along corridors of planted grasses.
- Vegetated buffer strips to reduce sediment and particulate forms of metals and nutrients.
- Hydrodynamic separation products to reduce suspended solids greater than 240 microns, trash, and hydrocarbons. These hydrodynamic separators shall be sized to handle peak flows from the project site consistent with applicable regulatory standards.

HWQ-3(b) Stormwater BMP Maintenance Manual. The project applicant shall prepare a development maintenance manual for the stormwater quality system BMPs (refer to Mitigation Measure HWQ-3[a]). The maintenance manual shall include detailed procedures for maintenance and operations of all stormwater facilities to ensure long-term operation and maintenance of post-construction stormwater controls. The maintenance manual shall require that stormwater BMP devices be inspected, cleaned, and maintained in accordance with the manufacturer's maintenance specifications. The manual shall require that devices be cleaned prior to the onset of the rainy season (i.e., October 15th) and immediately after the end of the rainy season (i.e., May 15th). The manual shall also require that all devices be checked after major storm events.

HWQ-3(c) Stormwater BMP Semi-Annual Maintenance Report. The property manager(s) or acceptable maintenance organization shall submit to the City of San Luis Obispo Public Works Department a detailed report prepared by a licensed Civil Engineer addressing the condition of all private stormwater facilities, BMPs, and any necessary maintenance activities on a semi-annual basis (October 15th and May 15th of each year). The requirement for



maintenance and report submittal shall be recorded against the property.

Plan Requirements and Timing. The applicant shall demonstrate inclusion of BMPs within the VTTM, Utilities Plan, and Master Drainage Plan, which shall be submitted for review and approval by the City prior to Development Plan approval and VTTM recordation.

Monitoring. The City shall review and approve the required plans and maintenance manual prior to Development Plan approval and VTTM recordation.

Residual Impacts. Implementation of the above mitigation measures and compliance with existing regulations would ensure that the potentially significant impacts to water quality resulting from runoff during operation of the project would be reduced to a less than significant level.

Threshold 7	<i>Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map</i>
Threshold 8	<i>Would the project place structures within the 100-year flood zone hazard area which would impede or redirect flood flows.</i>

