3.9 HYDROLOGY AND WATER QUALITY

This section identifies the regulatory context and policies related to hydrology and water quality, describes the existing hydrologic conditions within the Master Plan Area, and evaluates potential hydrology and receiving water-quality impacts of the 2035 Master Plan. Potential effects on the capacity of water and sewer/wastewater are addressed in Section 3.14, "Utilities and Service Systems."

No comments related to hydrology and water quality were received in response to the Notice of Preparation (NOP).

3.9.1 Regulatory Setting

FEDERAL

Clean Water Act

The U.S. Environmental Protection Agency (EPA) is the lead federal agency responsible for water quality management. The Clean Water Act (CWA) is the primary federal law that governs and authorizes water quality control activities by EPA as well as the states. Various elements of the CWA address water quality. These are discussed below.

CWA Water Quality Criteria/Standards

Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of designated beneficial uses of the water body in question and criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. As described in the discussion of state regulations below, the State Water Resources Control Board (SWRCB) and its nine regional water quality control boards (RWQCBs) have designated authority in California to identify beneficial uses and adopt applicable water quality objectives.

CWA Section 303(d) Impaired Waters List

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that do not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the state develop a total maximum daily load (TMDL) for each of the listed pollutants. The TMDL is the amount of the pollutant that the water body can receive and still comply with water quality objectives. The TMDL is also a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. In California, implementation of TMDLs is achieved through water quality control plans, known as Basin Plans. See "State" section, below.

Stenner Creek is included on the 303(d) list of impaired waters for the 2016 reporting year (SWRCB 2016). State water quality standards specify designated uses individual waters should support (e.g., recreation or water supply). Stenner Creek is designated for agricultural supply, freshwater habitat, municipal and domestic supply, water contact recreation, and noncontact recreation. Stenner Creek is listed as impaired for pathogen pollutants related to domestic animals and livestock, natural sources, and urban runoff/storm sewers (SWRCB 2017).

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the United States. NPDES permit regulations have been established for broad categories of discharges including point source waste discharges and nonpoint source storm water runoff. Each permit identifies limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits.

"Nonpoint source" pollution originates over a wide area rather than from a definable point. Nonpoint source pollution often enters receiving water in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances. Two types of nonpoint source discharges are controlled by the NPDES program: discharges caused by general construction activities and the general quality of storm water in municipal storm water systems. The goal of the NPDES nonpoint source regulations is to improve the quality of storm water discharged to receiving waters to the maximum extent practicable.

The RWQCBs in California are responsible for implementing the NPDES permit system (see "State" section, below).

CWA Section 404 Discharge of Dredged or Fill Materials

Under Section 404 of the CWA, the U.S. Army Corps of Engineers (USACE) has primary responsibility for administering regulations for disposal of dredged or fill material in waters of the U.S., including jurisdictional wetlands. Activities in waters of the United States regulated under this program include dredging and filling of waters of the U.S. associated with a development project, water resource projects (such as dams and levees), infrastructure development (such as highways and airports) and mining projects.

Refer to Section 3.5, "Biological Resources," for further information regarding Clean Water Act requirements and applicability to development within the Master Plan Area.

National Flood Insurance Act

The Federal Emergency Management Agency (FEMA) is tasked with responding to, planning for, recovering from and mitigating against disasters. The Federal Insurance and Mitigation Administration within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that aid with mitigating future damages from natural hazards.

FEMA prepares Flood Insurance Rate Maps (FIRMs) that delineate the regulatory floodplain to assist local governments with the land use planning and floodplain management decisions needed to meet the requirements of NFIP. Floodplains are divided into flood hazard areas, which are areas designated per their potential for flooding, as delineated on FIRMs. Special Flood Hazard Areas are the areas identified as having a 1 percent chance of flooding in each year (otherwise known as the 100-year flood). In general, the NFIP mandates that development is not to proceed within the regulatory 100-year floodplain if the development is expected to increase flood elevation by 1 foot or more.

STATE

California Porter-Cologne Act

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants SWRCB and each of the nine RWQCBs power to protect water quality and is the primary vehicle for implementation of California's responsibilities under the CWA. The applicable RWQCB for the 2035 Master Plan is the Central Coast RWQCB. SWRCB and the Central Coast RWQCB have the authority and responsibility to adopt plans and policies, regulate discharges to surface water and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substances, sewage, or oil or petroleum products.

Under the Porter-Cologne Act, each RWQCB must formulate and adopt a water quality control plan (known as a "Basin Plan") for its region. The Water Quality Control Plan for the Central Coast Basin (Basin Plan) includes beneficial uses for inland surface waters, detailed Water Quality Objectives (WQOs), and an Implementation Plan to achieve WQOs. In addition to the Implementation Plan, the Basin Plan includes brief descriptions of SWRCB plans and policies and numerous RWQCB plans and policies that direct SWRCB and RWQCB actions and clarify the RWQCB's intent. The objective of the Basin Plan is to show how the quality of surface water and groundwater in the Central Coast Region should be managed and to provide the highest water quality reasonably possible. It designates beneficial uses and water quality objectives for waters of the state, including surface waters and groundwater and includes programs of

implementation to achieve water quality objectives. The current Basin Plan consists of the 2019 Basin Plan edition and all amendments fully-approved after March 2019.

The Central Coast RWQCB (Region 3) also administers the adoption of waste discharge requirements (WDRs), manages groundwater quality, and adopts projects within its boundaries under the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit).

