

4.9 Hydrology and Water Quality

This section evaluates the potential environmental effects of the 2045 General Plan related to water quality, drainage, groundwater, and flooding. The analysis includes a review of surface water, groundwater, inundation zones, and water quality. Water supply is discussed in Section 4.16, *Utilities and Service Systems*. Issues regarding wetlands and waters of the United States are discussed in Section 4.3, *Biological Resources*.

4.9.1 Setting

Solvang is located in the Santa Ynez Valley in central Santa Barbara County, approximately 25 miles northwest of Santa Barbara and 6 miles north of the Pacific Ocean. The weather in Solvang is characterized by a typical Mediterranean coastal climate, which is generally dry in the summer with mild, wet winters. Rainfall in the area is concentrated in the winter months with the wettest months being January, February, and March, which have average monthly rainfall totals of 4.9, 5.2, and 3.9 inches, respectively (U.S. Climate Data 2023).

a. Surface Water

The California Department of Water Resources (DWR) divides surface watersheds in California into 10 hydrologic regions. Solvang lies within the Central Coast hydrologic region, a large coastal region in central California that consists of approximately 11,300 square miles and includes all of Santa Cruz, Monterey, San Luis Obispo, and Santa Barbara counties, most of San Benito County, and portions of San Mateo, Santa Clara, and Ventura counties (DWR 2015).

The Central Coast Regional Water Quality Control Board (RWQCB) subdivides the Central Coast hydrologic region into hydrologic units for planning purposes. Solvang is located entirely in the Santa Ynez hydrologic unit (RWQCB 2019). The Santa Ynez Hydrologic unit stretches approximately 70 miles east to west between the Pacific Ocean and the Santa Barbara County line (RWQCB 2019). Within the Santa Ynez Hydrologic unit, Solvang is located within one watershed: the Santa Ynez River Watershed. The Santa Ynez River Watershed drains approximately 900 square miles (United States Geological Survey 2023). The Santa Ynez River originates in Los Padres National Forest and flows west, continuing to its terminus at the Pacific Ocean near Vandenberg Space Force Base. In addition to the Santa Ynez River, the Alamo Pintado Creek, Adobe Creek, Alisal Creek, and Fredensborg Canyon Road Creek run through Solvang.

b. Groundwater

Portions of Solvang overlie the Santa Ynez River Valley Basin, while areas in east Solvang and south of the Santa Ynez River do not overlie a designated groundwater basin (DWR 2023a). The Santa Ynez River Valley Basin is an approximately 319 square-mile basin that underlies the Santa Ynez Valley. Three Groundwater Sustainability Agencies (GSAs) actively manage the Santa Ynez River Valley Basin: the Western Management Area (WMA) GSA, the Central Management Area (CMA) GSA, and the Eastern Management Area (EMA) GSA. Solvang is located within the EMA. The EMA makes up approximately 150 square miles of the total basin and includes the Santa Ynez Uplands and Santa Ynez River areas (EMA GSA 2023). The northern and eastern boundary of the EMA is defined by outcropping of impermeable bedrock of the San Rafael Mountains. The Santa Ynez Mountains form the southern boundary of the EMA south of the Santa Ynez River. The boundary to the northwest is defined as the shared border with the San Antonio Groundwater Basin, which as a topographic

watershed divide west of Zaca Creek Canyon. The EMA’s western boundary is formed in the Purisima Hills by impermeable consolidated bedrock (EMA GSA 2023).

Based on historical groundwater inflow and outflow data from 1982 to 2018, the EMA has an average annual inflow of approximately 18,770 acre-feet per year (AFY) and an average annual outflow of 20,600 AFY, which results in an annual reduction in storage of approximately 1,830 AFY. The sustainable groundwater yield in the EMA was estimated by adding the average change of groundwater in storage (negative 1,830 AFY) to the estimated total average amount of groundwater pumping (14,700 AFY) from 1982 to 2018. The sustainable groundwater yield in the EMA is estimated to be approximately 12,870 AFY (EMA GSA 2023).

c. Water Quality

Surface Waters

Water quality in Solvang is governed by the RWQCB which sets water quality standards in the *Water Quality Control Plan for the Central Coast Basin* (Basin Plan; RWQCB 2019). The Basin Plan identifies beneficial uses for surface water and groundwater and establishes water quality objectives to attain those beneficial uses. The identified beneficial uses and water quality objectives to maintain or achieve those uses are together known as water quality standards. The RWQCB designates beneficial uses for some individual water bodies in the Central Coast Basin. All other water bodies not designated individually are assigned the designated uses of municipal and domestic water supply and protection of recreation and aquatic life. Table 4.9-1 presents the designated beneficial uses listed in the Basin Plan for surface water in Solvang.

Table 4.9-1 Beneficial Uses for Surface Waters in Solvang

Water Body	Beneficial Uses¹
Alamo Pintado Creek	Municipal and Domestic Supply; Agricultural Supply; Industrial Service Supply; Groundwater Recharge; Water Contact Recreation; Non-Contact Water Recreation; Wildlife Habitat; Warm Fresh Water Habitat; Commercial and Sport Fishing
Santa Ynez River	Municipal and Domestic Supply; Agricultural Supply; Industrial Process Supply; Industrial Service Supply; Groundwater Recharge; Water Contact Recreation; Non-Contact Water Recreation; Wildlife Habitat; Cold Fresh Water Habitat; Warm Fresh Water Habitat; Migration of Aquatic Organisms; Spawning, Reproduction, and/or Early Development; Rare, Threatened, or Endangered Species; Fresh Water Replenishment; Commercial and Sport Fishing

¹ Surface waters not designated individually by the RWQCB are assigned the designated uses of municipal and domestic water supply and protection of recreation and aquatic life.

Source: RWQCB 2019

In Solvang, stormwater runoff transports pollutants from urban development, streets, parking lots, and other sources to the Santa Ynez River and its tributaries. Activities such as land clearing, excavation and filling, illegal dumping, municipal operations, improper disposal of pet waste, and use of fertilizers, pesticides, and herbicides can generate stormwater pollution. When designated beneficial uses of a particular water body are compromised by poor water quality, Section 303(d) of the Clean Water Act requires states to identify and list that water body as impaired. Once a water body has been deemed impaired, a Total Maximum Daily Load (TMDL) must be developed for each impairing water quality constituent. A TMDL is an estimate of the total load of pollutants from point, nonpoint, and natural sources that a water body can receive without exceeding applicable water quality standards (often with a “factor of safety” included, which limits the total load of pollutants

to a level well below that which could cause the standard to be exceeded). Once established, the TMDL is allocated among current and future dischargers into the water body. The portion of the Santa Ynez River which crosses Solvang is listed on the 2018 303(d) list as impaired for sedimentation/siltation, sodium, total dissolved solids, temperature, and toxicity (State Water Resources Control Board [SWRCB] 2018).