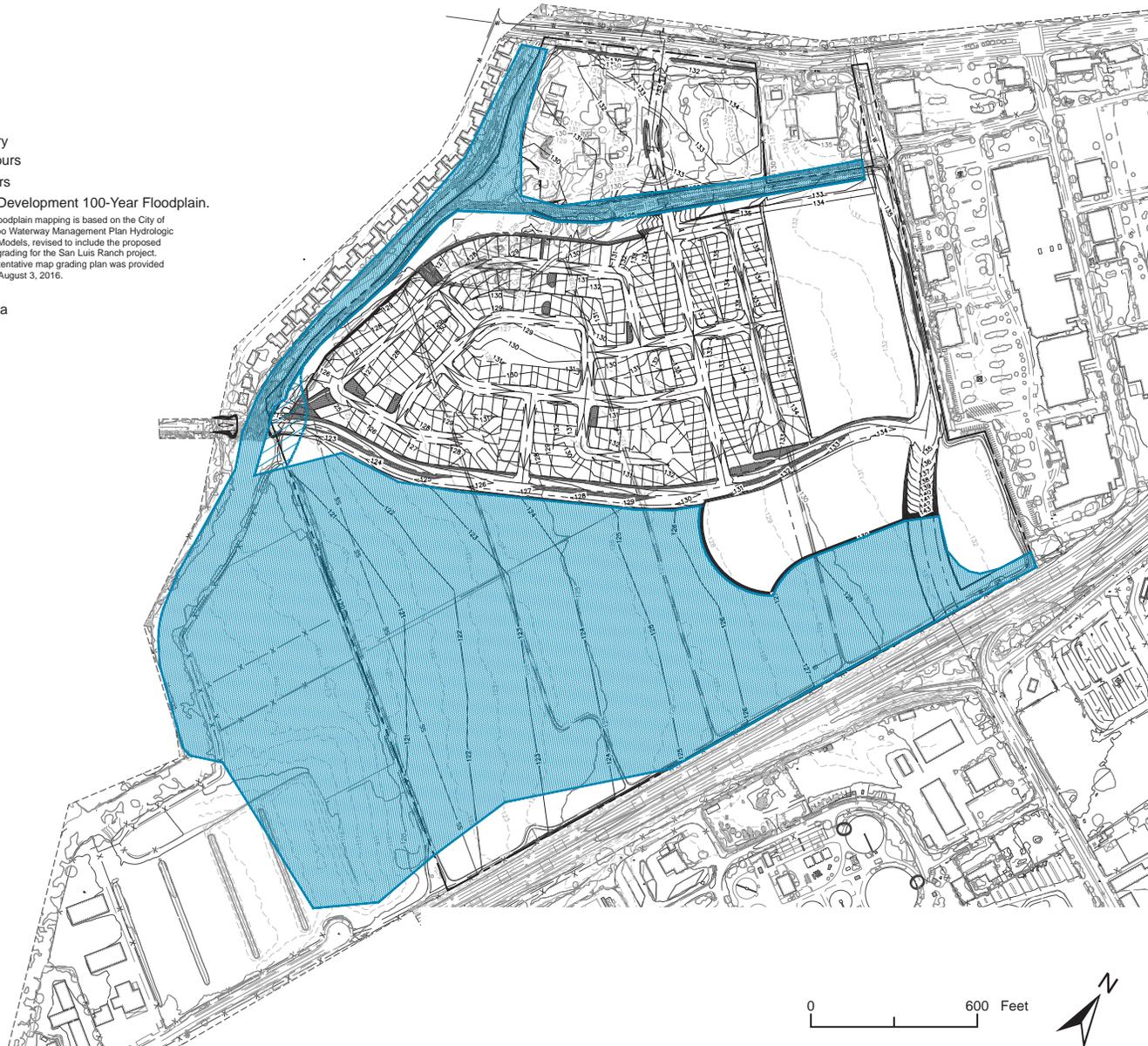
Impact HWQ-4 **Approximately 98 acres of the project site is within the existing 100-year flood zone. However, proposed grading and elevation modifications would ensure that the project would not place housing within a 100-year flood hazard area or expose people or structures downstream of the Specific Plan Area to flood hazards due to increased runoff or loss of floodplain storage. This impact would be Class II, significant but mitigable.**

On-Site Flooding Hazards. As shown in Figure 4.8-2, approximately 98 acres (75 percent) of the 131-acre project site is located within the 100-year floodplain identified by FEMA. High-density residential development is proposed in the northernmost portion of the site which is not within the identified 100-year floodplain, and low/medium- and medium-density residential and commercial development is proposed in the central portion of the site which is within the identified 100-year floodplain. The project grading plan (refer to Figure 2-13 in Section 2.0, Project Description) would raise the elevation of the central portion of the project site above the floodplain elevation using approximately 248,000 CY of soil import to the site as well as fill soil relocated from elsewhere on the project site. Figure 4.8-3 depicts the post-development 100-year floodplain, based on the City of San Luis Obispo Waterway Management Plan hydrologic and hydraulic models, revised to include the project grading plan. It should be noted that the City Waterway Management Plan hydrologic and hydraulic models provide regional floodplain elevations at a higher level of detail than the 100-year floodplain identified by FEMA, because the City hydrologic and hydraulic models include smaller waterways which are not included in the FEMA floodplain, such as Cerro San Luis Channel. Through grading of the property to



LEGEND

- Project Boundary
 - 120- Proposed Contours
 - - - Existing Contours
 - Proposed Post-Development 100-Year Floodplain.
- Approximate floodplain mapping is based on the City of San Luis Obispo Waterway Management Plan Hydrologic and Hydraulic Models, revised to include the proposed tentative map grading for the San Luis Ranch project. The proposed tentative map grading plan was provided by Cannon on August 3, 2016.
- Bioretention Area