NPDES General Permit for Storm Water Discharges Associated with Construction Activity

SWRCB adopted the statewide NPDES General Permit for storm water discharges associated with construction activity in August 1999. The state requires that projects disturbing more than 1 acre of land during construction file a Notice of Intent with the RWQCB to be covered under this permit. Cal Poly is subject to the SWRCB's Water Quality Order No. 2009-0009-DWQ, NPDES General Permit No. CAS000002 for Storm Water Discharges Associated with Construction and Land Disturbance Activities (2009 General Permit; SWRCB 2012), which requires the preparation of a storm water pollution prevention plan (SWPPP) for discharges regulated under the SWRCB program and applies to construction activities resulting in a land disturbance of 1 acre or more, or less than 1 acre but part of a larger common plan of development. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. As part of a SWPPP, best management practices (BMPs) are required to reduce impacts to the maximum extent practicable to prevent or reduce storm water pollution through treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

NPDES Municipal Storm Water Permitting Program

The Municipal Storm Water Permitting Program regulates storm water discharges from municipal separate storm sewer systems (MS4s). Storm water is runoff from rain or snowmelt that runs off surfaces such as rooftops, paved streets, highways or parking lots and can carry with it pollutants such as oil, pesticides, herbicides, sediment, trash, bacteria, and metals. The runoff can then drain directly into a local stream, lake, or bay. Often, the runoff drains into storm drains that eventually drain untreated runoff into a local water body.

The RWQCB regulates urban runoff discharges under the NPDES permit regulations, including from point discharge sources (i.e., industrial outfall discharges) and non-point discharge sources (i.e. storm water runoff) sources. Cal Poly is considered a Non-Traditional MS4 and is subject to the SWRCB's Water Quality Order No. 2013-0001-DWQ, NPDES General Permit No. CAS000004 for Waste Discharge Requirements for Storm Water Discharges from Small MS4s (2013 General Permit) (SWRCB 2013). This permit requires the implementation of specific BMPs as well as monitoring and reporting on storm water management activities, including those during construction and post-construction.

California Water Code

The California Water Code is enforced by the California Department of Water Resources (DWR). The mission of DWR is "to manage the water resources of California in cooperation with other agencies, to benefit the state's people, and to protect, restore, and enhance the natural and human environments." DWR is responsible for promoting California's general welfare by ensuring beneficial water use and development statewide.

Groundwater Management

Groundwater Management is outlined in the California Water Code, Division 6, Part 2.75, Chapters 1-5, Sections 10750 through 10755.4. The Groundwater Management Act was first introduced in 1992 as Assembly Bill (AB) 3030 and has since been modified by Senate Bill (SB) 1938 in 2002, AB 359 in 2011, and the Sustainable Groundwater Management Act (SGMA) (SB 1168, SB 1319, and AB 1739) in 2014. The intent of the Acts is to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions and to provide a methodology for developing a groundwater management plan.

The SGMA became law on January 1, 2015 and applies to all groundwater basins in the state (Water Code Section 10720.3). By enacting the SGMA, the legislature intended to provide local agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdiction (Water Code Section 10720.1).

Pursuant to the SGMA, any local agency that has water supply, water management or land use responsibilities within a groundwater basin may elect to be a "groundwater sustainability agency" for that basin (Water Code Section 10723). A portion of the West Campus subarea is located within the San Luis Obispo Valley Groundwater Basin, which is designated by DWR as a high priority basin (County of San Luis Obispo 2019a). The County of San Luis Obispo and the City of San Luis Obispo formed Groundwater Sustainability Agencies (GSAs) within their respective jurisdictions to cover the entire San Luis Obispo Valley Groundwater Basin. The West Campus portion of the Master Plan Area that intersects the project site falls under the County of San Luis Obispo's GSA coverage area (County of San Luis Obispo 2019a). SMGA also requires local public agencies and GSAs in high- and medium-priority basins to develop and implement Groundwater Sustainability Plans (GSP) or alternatives to GSPs (DWR 2019). However, no GSP has been prepared for the San Luis Obispo Valley Basin as of the date of issuance of this EIR.

LOCAL

Cal Poly is an entity of the CSU, which is a constitutionally created state agency, and is therefore not subject to local government planning and land use plans, policies, or regulations. Cal Poly may consider, for informational purposes, aspects of local plans and policies for the communities surrounding the campus when it is appropriate. The proposed project would be subject to state and federal agency planning documents described herein but would not be bound by local or regional planning regulations or documents such as the City's General Plan or municipal code.

San Luis Obispo County General Plan

The San Luis Obispo County (County) General Plan is the foundation upon which all land use decisions for the unincorporated areas of the County are based. Its main purposes are to illustrate the public policy for future land use for both public and private lands, and to provide the County Board of Supervisors, Planning Commission, Subdivision Review Board and Zoning Administrator (Hearing Officer) with specific direction for future decisions affecting land use development. The County General Plan Conservation and Open Space Element includes policies related to water quality, control flooding, and groundwater monitoring and management (County of San Luis Obispo 2010), including:

- Policy WR 3.1: Prevent Water Pollution. Take actions to prevent water pollution, consistent with federal and state water policies and standards, including but not limited to the federal Clean Water Act, Safe Drinking Water Act, and NPDES.
- Policy WR 3.2: Protect Watersheds. Protect watersheds, groundwater and aquifer recharge areas, and natural drainage systems from potential adverse impacts of development projects.
- Policy WR 3.3: Improve Groundwater Quality. Protect and improve groundwater quality from point and non-point source pollution, including nitrate contamination; Methyl tert-butyl ether (MTBE) and other industrial, agricultural, and commercial sources of contamination; naturally occurring mineralization, boron, radionuclides, geothermal contamination; and seawater intrusion and salts.
- Policy WR 6.2: Region-wide Permitting. The County should coordinate with applicable state, regional, and local permitting agencies to develop and implement a region-wide permitting program that will provide consistent watershed or regional implementation measures.
- Policy WR 6.3: Drainage Problems. Consider drainage problems in the context of an entire watershed. Drainage and flood management plans should address property owner and developer responsibilities. These plans should use an integrated watershed approach that incorporates flood management, water quality, water supply, groundwater, and ecosystem protection and enhancement objectives on a watershed/basin scale.
- Policy WR 6.4: Integrated Drainage Approach. Assure that proposed development integrates ecosystem enhancement, drainage control, and natural recharge as applicable.