Groundwater Beneficial uses of groundwater in the Santa Ynez River Valley Basin include municipal and domestic water supply and agricultural water supply. The primary constituents of concern in groundwater in the EMA, as well as the Santa Ynez River Valley Basin as a whole, are total dissolved solids (TDS) (RWQCB 2019). While there are some wells that currently have constituent concentrations that exceed Basin Water Quality Objectives set by the RWQCB, it is possible that some of these exceedances are a result of natural conditions and not caused by land use or other anthropogenic activities. Elevated boron concentrations are naturally occurring in many central coast basins, and elevated TDS, chloride, and sodium are often associated with rocks of marine origin that are present in the EMA. EMA agricultural stakeholders have not indicated that these concentrations are impacting agricultural production or drinking water quality (EMA GSA 2023).

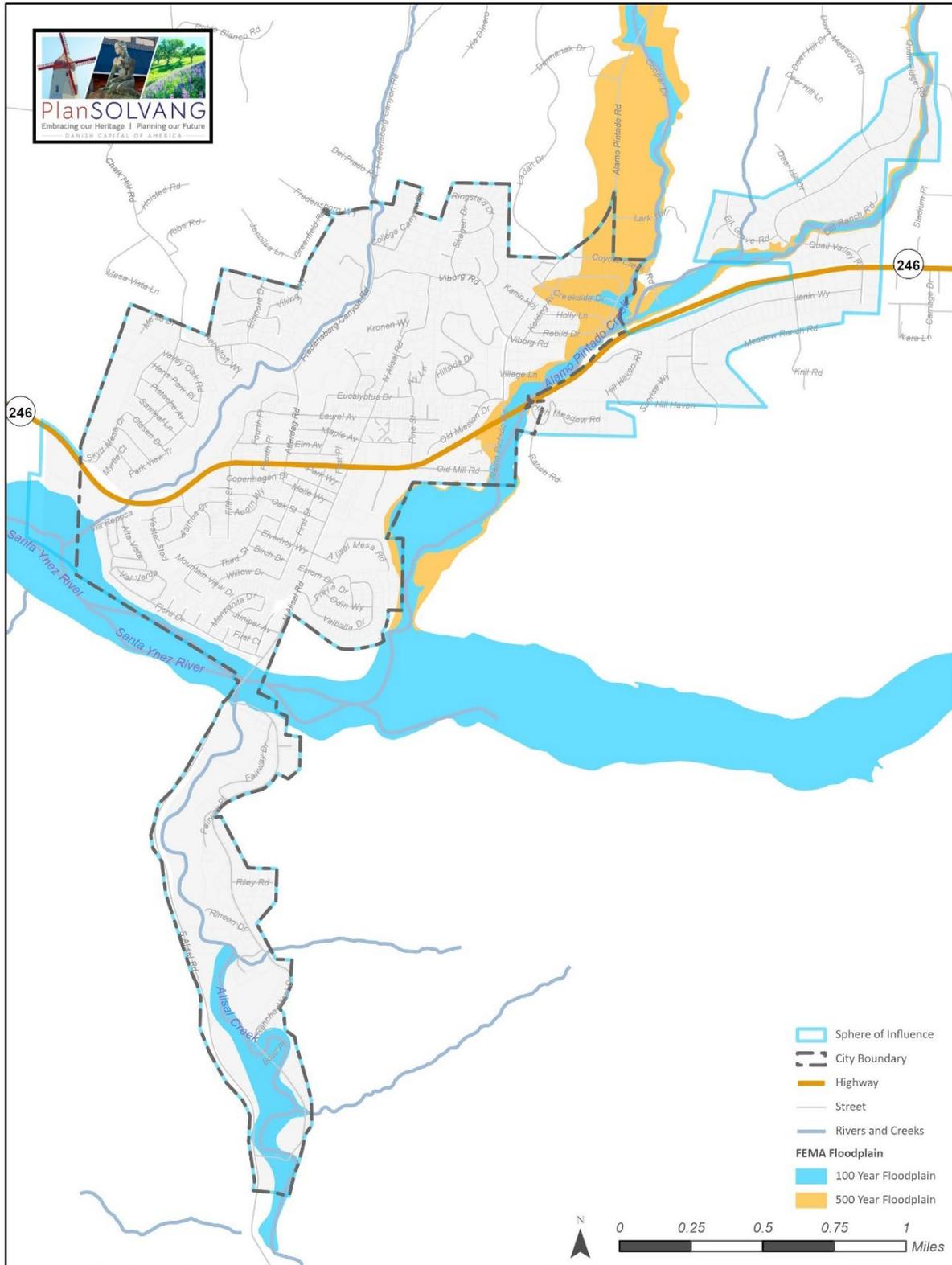
d. Flooding

Flooding during storm events occurs when the amount of rainfall exceeds the infiltration capacity of the surrounding landscape or the conveyance capacity of the storm water drainage system. The Federal Emergency Management Agency (FEMA) delineates regional flooding hazards on Flood Insurance Rate Maps (FIRMs) as part of the National Flood Insurance Program. Higher flood risk zones are called Special Flood Hazard Areas; these areas have a 1 percent chance or greater of flooding in any given year (also called the 100-year floodplain). Areas with a 0.2 percent chance of flooding in any given year are called the 500-year floodplain. There are several flood-prone areas in Solvang, which are generally located adjacent to the Santa Ynez River, Alamo Pintado Creek, Alisal Creek, and Adobe Creek (City of Solvang 2021). Figure 4.9-1 shows the portions of Solvang that are located within the 100-year and 500-year FEMA designated flood hazard zones.

In 2023, a series of rainstorms resulted in flooding and mudslides within and adjacent to Solvang, including at Alisal Ranch and Alamo Pintado Creek (Noozhawk 2023). This flooding also led to multiple evacuation orders throughout Santa Barbara County (Noozhawk 2023). During this flooding, Alisal Road and State Route 246 were closed due to unsafe road conditions, including debris and boulders (Santa Ynez Valley News 2023; Santa Ynez Valley Star 2023).