Source: Wallace Group, August 2016

Proposed Post-Development 100-Year Floodplain

Figure 4.8-3

City of San Luis Obispo

increase elevations on the central portion of the project site, and installation of detention/retention and drainage facilities described in Section 2.0, Project Description, and Impact HWQ-2, proposed residential and commercial building pads on the central portion of the project site would be elevated above the post-development 100-year floodplain consistent with standards in the Special Floodplain Management Zone Regulations (refer to Appendix J). This would ensure that no housing would occur within the 100-year floodplain based on the City of San Luis Obispo hydrologic and hydraulic models, and thereby achieve compliance with the City Flood Damage Prevention Regulations Code 17.84.050. Potential effects on agricultural resources associated with changes to the floodplain on the project site are discussed in Section 4.2, Agricultural Resources.

Downstream Flooding Hazards. Floodplains provide surface area and storage capacity for flood flows that overtop the banks of waterways, including Prefumo Creek and Cerro San Luis Channel. This storage area attenuates downstream flood peaks. When such areas are reduced, peak flows downstream may be impacted. The re-grading of the site and movement of extensive amounts of fill into the existing 100-year floodplain to construct the project as well as the proposed channel capacity enhancements for Prefumo Creek and Cerro San Luis Channel could affect flood water surface elevations and reduce the amount of existing floodplain storage available in Prefumo Creek and downstream in the San Luis Obispo Creek watershed. Flood waters that currently are spread out and retained temporarily in the existing floodplain onsite would be displaced by fill placement, and the displaced water volume would enter the Prefumo Creek and San Luis Obispo Creek drainages, potentially increasing downstream peak flows, water velocities, and downstream flood water surface elevations and resulting in flooding at on-site agricultural areas and the adjacent SLO City Farm. As described in Section 4.8.1(e), *Regulatory Setting*, the City's Floodplain Management Regulations require that projects within the 100-year FEMA floodplain prepare a Master Drainage Plan which demonstrates that new development would not cause the 100-year flood elevation to increase more than 2.5 inches, cause stream velocities to increase more than 0.3 feet per second, or cause a significant net decrease in floodplain storage volume unless the conditions listed in the Managed Fill Criteria of the DDM are met.

In addition, the proposed From Ranch Way Bridge, as well as all culverts, outfalls, and modifications to the existing creek channels would be required to comply with the applicable requirements of the City's WMP, DDM, and SMMP, and be approved by the City Engineer, USACE, CDFW, and Central Coast RWQCB. The WMP serves as a basis for future project planning, decision-making, and permitting. The floodplain management policies in the DDM require that fill placed on floodplains be managed so that there is no adverse impact in terms of flooding or bank stability and requires applicants to fully mitigate adverse hydrologic impacts. The SMMP requires BMPs for stream maintenance such as sediment removal, bank repair, and vegetation management.

Mitigative Components of the Specific Plan and Impact Conclusion. As described above, the Specific Plan includes a preliminary grading plan that would raise the elevation of the central portion of the project site above the post-development 100-year floodplain as shown in Figure



4.8-3. The project includes a conditional letter of map revision (CLOMR) application² requesting that the FEMA 100-year floodplain boundary be redefined, and that the FIRM revised by FEMA to be consistent with the post-development 100-year floodplain as mapped based on the City of San Luis Obispo Waterway Management Plan hydrologic and hydraulic models. Compliance with required City Flood Damage Prevention Regulations Code 17.84.050 and flood management measures including Special Floodplain Management Zone Regulation and the City Waterways Management Plan would reduce the risk of significant loss or injury as a result of flooding. In addition, the Specific Plan includes a preliminary drainage plan and retention and detention structures intended to ensure that that proposed development would not substantially increase runoff from the project site. Compliance with these State and local regulations would ensure that downstream flooding impacts would remain less than significant. As described in Impact HWQ-2, the Specific Plan includes excavation and fill in the floodplain, peak flow management, and channel capacity enhancements for Prefumo Creek and Cerro San Luis Channel, and would satisfy City flow requirements with the proposed development. With the implementation of these measures, the project is in compliance with FEMA and City floodplain regulations and potential floodplain elevation increases affecting other properties would be avoided. However, mitigation is required to ensure the final grading plan and resulting post-development floodplain would exclude areas proposed for housing, and confirm that the CLOMR application to redefine the FEMA 100-year floodplain boundary is approved and an official letter of map revision (LOMR)³ is issued by FEMA. Therefore, potential impacts related to on-site flood hazards would be significant but mitigable.