City of San Luis Obispo General Plan

The City of San Luis Obispo (City) General Plan was adopted in December 9, 2014 to guide the use and protection of various resources to meet community purposes. The City General Plan's Conservation and Open Space Element and Water and Wastewater Element incorporate various polices that address water quality, flood protection, storm water runoff, groundwater recharge, and discharge of urban pollutants (City of San Luis Obispo 2014a, 2018). The following policies have been excerpted from the City's General Plan:

- 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 so. "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, organizations, and other agencies 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, flood plains, 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 storm water, reduce polluted urban runoff, recharge groundwater and reduce 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 the 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. Ground water 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 in 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, storm water 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.

- Policy B 4.2.2: Infiltration and Inflow. The City will minimize storm water and groundwater infiltration and inflow into the sewer system.

San Luis Obispo Creek Watershed Waterway Management Plan

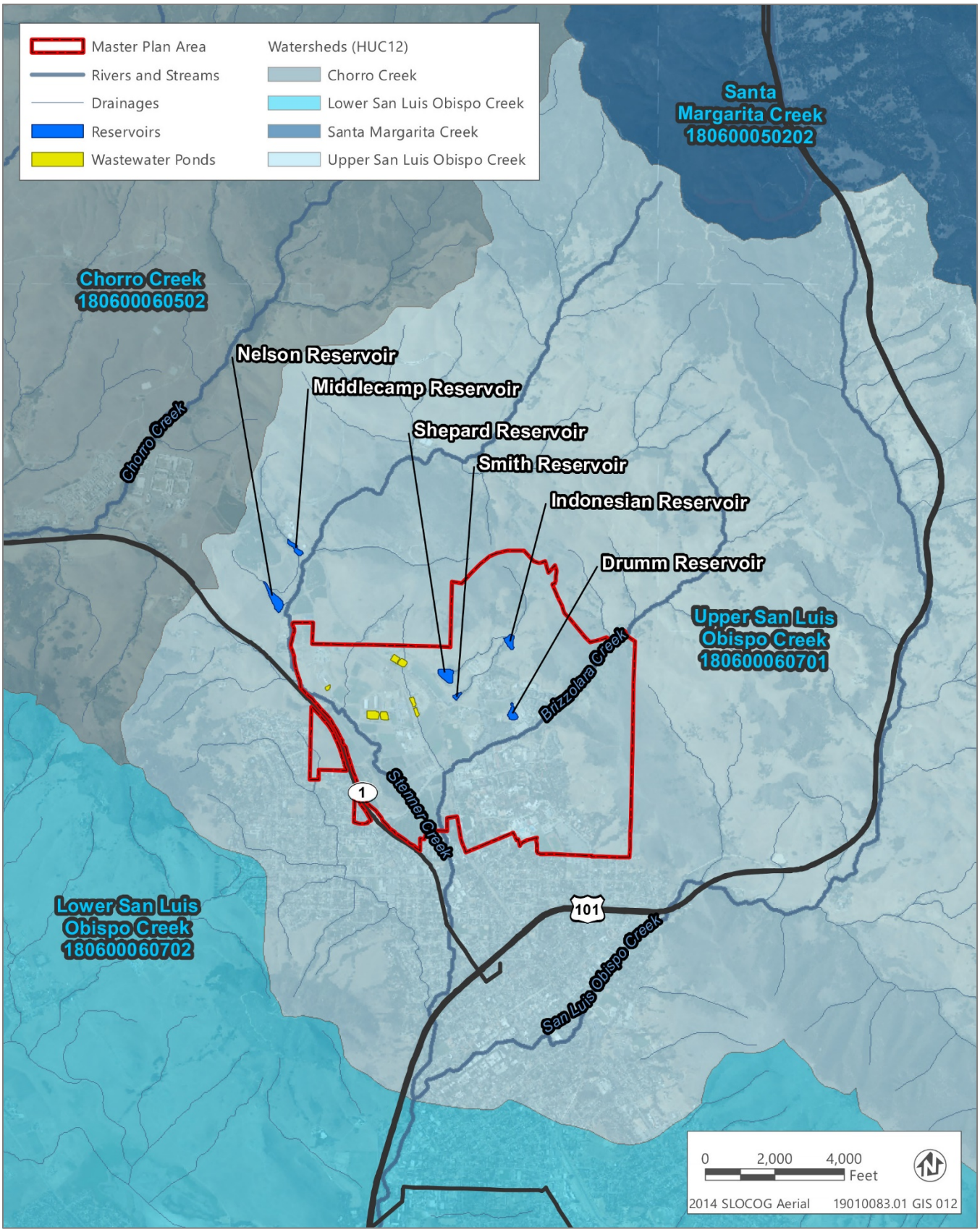
In 2003, the City and County of San Luis Obispo adopted the San Luis Obispo Creek Watershed Waterway Management Plan (WMP) to address flooding, erosion, water quality, and ecological issues within the San Luis Obispo Creek watershed. The WMP includes a stream management and maintenance program and a drainage design manual that outline approaches, guidelines, and procedures for routine stream maintenance, storm drain systems, stormwater detention facilities, and erosion control. During development of the plan, Cal Poly served as a member of the plan's advisory committee.

3.9.2 Environmental Setting

HYDROLOGY AND DRAINAGE

Regional Hydrology

The Master Plan Area is located in San Luis Obispo County, and abuts the city of San Luis Obispo to the south and west, and open space, ranch land, and public land to the north and east. The Master Plan Area is located approximately 12 miles east of the Pacific Ocean and west of the Coast Ranges Geomorphic Province of California. The main campus and is located within the Upper San Luis Obispo Creek watershed (Figure 3.9-1), within the larger Pismo Creek-Frontal Pacific Ocean watershed. The Upper San Luis Obispo Creek watershed encompasses approximately 18 square miles and is characterized by steep hillsides, a deep valley, and dense oak woodland and chaparral vegetation communities. This watershed consists primarily of agriculture, rural land uses, and scattered development (The Land Conservancy of San Luis Obispo County 1996), as well as developed portions, such as the campus and the City of San Luis Obispo. Nearby watersheds include the Chorro Creek watershed to the southwest, the Santa Margarita Creek watershed to the northwest, Lopez Canyon watershed to the north, and the Lower San Luis Obispo Creek watershed to the southeast (Figure 3.9-1).