Solvang is approximately 8.9 miles west of Cachuma Lake and approximately 6.1 miles north of the Pacific Ocean, and is not subject to inundation from tsunami or seiche. Dam inundation zones are present in Solvang, which are defined as areas that could be affected by flooding as a result of dam failure. These areas could inundate portions of Solvang as a result of failure of Bradbury Dam and Alisal Creek Dam, located approximately 9.0 miles east and 3.3 miles south of Solvang, respectively (City of Solvang 2021). Figure 4.9-2 shows the dam inundation zones within Solvang.

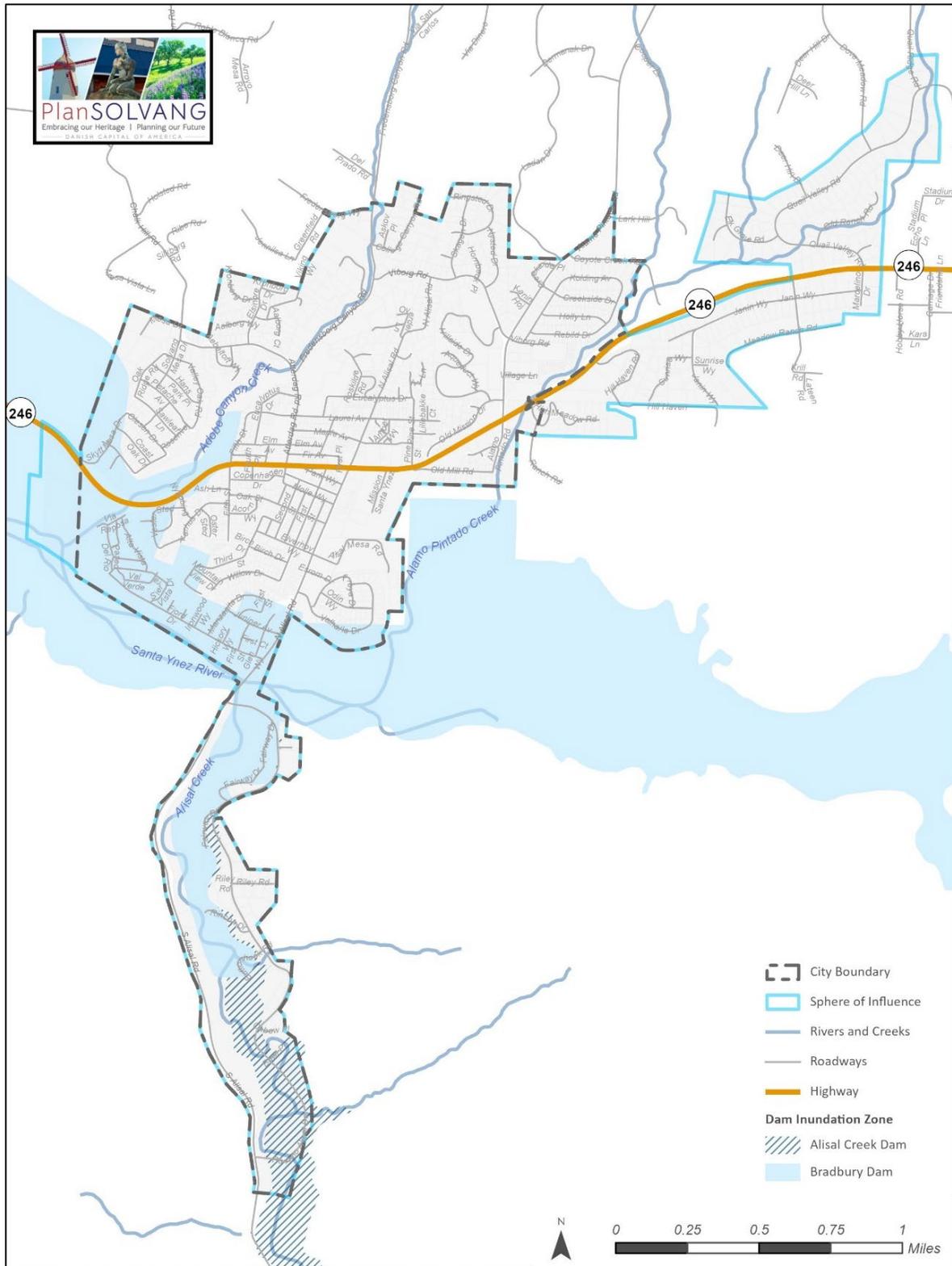
Figure 4.9-1 Flood Hazards in Solvang



Source: City of Solvang, 2016; FEMA, 2021
 Date: April 26, 2022

Solvang Safety Element
 Fig X Flood Hazard Zones

Figure 4.9-2 Dam Inundation Zones in Solvang



Source: City of Solvang, 2021; Department of Water Resources, DOD, 2022
 Date: April 26, 2022

Solvang Safety Element
 Fig X Dam Inundation Zones

4.9.2 Regulatory Setting

a. Federal Regulations

Clean Water Act

The federal Clean Water Act, enacted by Congress in 1972 and amended several times since, is the primary federal law regulating water quality in the United States and forms the basis for several State and local laws throughout the country. The Clean Water Act established the basic structure for regulating discharges of pollutants into the waters of the United States. The Clean Water Act gave the United States Environmental Protection Agency (USEPA) the authority to implement federal pollution control programs, such as setting water quality standards for contaminants in surface water, establishing wastewater and effluent discharge limits for various industry contaminants in surface water, establishing wastewater and effluent discharge limits for various industry categories, and imposing requirements for controlling nonpoint-source pollution. At the federal level, the Clean Water Act is administered by the USEPA and United States Army Corps of Engineers (USACE). At the state and regional levels in California, the Clean Water Act is enforced by the SWRCB and the nine RWQCBs.

Clean Water Act Section 303(d)

Section 303(d) of the Clean Water Act requires states to identify water bodies that do not meet water quality objectives and are not supporting their beneficial uses. Each state must submit an updated biennial list, called the 303(d) list, to the USEPA. In addition to identifying the water bodies that are not supporting beneficial uses, the list also identifies the pollutant or stressor causing impairment and establishes a priority for developing a control plan to address the impairment. If a water body is designated as “impaired,” then a TMDL is developed and identified for the affected water body. A TMDL establishes the maximum daily amount of a pollutant allowed in an identified water body and is used as a planning tool in addressing water quality impairments and improving water quality.