Mitigation Measures. The following mitigation measure is required to reduce impacts related to locating housing with a 100-year floodplain to a less than significant level:

HWQ-4 Conditional Letter of Map Revision/Letter of Map Revision. The applicant, in conjunction with the City of San Luis Obispo, shall prepare the CLOMR application and obtain a LOMR from FEMA.

Plan Requirements and Timing. The applicant shall prepare the CLOMR application and submit it to FEMA.

Monitoring. The City will confirm that FEMA has approved the CLOMR prior to issuance of a grading permit, and LOMR prior to occupancy.

Residual Impacts. Implementation of Mitigation Measure HWQ-4 and compliance with existing regulations would ensure that this impact would be reduced to a less than significant level.

c. Cumulative Impacts. The project, in combination with approved, pending, and proposed development within the City, would further contribute to the increase in development and associated water quality impacts, as well as alter the existing hydrologic

² A CLOMR is based on proposed conditions and does not change the FIRMs. A CLOMR is the method used by FEMA to let people know that if projects are constructed per the design submitted to and approved by FEMA, revision of the FIRM panel with an official letter of map revision (LOMR) is likely.

³ A LOMR is an official revision to the FIRMs issued by FEMA. LOMRs reflect changes to the 100-year floodplains or Special Flood Hazard Areas (SFHA) shown on the FIRMs.



environment, thereby altering the abundance, natural flow of water resources of the area. As analyzed in the LUCE Update EIR, cumulative impacts of the Land Use and Circulation Element update, which includes the project site, to hydrology and water quality would be reduced to a less than significant level with the implementation of and adherence to the policies and requirements discussed above.

Water Quality. Cumulative development would result in a change from agricultural to urban pollutant discharge to surface and groundwater. Construction activities could also result in the pollution of natural watercourses or underground aquifers. The types of pollutant discharges that could occur as a result of construction include accidental spillage of fuel and lubricants, discharge of excess concrete, and an increase in sediment runoff. Storm runoff concentrations of oil, grease, heavy metals, and debris increases as the amount of urban development increases in the watershed. However, when properly implemented, water quality requirements of the CCRWQCB and the City and County of San Luis Obispo would be expected to mitigate any adverse impacts resulting from new development. Therefore, the project, in conjunction with pending cumulative development would not significantly increase the concentration of urban pollutants such as oil, grease, and vehicular heavy metals in surface runoff. Polluted runoff which may be generated during construction activities of cumulative development and projects considered in this analysis would be regulated by the SWRCB under General Construction, NPDES permits, and would be minimized through the implementation of standard construction BMPs. Cumulative impacts would therefore be less than significant for water quality.

Flooding. Cumulative development in the City and the San Luis Obispo Creek watershed are anticipated to contribute to an incremental increase in runoff and peak flood flows. Development of planned or pending projects upstream of the project site would contribute to the risk of flooding within the San Luis Ranch Specific Plan Area. Each cumulative project would be expected to provide its own facilities or other mitigation measures, where feasible, to mitigate increased peak flows and exacerbated downstream flooding. Project-specific mitigation measures would reduce cumulative impacts to the extent feasible. The project would increase stormwater runoff due to the increase in impervious surfaces in the Specific Plan Area. However, the proposed on-site drainage system would adequately capture associated runoff, and the project would not substantially contribute to flooding on- or off-site. The project grading plan has been designed such that the resulting post-development floodplain would exclude areas proposed for housing. Overall, cumulative impacts to hydrology and water quality would be less than significant.

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