Source: Data downloaded from Cal Poly and USGS in 2019

Figure 3.9-1 Existing Water Resources

Local Hydrology

The Master Plan Area lies within the Stenner Creek Sub-basin, within the San Luis Obispo Creek Basin, which serves as an important groundwater recharge area for the San Luis Obispo Creek Basin (Cal Poly 2015). San Luis Obispo Creek is a perennial coastal stream that flows south through the city of San Luis Obispo to an estuary at Avila Beach. Brizzolara Creek and Stenner Creek are two major tributaries to San Luis Obispo Creek (see Figure 3.9-1). Brizzolara Creek flows from the hills northeast of the Master Plan Area to the southwest through the Master Plan Area. This creek runs from the boundary between the East Campus and Academic Core subareas, on the south, and the North Campus subarea. At its intersection with Highland Drive, Brizzolara Creek makes an abrupt turn to the south and enters the West Campus subarea. Brizzolara Creek drains the Poly Canyon area north of Highland Drive and flows southwest along the southern boundary of North Campus subarea, and northern boundary of the Academic Core and East Campus subareas, toward the City of San Luis Obispo. Stenner Creek flows southwest through the West Campus subarea and parallel to the east side of State Route 1 for approximately 1.8 miles, before it reaches San Luis Obispo Creek. Stenner Creek is the most affected by known point source discharges, including animal holding facilities, processing facilities, and agricultural fields in the North and West Campus subareas, and is included on the CWA 303(d) list of impaired waters for the 2016 reporting year (SWRCB 2016). Stenner Creek and Brizzolara Creek are also considered state and federal jurisdictional waters and are subject to USACE, California Department of Fish and Wildlife, and Central Coast RWQCB jurisdiction.

Reservoir System

There are six reservoirs within the San Luis Obispo Creek watershed. Four of them—the Drumm, Shepard, Indonesian, and Smith Reservoirs—are located within the Master Plan Area, and two—the Nelson and Middlecamp Reservoirs—are located outside of, and just northwest of the Master Plan Area (see Figure 3.9-1). As noted in further detail in Section 3.14, "Utilities and Service Systems," Cal Poly owns the rights to 959 acre-feet per year of water from Whale Rock Reservoir, located approximately 15 miles northwest of the Master Plan Area in the community of Cayucos. Non-potable water from Whale Rock Reservoir is pumped to Middlecamp Reservoir, located approximately 0.45 mile north of the Cal Poly Campus, and then distributed to Indonesian Reservoir for distribution to the campus agriculture reservoir system for irrigation of crops and animal production. Excess water is allowed to flow via a drainage canal to Nelson Reservoir, located to the south of Indonesian Reservoir, where it provides for recharge of the Stenner Creek aquifer. Smith Reservoir receives overflow from Shepard Reservoir, located to the northwest, and an unnamed drainage adjacent to the Equine Center, located approximately 5.7 miles south of Smith Reservoir. Surface water from Smith and Shepard Reservoirs then passes through a 4-foot-wide culvert along Mt Bishop Road and into Brizzolara Creek. Drumm Reservoir has capacity to hold approximately 449 acre-feet of non-potable water that is used primarily for irrigation, research at Cal Poly's Irrigation Training and Research Center, and non-point source pollution abatement at constructed wetlands in James Creek. Excess water is allowed to flow via a drainage from Nelson Reservoir, where it provides groundwater recharge for Stenner Creek.

Groundwater Hydrology

A portion of the West Campus subarea is located within the San Luis Obispo Valley Groundwater Basin, while the remainder of campus is not located within a designated groundwater basin. The San Luis Obispo Valley Groundwater Basin encompasses approximately 12,700 acres and 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. The northwestern portion of the basin is drained by San Luis Obispo, Prefumo, and Stenner Creeks. The southeastern portion of the basin is drained by tributaries of Pismo and Davenport Creeks. Average annual precipitation in the region ranges from 19 to 23 inches, with an average of 21 inches across the valley. The groundwater basin receives recharge from infiltration of precipitation within the valley, applied irrigation water, and streamflow. The total storage capacity of this groundwater basin was most recently reported as 24,000 acre-feet as of 1991 with 22,000 acre-feet of usable capacity. The sustained yield of the basin is estimated at 5,900 acre-feet per year, where sustained yield is defined as the maximum quantity of water that is available from a groundwater basin on an annual basis (DWR 2004).

The San Luis Obispo Valley Basin is designated as a high-priority basin by DWR (County of San Luis Obispo 2019a). Per SGMA, DWR is required to prioritize groundwater basins and direct high- and medium-priority basins to meet a

timeline of targets on the path to sustainability (DWR 2018). The portion of the Master Plan Area that intersects the basin falls under the County of San Luis Obispo's GSA coverage area (County of San Luis Obispo 2019a), and Cal Poly is currently working as a participant in regional planning activities related to SGMA.

Per Section 3.14.2, Cal Poly currently pumps 120 acre-feet per year of groundwater from seven on-campus wells for agricultural purposes only. Five of the wells are located within the San Luis Obispo Creek watershed, which includes the Master Plan Area, and the other two are located within the Chorro Creek watershed located to the northeast. Groundwater is pumped from the wells located on University land and is limited by relatively shallow, low-capacity aquifers, especially during drought years (Cal Poly 2019).