Clean Water Act Section 401

Under Section 401 of the Clean Water Act, the RWQCBs have regulatory authority over actions in waters of the United States and/or the State of California through the issuance of water quality certifications, which are issued in conjunction with any federal permit (e.g., permits issued by the USACE under Section 404 of the Clean Water Act, described below). Section 401 of the Clean Water Act provides the SWRCB and the RWQCBs with the regulatory authority to waive, certify, or deny any proposed activity that could result in a discharge to surface waters of the State. To waive or certify an activity, these agencies must find that the proposed discharge would comply with State water quality standards, including those protecting beneficial uses and water quality. If these agencies deny the proposed activity, the federal permit cannot be issued. This water quality certification is generally required for projects involving the discharge of dredge or fill material to wetlands or other bodies.

Clean Water Act Section 402

Section 402 of the Clean Water Act requires that all construction sites on an acre or greater of land, as well as municipal, industrial and commercial facilities discharging wastewater or stormwater directly from a point source (e.g., pipe, ditch, or channel) into a surface water of the United States

must obtain permission under the National Pollutant Discharge Elimination System (NPDES) permit. All NPDES permits are written to ensure that the surface water receiving discharges will achieve specified water quality standards.

According to federal regulations, NPDES permit coverage for stormwater discharges associated with construction activity can be obtained through individual state permits or general permits. Individual permitting involves the submittal of specific data on a single construction project to the appropriate permitting agency that will issue a site-specific NPDES permit to the project. NPDES coverage under a general permit involves the submittal of a Notice of Intent by the regulated construction project that they intend to comply with a general permit to be developed by the USEPA or a state with delegated permitting authority. In California, the NPDES program is administered by the SWRCB through the nine RWQCBs. Further discussion of the NPDES program and permits in California relevant to the proposed project is provided in discussion of State regulations, below.

Clean Water Act Section 404

Under Section 404 of the Clean Water Act, proposed discharges of dredged or fill material into waters of the United States require USACE authorization. Waters of the United States generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands (with the exception of isolated wetlands).

National Flood Insurance Program

The National Flood Insurance Program is a program administered by FEMA to provide subsidized flood insurance for property owners in communities. The National Flood Insurance Program established regulations that limit development in flood-prone areas. The boundaries of flood-prone areas are delineated on FEMA's Flood Insurance Rates Maps, which provide flood information and identify the flood hazard in the community. In certain high-risk areas, federally regulated or insured lenders require property owners to have flood insurance before issuing a mortgage.

b. State Regulations

Porter-Cologne Water Quality Control Act of 1970

The federal Clean Water Act places the primary responsibility for the control of water pollution and planning the development and use of water resources with the states, although it does establish certain guidelines for the states to follow in developing their programs. California's primary statute governing water quality and water pollution is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the SWRCB and the nine RWQCBs broad powers to protect water quality and is the primary vehicle for the implementation of California's responsibility under the federal Clean Water Act. The Porter-Cologne Act grants the SWRCB and RWQCBs the authority and responsibility to adopt plans and policies, to regulate discharges to surface water and groundwater, to regulate waste disposal sites, and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, oil, or petroleum product. Each RWQCB must formulate and adopt a water quality control plan for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that a RWQCB may include in its region a regional plan with water discharge prohibitions applicable to

particular conditions, areas, or types of waste. The City is within the jurisdictional boundaries of the Central Coast RWQCB (Region 3).

Phase II Municipal Storm Water Permit

The Municipal Storm Water Permitting Program regulates storm water discharges from Municipal Separate Storm Sewer Systems (MS4s). The NPDES MS4 permits in California are issued in two phases by the SWRCB and RWQCBs. Phase I MS4 permits are issued by the RWQCBs to medium (i.e., serving between 100,000 and 250,000 people) and large (i.e., serving more than 250,000 people) municipalities. Most of these permits are issued to a group of co-permittees encompassing an entire metropolitan area. The Phase II MS4 Permit is issued by the SWRCB and is applicable to smaller municipalities (i.e., populations of less than 100,000 people) and nontraditional small MS4s (e.g., military bases, public campuses, and prison and hospital complexes). The Phase II MS4 Permit (*Waste Discharge Requirements [WDRs] for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems [MS4s] General Permit*), Order No. 2013-0001-DWQ, NPDES No. CAS000004) became effective on July 1, 2013 and covers Phase II permittees statewide, including the City of Solvang. The Phase I and Phase II MS4 Permits require the permittees to develop a storm water management program and individual dischargers to develop and implement Storm Water Management Plans (SWMP) to manage discharges to municipal storm drain systems.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) of 2014 is a comprehensive three-bill package that California Governor Jerry Brown signed into State law in September 2014. The SGMA provides a framework for sustainable management of groundwater supplies by local authorities, with a limited role for State intervention if necessary to protect the resource. The plan is intended to ensure a reliable groundwater supply for California for years to come. The SGMA requires governments and water agencies of high- and medium-priority basins to halt overdrafts of groundwater basins. The SGMA requires the formation of local groundwater sustainability agencies (GSAs) that are required to adopt Groundwater Sustainability Plans to manage the sustainability of the groundwater basins. DWR has designated the Santa Ynez River Valley Basin as a medium priority basin (DWR 2023a).

The Santa Ynez River Valley Basin is under the jurisdiction of the WMA GSA, the CMA GSA, and the EMA GSA, each of which have prepared a groundwater sustainability plan for their respective jurisdiction over the Santa Ynez River Valley Basin. The WMA GSA includes the City of Lompoc, the Mission Hills Community Services District, the Vandenberg Village Community Services District, the Santa Ynez River Water Conservation District, and unincorporated County of Santa Barbara (Santa Ynez River Valley Groundwater Basin 2023a). The CMA GSA includes the City of Buellton, the Santa Ynez River Water Conservation District, and unincorporated County of Santa Barbara (Santa Ynez River Valley Groundwater Basin 2023b). The EMA GSA includes the City of Solvang, Irrigation District No. 1, the Santa Ynez River Water Conservation District, and unincorporated County of Santa Barbara (Santa Ynez River Valley Groundwater Basin 2023c).

General Construction Activity Stormwater Permit

The *General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities*, Order No. 2022-0057-DWQ, NPDES No. CAS000002 (Construction General Permit), adopted by the SWRCB, regulates construction activity that includes clearing, grading, and excavation resulting in soil disturbance of at least one acre of total land area. The Construction

General Permit authorizes the discharge of stormwater to surface waters from construction activities. The Construction General Permit requires that all developers of land where construction activities will occur over more than one acre do the following:

- Complete a Risk Assessment to determine pollution prevention requirements pursuant to the three risk levels established in the Construction General Permit;
- Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the United States;
- Develop and implement a Stormwater Pollution Prevention Plan (SWPPP) that specifies Best Management Practices (BMPs) that will reduce pollution in stormwater discharges to the Best Available Technology/Economically Achievable/Best Conventional Pollutant Control Technology standards;
- Perform inspections and maintenance of all BMPs; and
- Conduct stormwater sampling, if required based on risk level.

To obtain coverage in accordance with the Construction General Permit, a project applicant must electronically file all permit registration documents with the SWRCB prior to the start of construction. Permit registration documents must include:

- Notice of Intent, including Risk Level determination;
- Site Drawings and Maps;
- SWPPP;
- Applicable plans, calculations, and other supporting documentation for compliance with existing permitted Phase I or Phase II municipal separate storm sewer system post-construction requirements or the post-construction standards of the Construction General Permit;
- Annual fee per the current 23 California Code of Regulations Chapter 9 fee schedule for NPDES stormwater permits; and
- All applicable additional Permit Registration Document information.

Typical BMPs included in in SWPPPs are designed to minimize erosion during construction, stabilize construction areas, control sediment, and control pollutants from construction materials.

Industrial General Permit

The Industrial General Permit is a regulatory framework issued by SWRCB under the NPDES program. The Industrial General Permit applies to various types of industrial facilities in California identified within the SWRCB's *List of Potentially Regulated Standard Industrial Classification Codes*. These facilities include manufacturing plants, commercial printing, air courier services, refuse systems, and others, which have the potential to discharge stormwater runoff into water bodies. To comply with the Industrial General Permit, the operators of these regulated industrial facilities must implement a SWPPP that outlines measures and BMPs the operator of an industrial facility must implement to prevent stormwater pollution. Operators of facilities regulated by the Industrial General Permit are also required to conduct stormwater monitoring of pollutants including, but not limited to, sediment, metals, oils, and total suspended solids. In addition, the Industrial General Permit requires industrial discharge to comply with TMDL implementation requirements for impaired water bodies.

c. Local Regulations

Water Quality Control Plan

The Central Coast RWQCB has adopted the *Water Quality Control Plan for the Central Coast Basin* (the Basin Plan), which delineates water resource area boundaries based on hydrological features. For the purposes of achieving and maintaining water quality protection, specific beneficial uses have been identified for each of the surface waters and groundwater management zones described in the Basin Plan. Once beneficial uses are designated, appropriate water quality objectives are established, and programs that maintain or enhance water quality are implemented to ensure the protection of beneficial uses.

The Basin Plan also established implementation programs to achieve water quality objectives to protect beneficial uses and require monitoring to evaluate the effectiveness of the programs. These objectives must comply with the State antidegradation policy (SWRCB Resolution No. 68-16), which is designed to maintain high-quality waters while allowing some flexibility if beneficial uses are not unreasonably affected.

Groundwater Sustainability Plan

SGMA requires that GSAs prepare Groundwater Sustainability Plans (GSPs) for high and medium priority basins. A GSP provides a roadmap for how groundwater basins will reach long-term sustainability. GSPs are required to include management actions and projects to achieve sustainable use of groundwater, with growth projections considered. DWR has designated the Santa Ynez River Valley Basin as a medium priority basin, meaning the basin is subject to the requirements of SGMA. To comply with SGMA, the EMA GSP developed the *Santa Ynez Valley Groundwater Basin – Eastern Management Area Groundwater Sustainability Plan* (ESA 2022). The EMA GSP adopted the GSP on January 6, 2022. GSPs are required to be approved by DWR; the GSP is currently being reviewed by DWR.

Post-Construction Stormwater Management Requirements

The Central Coast RWQCB adopted the *Post-Construction Stormwater Management Requirements for Development Projects in the Central Coast Region* (Resolution R3-2013-0032) in July 2013, which outlines runoff reduction and treatment requirements. Specifically, Resolution R3-2013-0032 outlines post-construction requirements for development projects in the Central Coast Region. The post-construction requirements mandate that development projects use Low Impact Development (LID) to detain, retain, and treat runoff. LID incorporates and conserves on-site natural features, together with constructed hydrologic controls to more closely mimic pre-development hydrology and watershed processes.

To assist project applicants in meeting the requirements of Resolution R3-2013-0032, the City uses the County of Santa Barbara's *Stormwater Technical Guide for Low Impact Development* which is designed to ensure compliance with postconstruction requirements, facilitate review of applications, and promote integrated LID design. The guide interprets, clarifies, and adds to the post-construction requirements (County of Santa Barbara 2017).

Low Threat Discharge Permit

The Central Coast RWQCB has a general permit for discharges that pose a low threat to water quality (*Waste Discharge Requirements National Pollutant Discharge Elimination System (NPDES)*

General Permit for Discharges with Limited Threat to Water Quality; Order No. R3-2022-0035, NPDES No. CAG99304). The permit's provisions cover discharges that contain minimal amounts of pollutants and pose little or no threat to water quality and the environment, including discharges of highly treated groundwater generated during aquifer pumping tests, dual-phase extraction or other remedial pilot tests, excavation dewatering, and pumping to contain groundwater plumes.

Solvang Municipal Code

Title 14, Chapter 3 of the City's Municipal Code states development in Solvang must regulate stormwater flows during construction of a new development or redevelopment project or at an industrial or commercial facility. These requirements may include a combination of structural and non-structural BMPs that are consistent with the California Stormwater Quality Association (CASQA) Best Management Practice Handbooks or equivalent and shall include requirements to ensure the proper long-term operation and maintenance of these BMPs. Title 14, Chapter 3 of the City's Municipal Code also adopts and implements a Construction Industry's Guide to BMPs that provides a list of typical BMPs that are used in the construction industry that owners or developers are required to include within a project's Erosion and Sediment Control Plan and/or SWPPP. The BMP guide also outlines the City's stormwater requirements which are based on project size (total square feet of soil disturbance) and/or creation or replacement of impervious surfaces.