Storm Water Drainage

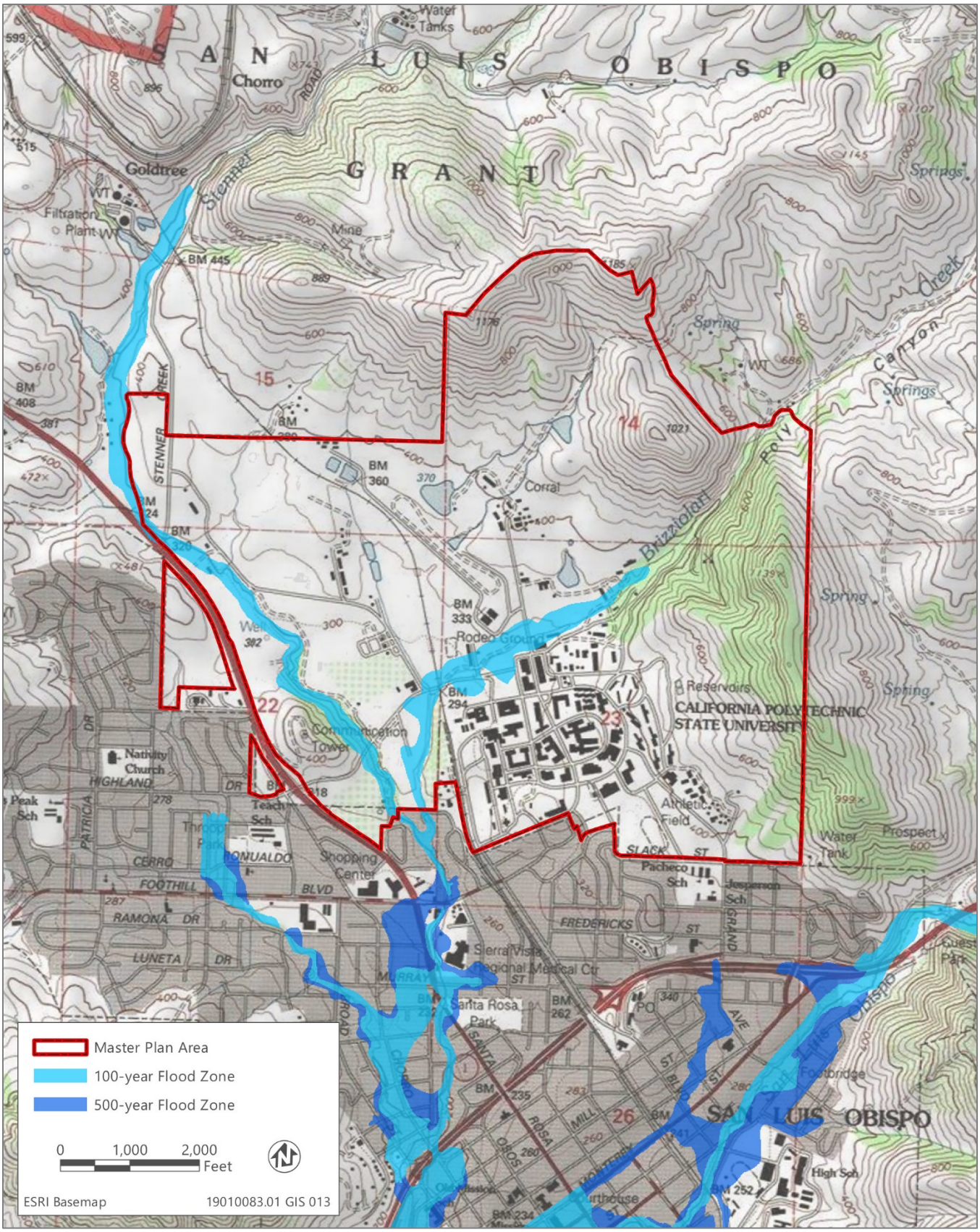
Storm water runoff is collected in a series of inlets and storm drain lines located throughout campus and conveyed to existing drainages and either Brizzolara or Stenner Creek. The majority of the Master Plan Area drains into Brizzolara Creek, however runoff from portions of the West Campus subarea drain into unnamed drainage (located near Foothill Road) to Stenner Creek. Both creeks ultimately drain into the estuary at the Pacific Ocean in Avila Beach. Cal Poly, in compliance with existing storm water laws and permitting requirements, has developed a Storm Water Management Program. This program addresses cleaning and maintaining storm drain inlets and catch basins, ensuring buildings and other campus amenities are designed and constructed in ways that minimize impacts on water quality, and installing storm water BMPs for projects in accordance with approved designs (Cal Poly 2018a). Cal Poly requires and has installed storm interceptors for all new projects, including the Poly Canyon Student Housing complex and other recent campus developments (Cal Poly 2017). Further, as part of the Storm Water Management Program, any new development that will create and/or replace 2,500 square feet or more of impervious surface would be required to incorporate post-construction stormwater management controls, including rooftop runoff infiltration, conservation of natural and permeable areas, and/or additional onsite bioretention.

Through the General Construction Permit (GCP) and MS4 storm water programs, Cal Poly seeks to maintain and improve water quality on campus by monitoring pollution concentrations in surface water, groundwater, and storm water that leaves the main campus through the storm water system. These programs address permit requirements and the use of BMPs on campus (Cal Poly 2015). Cal Poly is also required to comply with the 2013 General permit and MS4 permits.

Flood Conditions

For planning purposes, the flood event most often used to delineate areas subject to flooding is the 100-year flood. This is an event that statistically has a 1 percent chance of occurring in any given year. Portions of the campus are located within special flood hazard areas subject to inundation during a 100-year flood, Zone A (no base flood elevations determined), as identified by the FEMA FIRM (FEMA 2019). These areas are located along Stenner Creek and Brizzolara Creek and shown in Figure 3.9-2.