Chapter 13 of the Municipal Code is designed to minimize flood hazards. Chapter 13 includes requirements for development in a flood hazard zone, such as development permits, construction standards, and development in floodways.

4.9.3 Impact Analysis

a. Methodology and Significance Thresholds

Methodology

The impact analysis is based on an assessment of baseline conditions for Solvang, including watersheds and surface waters, groundwater, and inundation areas as described in Section 4.9.1, *Setting*. This analysis identifies potential impacts related to hydrology and water quality resulting from construction, operation, and maintenance activities of future development that could occur under the proposed project. Potential impacts to hydrology and water quality are evaluated based on the adherence to local, State, and federal standards and implementation of BMPs for control of surface runoff and reduction of pollutants in stormwater runoff.

Significance Thresholds

CEQA Guidelines Appendix G provides the following significance thresholds to determine if a project would have a potentially significant impact on hydrology and water quality. For the purposes of this EIR, implementation of the proposed project may have a significant adverse impact if it would:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality;
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;

3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
 - i. Result in a substantial erosion or siltation on- or off-site;
 - ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
 - iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
 - iv. impede or redirect flood flows;
4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or
5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

b. Project Impacts and Mitigation Measures

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

Impact HYD-1 DEVELOPMENT FACILITATED BY THE 2045 GENERAL PLAN WOULD BE REQUIRED TO ADHERE TO EXISTING PERMITTING AND MUNICIPAL CODE REQUIREMENTS WHICH WOULD MINIMIZE THE POTENTIAL FOR DEVELOPMENT TO DEGRADE WATER QUALITY. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Construction

Future development facilitated by the 2045 General Plan would result in construction activities which may contribute to soil erosion and degraded water quality. Construction activities that would disturb one or more acres of land are subject to the NPDES Construction General Permit, which requires the development of a SWPPP developed by a certified Qualified SWPPP Developer. The SWPPP would include project-specific BMPs to control erosion, sediment release, and otherwise reduce the potential for discharge of pollutants from construction into stormwater. Typical BMPs include, but are not limited to, installation of silt fences, erosion control blankets, anti-tracking pads at site exits to prevent off-site transport of soil materials, and good-housekeeping BMPs to prevent leaks and spills. As required by the City’s Municipal Code, if a project would disturb less than one acre of land, the applicant would be required to prepare and obtain City approval of a project-specific Erosion and Sediment Control Plan which is required to include BMPs that would be implemented during project construction. Compliance with the NPDES Construction General Permit and the City’s Municipal Code would ensure BMPs are implemented during construction to minimize potential impacts to water quality. Therefore, this impact would be less than significant.

Operation

Operation of future development facilitated by the 2045 General Plan would be required to comply with the provisions of California’s Phase II MS4 Permit. Section 14-3 of the City’s Municipal Code requires any owner or person developing real property to integrate post-construction requirements that would control the volume, rate, and potential pollutant load of runoff. In addition, projects that create or replace greater than or equal to 2,500 square feet of impervious surface must implement

post-construction BMPs and submit a Stormwater Control Plan listing applicable BMPs to the City for review and approval. Pursuant to the Municipal Code, post construction requirements must comply with the RWQCB Central Coast Region Resolution No. R3-2013-0032. In addition, the Municipal Code requires industrial and commercial facilities and other new development, as applicable, to minimize the discharge of pollutants through the implementation of BMPs that are consistent with the CASQA BMP Handbooks or equivalent, such as the County's Stormwater Technical Guide for Low Impact Development.

The City enforces project-specific operational BMP requirements by incorporating these as conditions of approval into land use entitlements and building permits specific to a project, and requires applicants to ensure the proper long-term operation and maintenance of selected BMPs. Any future development facilitated by the 2045 General Plan that would be categorized under Standard Industrial Classification codes would be subject to the Industrial General Permit, which requires development of a site-specific operational SWPPP. Implementation of the operational SWPPP would reduce the risk of water degradation on-site and off-site from soil erosion and other pollutants related to project operation, because an operational SWPPP requires the design, installation, and maintenance of post-construction stormwater controls. The operational SWPPP identifies the site-specific sources of pollutants and describes the BMPs implemented at the facility to prevent dry weather runoff and to reduce pollutants in storm water discharges. Adherence to permit and Municipal Code requirements would minimize impacts related to water quality and ensure development facilitated by the 2045 General Plan would not violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Therefore, this impact would be less than significant.

Mitigation Measures

No mitigation measures are required because this impact would be less than significant.

<p>Threshold 2: Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?</p>

Impact HYD-2 DEVELOPMENT FACILITATED BY THE 2045 GENERAL PLAN WOULD INCREASE THE AMOUNT OF IMPERVIOUS SURFACE AREA AND INCREASE GROUNDWATER DEMAND IN SOLVANG. COMPLIANCE WITH THE CENTRAL COAST RWQCB, MUNICIPAL CODE, AND 2045 GENERAL PLAN POLICIES WOULD ENSURE THE 2045 GENERAL PLAN WOULD NOT SUBSTANTIALLY DECREASE GROUNDWATER SUPPLIES OR INTERFERE SUBSTANTIALLY WITH GROUNDWATER RECHARGE. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Development facilitated by the 2045 General Plan would incrementally increase the amount of impervious surface area overlying the Santa Ynez River Valley Basin within Solvang which could reduce the potential for groundwater recharge from infiltration. As discussed in Impact HYD-1 , compliance with the City's Municipal Code, as well as the Central Coast RWQCB post-construction requirements for stormwater management would maximize the on-site infiltration capacity for new development and redevelopment projects within Solvang. This would reduce the quantity of stormwater runoff that enters the storm drainage system and discharges to surface waters and the Santa Ynez River.

For the existing conditions of the City's groundwater supply, and the expected effects of increased water demand from development facilitated by the proposed project, refer to Section 4.16, *Utilities and Service Systems*. Although development within Solvang would increase demand for water by

approximately 29 percent, groundwater that would be provided to Solvang is under the management of the EMA GSA which would ensure Solvang’s increased demand would not substantially decrease groundwater supplies. Furthermore, as discussed in Section 4.16, *Utilities and Service Systems*, local groundwater supply is only used as a backup source of water in Solvang. The 2045 General Plan Environment and Sustainability Element and Public Facilities, Services, and Infrastructure Element includes the following polices for groundwater management:

- **Policy PFS-1.3: Water Supply and Infrastructure.** The City shall ensure there is adequate water supply and infrastructure in place or that will be available in place and prior to approving any new development. The City will consider existing and future water supply and demand prior to project approval.
- **Policy ENV-7.1: Adequate Water Supply.** The City shall continue to work with water providers to ensure adequate water supply is available to the community. Further, the City shall impose limitations or moratoriums on new development or redevelopment when the water supply of existing customers will be adversely impacted.
- **Policy ENV-7.2: Diverse Water Supply.** The City shall pursue a water supply program consisting of the development of multiple sources of water, water conservation, and groundwater management to accommodate projected water demand and provide as best possible for water supply security.

Because groundwater provided to Solvang would be managed by the EMA GSA, and 2045 General Plan policies prohibit development unless an adequate water supply is available, implementation of the 2045 General Plan would not substantially decrease groundwater supplies. This impact would be less than significant.

Mitigation Measures

No mitigation measures are required because this impact would be less than significant.

Threshold 3: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

- i) Result in a substantial erosion or siltation on- or off-site;
- ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
- iv) impede or redirect flood flows.

Impact HYD-3 DEVELOPMENT FACILITATED BY THE 2045 GENERAL PLAN WOULD BE REQUIRED TO ADHERE TO EXISTING PERMITTING AND MUNICIPAL CODE REQUIREMENTS WHICH WOULD ENSURE DEVELOPMENT WOULD NOT SUBSTANTIALLY ALTER EXISTING DRAINAGE PATTERNS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Construction facilitated by the 2045 General Plan would alter the existing drainage patterns of individual project sites which has the potential to cause erosion and flooding, exceed stormwater

drainage capacity, provide additional sources of polluted runoff, or alter flood flows. As described in Impact HYD-1, projects subject to the NPDES Construction General Permit would be required to prepare a SWPPP which includes project-specific BMPs to control erosion, sediment release, and otherwise reduce the potential for discharge of pollutants from construction into stormwater. Projects not subject to the NPDES Construction General Permit would be required to implement a project-specific Erosion and Sediment Control Plan which must include BMPs to minimize adverse impacts associated with the alteration of drainage patterns. As described in Impact HYD-4 below, Chapter 13 of the City's Municipal Code requires flood control measures to be implemented during construction for projects in flood hazard areas, including development to be elevated above the base flood elevation.

Runoff during operation of development facilitated by the 2045 General Plan would be regulated under the Phase II MS4 Permit. Projects that create or replace greater than or equal to 2,500 square feet of impervious surface must implement post-construction BMPs and submit a Stormwater Control Plan listing applicable BMPs to the City for review and approval. Pursuant to the Municipal Code, post construction requirements must comply with the RWQCB Central Coast Region Resolution No. R3-2013-0032. Compliance with existing regulations would ensure development facilitated by the 2045 General Plan would not substantially alter the existing drainage pattern of a site or area such that substantial erosion or siltation on- or off-site, flooding on- or off-site, exceedance of the capacity of existing or planned stormwater drainage systems or provision of additional sources of polluted runoff, or impediment or redirection of flood flows would occur. Therefore, this impact would be less than significant.

Mitigation Measures

No mitigation measures are required because this impact would be less than significant.

Threshold 4: In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?
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Impact HYD-4 DEVELOPMENT FACILITATED BY THE 2045 GENERAL PLAN MAY OCCUR IN FLOOD HAZARD AREAS. COMPLIANCE WITH APPLICABLE MUNICIPAL CODE REQUIREMENTS AND PROPOSED SAFETY ELEMENT POLICIES WOULD ENSURE DEVELOPMENT WITHIN AREAS SUBJECT TO INUNDATION WOULD BE SITED, DESIGNED, AND CONSTRUCTED AS TO NOT EXACERBATE RISKS FROM RELEASE OF POLLUTANTS FROM INUNDATION. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Solvang is approximately 6.1 miles north of the Pacific Ocean and approximately 8.9 miles west of Cachuma Lake. Due to the distance between Solvang and these features, Solvang is not subject to inundation from tsunami or seiche. Portions of Solvang are within the dam inundation zones of the Bradbury Dam and Alisal Creek Dam, as shown in Figure 4.9-2. The potential for dam failure is low as these dams have been constructed to the State and federal specifications. DWR inspects dams on an annual basis to identify any issues and ensure the continued safety of a dam's operation (DWR 2023b). The 2045 General Plan would not introduce development that would compromise the safety of the Bradbury Dam and Alisal Creek Dam and therefore would not risk pollutant release due to dam inundation.

Portions of Solvang are within a 100-year or 500-year floodplain. Future development facilitated by the 2045 General Plan in a flood hazard zone would risk pollutant release due to inundation. The California Building Code provides guidelines for development within flood hazard areas, including requirements that new development be elevated above the base flood elevations. Section 13-1-8 of

the Municipal Code requires project applicants to obtain a development permit prior to construction in a flood hazard area. Section 13-1-9 of the Municipal Code sets forth requirements for construction in areas of flood hazards. These include, but are not limited to, standards for anchoring, required use of specific construction materials, required elevation and floodproofing, and utility installments designed to minimize discharge into flood waters. Section 13-1-10 of the Municipal Code prohibits encroachments in a floodway unless a registered professional engineer or architect demonstrates the encroachment shall not result in any increase in the base flood elevation.

In addition to existing Municipal Code requirements, the 2045 General Plan Safety Element would implement the following policies to minimize potential adverse impacts due to inundation:

- **Policy SAF-4.1: Development in Floodplains.** The City shall not approve new development in areas subject to a 100-year flood event, based on Federal Emergency Management Agency (FEMA) mapping or on other updated mapping acceptable to the City, unless and until the flood hazard has been mitigated.
- **Policy SAF-4.2: Mitigate Flooding.** The City shall require new development and redevelopment to incorporate flood reduction measures into the project design in areas known to be prone to flooding.
- **Policy SAF-4.3: Dam Inundation.** The City shall update and maintain the Emergency Management Plan to minimize the risk to life and property due to dam failure.
- **Policy SAF-4.4: Reducing Flood Impacts.** The City shall require mitigation to less than significant levels for new development with the potential to increase flooding impacts.
- **Policy SAF-4.5: 100-Year Flood Plains.** The City shall require development on land subject to a 100- year flood event, based on Federal Emergency Management Agency (FEMA) mapping or on other updated mapping acceptable to the City, to conform to National Flood Insurance Program (NFIP) standards.
- **Policy SAF-4.6: New Parcels.** The City shall prohibit the creation of parcels upon which the presence of easements, floodplain, marsh or riparian habitat, or other features would leave insufficient land to build and operate structures. This action item shall not apply to open space lots specifically created for dedication to the City or another appropriate party for habitat protection, flood control, drainage, or wetland maintenance.