Flooding can also occur as a result of dam failure. A number of natural or human causes, including earthquakes, improper siting, fast rising flood waters, erosion of the dam face or foundation, and structural or construction flaws, can contribute to dam failure. Other reservoir-related flooding events can result from massive, fast-moving landslides that displace large volumes of water contained in a reservoir. Such rapid displacement of water can cause large quantities of water to travel over the dam, resulting in downstream flooding. Although several dams and reservoirs are located in San Luis Obispo County (see Figure 3.9-1), the Master Plan Area is not located within an identified dam inundation area on the Dam Inundation Map, according to the Safety Element of the County of San Luis Obispo's General Plan (County of San Luis Obispo 1999), and is therefore not at risk for dam failure–related flooding.



Source: Data downloaded from FEMA in 2019

Figure 3.9-2 Designated Flood Zones

WATER QUALITY

Surface Water Quality

Storm water runoff in urban areas typically contains oils, grease, fuel, antifreeze, and byproducts of combustion (such as lead, cadmium, nickel, and other metals), as well as nutrients, sediments, and other pollutants, such as fertilizers and pesticides. Additionally, sizable quantities of animal waste from pets (e.g., dogs and cats) and agricultural operations could lead to fecal contamination of water sources. Precipitation during the early portion of the wet season (December to April) conveys these pollutants into storm water runoff, resulting in high pollutant concentrations in the initial wet weather runoff. This initial runoff, containing peak pollutant levels, is referred to as the "first flush" of storm events. It is estimated that during the rainy season, the first flush of heavy metals and hydrocarbons would occur during the first 5 inches of seasonal rainfall.

The water quality of streams, creeks, ponds, and other surface water bodies can be greatly affected by pollution carried in contaminated surface water runoff.

Impaired Water Bodies

As discussed in Section 3.9.1 above, Stenner Creek is included on the 303(d) list of impaired waters for the 2016 reporting year (SWRCB 2016). State water quality standards specify designated uses individual waters should support (e.g., recreation or water supply). Stenner Creek is designated for agricultural supply, freshwater habitat, municipal and domestic supply, water contact recreation, and noncontact recreation. Stenner Creek is listed as impaired for pathogen pollutants related to domestic animals and livestock, natural sources, and urban runoff/storm sewers (SWRCB 2008, 2017).

Wastewater Retention Ponds

In addition to existing creeks, unnamed drainages, and reservoirs within the Master Plan Area, Cal Poly has seven clay-lined wastewater retention ponds located within the San Luis Obispo Creek watershed (see Figure 3.9-1). These include two wastewater retention ponds that are associated with the Swine Unit, four that are associated with the Dairy Unit (two are emergency overflow ponds), and one that is associated with the Beef Cattle Evaluation Center, located within the northwestern portion of the main campus. Wastewater from these ponds may be used for spray irrigation purposes. These wastewater retention ponds are subject to Cal Poly's WDR for point-source pollution, which has been put into place to regulate wastewater that is discharged to land from Confined Animal Facilities to protect the recreational use and drinking water supplies of downstream beneficial uses. The WDR provides a framework for how each Confined Animal Facility is managed, including how many animals are permitted in the facility, how compost is managed, and how many gallons can be discharged to these wastewater retention ponds and to existing storm water drainage facilities from the facility each day (Cal Poly 2018b).

Groundwater Quality

Groundwater quality can be affected by many things, but the chief controls on the characteristics of groundwater quality are the sources and chemical composition of recharge water, properties of the host sediment, and history of discharge or leakage of pollutants. Groundwater wells in the San Luis Obispo Valley Groundwater Basin typically yield water of magnesium bicarbonate character. Pleistocene alluvial terrace deposits are deeper while Holocene alluvial terrace deposits cover the shallow portions and most recent portions of groundwater basins. Water stored in the Pleistocene alluvial terrace deposits is characterized by poor water quality, whereas water in the Holocene deposits is generally of excellent quality. Water from seven wells on the Cal Poly campus have excessive concentrations of nitrate and chloride (DWR 2004).

3.9.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

Evaluation of potential hydrologic and water quality impacts is based on a review of existing documents and studies that address water resources in the vicinity of the project. Information obtained from these sources was reviewed and summarized to describe existing conditions and to identify potential environmental effects, based on the standards of significance presented in this section. In determining the level of significance, the analysis assumes that the project would comply with relevant federal, state, and local laws, ordinances, and regulations.

Cal Poly 2035 Master Plan

The following Guiding Principles were developed early on in the process by the 2035 Master Plan professional team with input from campus leadership, including the college deans, and considered continuity with the 2001 Master Plan. Guiding Principles can be thought of both as starting points for the plan process and as overarching directives relevant to all or most Master Plan topics. The following principles are relevant to hydrology and water quality:

- **General Principle (GP) 7:** Land uses should be suitable to their locations considering the environmental features of the proposed sites.
- **GP 11:** Cal Poly should be sustainable with regard to its land and resource planning, as well as site and building design, and operations. Cal Poly should meet or exceed all state and system-wide sustainability policies.
- **GP 12:** As an important element of Cal Poly's academic mission, the University should be a proactive leader in wise and sustainable land and resource management.

THRESHOLDS OF SIGNIFICANCE

An impact on hydrology or water quality would normally be significant if implementation of the 2035 Master Plan would:

- violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water or groundwater quality;
- substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- 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 that would:
  - result in substantial erosion or siltation on- or off-site;
  - substantially increase the rate or amount of surface runoff in a manner that would result in flooding on-site or off-site; or
  - create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;
- be located in flood hazard, tsunami, or seiche zones, and risk release of pollutants due to project inundation; or
- conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

ISSUES NOT DISCUSSED FURTHER

All issues applicable to hydrology and water quality listed under the significance criteria above are addressed in this section.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.9-1: Violate Any Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface Water or Groundwater Quality during Construction

Construction and grading activities could adversely affect water quality if construction materials brought on-site result in accidental spills or potential increase in the pollutant load in runoff. Storm events could generate enough runoff to carry storm water from construction sites into surface water bodies. However, through required compliance with existing regulations, such as the 2013 General Permit, Small MS4 Permit, and SWPPPs (required by the 2013 General Permit for development over 1 acre), implementation of the 2035 Master Plan would not violate any water quality standards or waste discharge requirements during construction. This impact would be **less than significant**.