Development facilitated by the 2045 General Plan within flood hazard zones would be required to adhere to the requirements of the City’s Municipal Code and policies included in the 2045 General Plan Safety Element. With adherence to these regulations and policies, the 2045 General Plan would not risk the release of pollutants due to inundation. Therefore, this impact would be less than significant.

Mitigation Measures

No mitigation measures are required because this impact would be less than significant.

Threshold 5: Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Impact HYD-5 DEVELOPMENT FACILITATED BY THE 2045 GENERAL PLAN WOULD USE GROUNDWATER IN COMPLIANCE WITH THE MANAGEMENT STRATEGIES SET FORTH BY THE EASTERN MANAGEMENT AREA GROUNDWATER SUSTAINABILITY AGENCY. FUTURE DEVELOPMENT WOULD BE REQUIRED TO ADHERE TO FEDERAL, STATE, AND LOCAL REGULATIONS TO MINIMIZE WATER QUALITY IMPACTS IN COMPLIANCE WITH THE BASIN PLAN. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

DWR has designated the Santa Ynez River Valley Basin as a medium priority basin, meaning the basin is subject to the management requirements established by SGMA (DWR 2023a). The portion of the Santa Ynez River Valley Basin underlying Solvang is under the jurisdiction of the EMA GSA, which has prepared a GSP for its respective jurisdiction over the Santa Ynez River Valley Basin. The primary regulatory tool available to GSAs under SGMA is the ability to set and enforce area-specific mandatory groundwater pumping limitations through regular updates to GSPs for medium- and high-priority groundwater basins. Between 2012-2022, the City pumped an average of 536 AFY groundwater from the Santa Ynez River Valley Basin (van der Linden 2023). DWR-approved GSPs are required to provide mechanisms that allow the sustainable use of groundwater, with growth projections considered. As discussed in Impact HYD-2, groundwater provided to development facilitated by the 2045 General Plan would be under the management of the EMA GSA which describes sustainable yields and programs to limit groundwater extractions based on groundwater conditions within its jurisdiction (EMA GSA 2022). Furthermore, Policy PFS-1.3 and Policy ENV-7.1 require the City to ensure adequate water supply is available for new development and impose development limitations or moratoriums when inadequate water supply exists. Accordingly, the 2045 General Plan would utilize groundwater consistent with the groundwater management strategies of the GSP and would not exceed groundwater use such that sustainable yields identified by the EMA GSA are exceeded. Therefore, the 2045 General Plan would not conflict with or obstruct implementation of a sustainable groundwater management plan.

Solvang is in the jurisdiction of the RWQCB Central Coast Region. The RWQCB Central Coast Region's Basin Plan functions as the master water quality control planning document for the region. The Basin Plan includes implementation programs to achieve water quality objectives (RWQCB 2019). As a result, future development facilitated by the proposed project would be required to implement State and local regulatory requirements, including the provisions of the Construction General Permit, the Industrial General Permit, and the City's Municipal Code. Operations of future development facilitated by the 2045 General Plan would comply with the MS4 Permit and City Municipal Code requirements for post-construction stormwater control. These regulatory requirements support the goal of the Basin Plan to minimize adverse impacts to water quality. Therefore, the proposed project would not conflict with or obstruct the implementation of a water quality control plan. This impact would be less than significant.

Mitigation Measures

No mitigation measures are required because this impact would be less than significant.

4.9.4 Cumulative Impacts

The analysis in this section examines impacts of the 2045 General Plan on hydrology and water quality throughout the Santa Ynez River Watershed and Santa Ynez River Valley Basin. Cumulative development throughout the cumulative impact analysis area, in combination with the proposed

2045 General Plan, would gradually increase development and population growth and would therefore gradually increase the potential for impacts to hydrology and water quality, including increased stormwater runoff, erosion, pollutant discharge to waterbodies, increased risk of release of pollutants from inundation, and decreased groundwater infiltration capacity.

Some types of impacts to hydrology and water quality that may be additive in nature, and thus cumulative, include violation of water quality standards, interference with groundwater recharge, increased erosion, increased non-point source pollution, and increased runoff. Cumulative development would increase erosion and sedimentation resulting from grading and construction, as well as changes in drainage patterns which could degrade surface and ground water quality. Cumulative development overlying the Santa Ynez River Valley Basin would increase the amount of impervious surfaces and could combine with the effects of the development within Solvang to potentially reducing groundwater recharge to the basin. Cumulative development relying on groundwater as a source of water supply could also combine with increased development within Solvang to decrease available water supplies in the Santa Ynez River Valley Basin. In addition, new development would increase the generation of urban pollutants that may adversely affect water quality in the long term.

Development of individual projects in the cumulative impact analysis area would be required to comply with applicable water quality regulations, as discussed in Impact HYD-1. Compliance with these existing requirements would require implementation of BMPs to reduce impacts associated with stormwater and pollutant discharge during construction and operation of projects and reduce adverse changes to hydrology water quality throughout the cumulative impact area. Therefore, cumulative impacts related to water quality and drainage patterns would be less than significant.

Development of individual projects through cumulative impact area would increase impervious surfaces and reduce groundwater recharge, but, as described in Impact HYD-2, compliance with applicable policies related to impervious surfaces, such as the Central Coast RWQCB post-construction requirements for stormwater management, would reduce impacts throughout the cumulative impact area. Therefore, cumulative impacts related to groundwater recharge would be less than significant. Although cumulative development would increase demand for groundwater, the agencies managing groundwater in the Santa Ynez River Valley Basin are responsible for ensuring the basin is sustainably managed. Groundwater management takes into consideration increased demand from anticipated development to ensure groundwater is not over drafted. Therefore, cumulative impacts related to groundwater supplies would be less than significant.

As discussed in Impact HYD-4, compliance with applicable laws and regulations such as the California Building Code would regulate development in flood prone areas and minimize the potential for release of pollutants from inundation. Therefore, cumulative impacts related to risk of release of pollutants would be less than significant.

For the reasons stated above, potential impacts associated with hydrology and water quality would not be cumulatively considerable, and cumulative impacts related to hydrology and water quality would be less than significant.