Depending on the final site location, design, and proximity to surface water resources within or adjacent to the project site, future development associated with the 2035 Master Plan has the potential to result in direct and indirect impacts on surface water and groundwater quality. Potentially significant direct impacts could occur if structures, construction materials, soils, or pollutants are placed within existing creek channels or connecting drainages, if existing channels or drainages are directly modified, or if pollutants are allowed to reach groundwater. For instance, within the Academic Core subarea, removal of the existing farm shop and facilities building south of Brizzolara Creek and construction of creek crossings and road extensions could involve soil disturbance within or immediately adjacent to creek channels. Further, construction materials, such as gasoline, diesel fuel, lubricating oils, grease, solvents, and paint, would be brought on site and could result in accidental spills or increase the pollutant load in runoff that could adversely affect surface water or groundwater quality. While most areas of development would not be in close proximity or connected to surface water, storm events could generate enough runoff that storm water from construction sites could be carried into surface water bodies, such as Brizzolara and Stenner Creeks, and pollutant spills could infiltrate to groundwater.

As required by the 2013 General Permit, all future development that would result in disturbance of an area greater than 1 acre would be required to prepare a SWPPP and implement and comply with all applicable BMPs during construction. This would include compliance with the Construction Site Runoff Control Program which would prevent construction-related discharge of pollutants into receiving waters. Structural and nonstructural BMPs under the SWPPP could include sandbag barriers, temporary desilting basins, gravel access roads, dust controls, and construction worker training. All future construction under the 2035 Master Plan would also be subject to the requirements of the 2013 General Permit for development over 1 acre, and compliance with the Small MS4 Permit required for all campus activities, which requires specific measures for construction site runoff control. Further, Cal Poly would implement BMPs for all future development pursuant to the 2035 Master Plan which would ensure that polluted runoff would not enter existing nearby creeks and groundwater as a result of construction. Through compliance with existing permits, plans, and regulations, such as the 2013 General Permit, Small MS4 Permit, and SWPPPs (required by the 2013 General Permit for development over 1 acre) and associated BMPs, implementation of the 2035 Master Plan would not violate any water quality standards or waste discharge requirements during construction. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.9-2: Violate Any Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface Water or Groundwater Quality during Operation

During project operation, increased rates of surface water runoff associated with new impervious surfaces could promote increased erosion and sedimentation or other storm water contamination and adversely affect surface water and groundwater quality. The 2035 Master Plan would comply with the 2013 General Permit, the Small MS4 Permit, SWPPPs, and associated BMPs. Further, the use of low-impact development (LID) techniques would control storm water flow and prevent contamination of surface water resources. Continued compliance with the Small MS4 Permit and the 2013 General Permit would ensure that impacts on water quality standards during operations would be **less than significant**.

The 2035 Master Plan would result in additional development within the Master Plan Area, which would increase the amount of impervious surfaces, which would in turn result in increased rates of surface water runoff. This could promote increased erosion and sedimentation or other storm water contamination and adversely affect surface water and groundwater quality. The main sources of long-term storm water pollution from development are roads, automobiles, landscaping, industrial activity, spills, and illegal dumping. Developed areas can produce storm water runoff that contains oil, grease, and heavy metals and that can carry sediment into drainage pathways. The contaminated runoff ultimately can be carried to adjacent water bodies or can infiltrate groundwater. Further, active recreation sports fields are proposed within the North Campus subarea. These fields would consist of artificial turf, which requires regular washing to remove debris. Field turf washing could result in increased runoff into storm drain systems, which could carry pollutants to adjacent water bodies.

The potential for development sites to generate polluted runoff would be minimized through mandatory compliance with the Cal Poly SWPPP, which outlines post-construction storm water management BMPs, consistent with SWRCB's Water Quality Order No. 2013-0001-DWQ, NPDES General Permit No. CAS000004. These include permanent structural BMPs, such as continuous deflection separation systems, as well as non-structural BMPs, such as conservation of natural and permeable areas. In addition, all future development projects with over 1 acre of disturbance under the 2035 Master Plan would be subject to the requirements of the 2013 General Permit, including post-construction implementation of LID standards for all new development and compliance with current federal and state requirements. Cal Poly would also be required to comply with Non-Traditional Small MS4 Permittee Provisions for all campus development, which include the Pollution Prevention/Good Housekeeping for Permittee Operations Program; the Map of Permittee-Owned or Operated Facilities provision; the preparation of SWPPPs and implementation of associated BMPs; Storm Drain System Assessment and Prioritization; Maintenance of Storm Drain System; Permittee Operations and Maintenance Activities; Pesticide, Herbicide, and Fertilizer Application and New Landscape Design and Maintenance Management; Post Construction Storm Water Management Program; and Program Effectiveness Assessment and Improvement. Additionally, future development within the Master Plan Area would implement LID techniques that mimic the site's predevelopment hydrology with new storm water infrastructure designs, such as detention and retention basins throughout the site, to prevent contamination of surface water and groundwater as well as LID principles in all designs for facilities and improvements that are located adjacent to Brizzolara and Stenner Creeks and their tributaries.

Increased campus population and developed square footage under the 2035 Master Plan would result in an increase in the amount of wastewater generated. Current wastewater flows would continue to be treated at the City's Water Resource Recovery Facility (WRRF), and additional flows would be treated by the Water Reclamation Facility (WRF) proposed as part of the 2035 Master Plan. The City's WRRF and the proposed WRF are and would be subject to WDRs (upon initiation of operation) and would be required to comply with all appropriate WDRs and NPDES requirements during operation. Refer to Section 3.14, "Utilities and Service Systems" for further clarification.

Through compliance with all applicable regulations, including the 2013 General Permit, the, Small MS4 Permit, SWPPPs, NPDES requirements, and WDRs for wastewater treatment and disposal, impacts on water quality during operations would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.9-3: Substantially Decrease Groundwater Supplies or Interfere Substantially with Groundwater Recharge Such That the Project May Impede Sustainable Groundwater Management of the Basin

New land uses proposed under the 2035 Master Plan would not require additional pumping of groundwater to serve the University's potable water needs. However, development and redevelopment under the 2035 Master Plan could result in an increase in impervious surfaces within the main campus, which could reduce storm water infiltration with the underlying groundwater aquifers, and thus impede groundwater recharge. For this reason, the impact on groundwater recharge would be **potentially significant.**

As discussed under Section 3.9.2, the majority of the Master Plan Area lies within the Stenner Creek Sub-basin within the San Luis Obispo Creek Basin, which serves as an important groundwater recharge area for the San Luis Obispo Creek Basin (Cal Poly 2015). Local groundwater is provided via seven agricultural wells owned and operated by Cal Poly. Groundwater is pumped from the wells located on University land and is limited by relatively shallow, low-capacity aquifers, especially during drought years (Cal Poly 2019). As discussed in Section 3.14, "Utilities and Service Systems" and the Water Supply Assessment (WSA) (Appendix H) prepared for the 2035 Master Plan, groundwater withdrawals are only used for agricultural purposes and provide 120 acre-feet per year. The 2035 Master Plan does not propose agricultural or other uses that would result in an increase of groundwater withdrawal rates. Further, as outlined in the WSA, no changes in the quantity or use of groundwater are proposed within the main campus or as otherwise part of the 2035 Master Plan. Thus, the 2035 Master Plan would result in no net change in groundwater use compared to existing conditions (Watearth 2019). As a result, the 2035 Master Plan would not impede sustainable groundwater management of the basin.

However, proposed development and redevelopment of campus land uses under the 2035 Master Plan would result in an increase in impervious surfaces within the Master Plan Area. Increase in impervious surfaces could reduce storm water infiltration to the underlying San Luis Obispo Valley Groundwater Basin, which could impede groundwater recharge. For this reason, the impact on groundwater recharge would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.9-3: Prepare Drainage Plan and Supportive Hydrologic Analysis

Before the commencement of construction activities associated with new development that will modify existing drainage and/or require the construction of new drainage infrastructure to collect and control storm water runoff, Cal Poly shall prepare a drainage plan and supportive hydrologic analysis demonstrating compliance with the following, or equally effective similar measures, to maximize groundwater recharge and maintain similar drainage patterns and flow rates:

a) Off-site runoff shall not exceed existing flow rates during storm events.

b) If required to maintain the current flow rate, appropriate methods/design features (e.g., detention/retention basins, infiltration systems, or bioswales) shall be installed to reduce local increases in runoff, particularly on frequent runoff events (up to 10-year frequency) and to maximize groundwater recharge.

c) If proposed, drainage discharge points shall include erosion protection and be designed such that flow hydraulics exiting the site mimics the natural condition as much as possible.

d) Drainage from impervious surfaces (e.g., roads, driveways, buildings) shall be directed to a common drainage basin.

e) Where feasible, grading and earth contouring shall be done in a way to direct surface runoff towards the above-referenced drainage improvements (and/or closed depressions).

Significance after Mitigation

Mitigation Measure 3.9-3 would require preparation and implementation of a site-specific drainage plan and appropriate measures to ensure proposed development and redevelopment projects do not interfere substantially with groundwater recharge. This mitigation measure would ensure that the impact on groundwater recharge are **less than significant**.

Impact 3.9-4: Substantially Alter the Existing Drainage Pattern of the Site or Area Such That Substantial Erosion, Siltation, Flooding, Polluted Runoff, or an Exceedance of the Capacity of Storm Drainage Systems Would Occur

New land use development could result in increased rates of surface water runoff associated with new impervious surfaces and could promote increased erosion and sedimentation or other storm water contamination, and exceedance of the capacity of existing storm drain systems. Because project-level details of future projects, including their impacts on the existing drainage system of their sites, are not known at this time, the project would result in a **potentially significant** impact on the existing drainage pattern of the site or the surrounding area.

Construction activities associated with development of projects contemplated under the 2035 Master Plan would include grading, demolition, and vegetation removal, which have the potential to temporarily alter drainage patterns. These activities could expose bare soil to rainfall and storm water runoff, which could accelerate erosion and result in sedimentation of storm water and, eventually, water bodies. For example, removal of vegetation, excavation, grading, stockpiling of soils for new buildings, and building foundations would create soil disturbance that could accelerate erosion, especially during storm events. In addition to erosion and sedimentation, construction materials, such as gasoline, diesel fuel, lubricating oils, grease, solvents, and paint, would be brought on site. If existing drainage patterns are substantially altered, this could result in an increase in the pollutant load in runoff, and eventually in nearby water bodies. Further, all future campus development would be required to comply with the Small MS4 permit, which requires specific measures for construction site runoff control, which would ensure that significant alterations of the drainage pattern would not occur. If not properly planned for, alteration of the existing drainage pattern could also result in increased runoff that would exceed the capacity of existing or planned on- or off-site storm water drainage systems or provide substantial additional sources of polluted runoff. Increased rates of surface water runoff associated with new impervious surfaces could promote increased erosion and sedimentation or other storm water contamination and negatively impact surface water and groundwater quality. Further, increased runoff from streets, driveways, parking lots, and landscaped areas can contain nonpoint source pollutants such as oil, grease, heavy metals, pesticides, herbicides, fertilizers, and sediment, which could result in additional sources of polluted runoff into nearby water bodies.

All future development under the 2035 Master Plan would be required to implement LID techniques that result in hydrologic conditions that mimic the site's predevelopment condition. Such techniques include implementation of detention and retention basins throughout the site, limiting impervious coverage, and other runoff attenuating features such that stormwater runoff rates and volumes do not increase. Further, the potential for development sites to generate polluted runoff would be minimized through mandatory compliance with the 2013 General Permit. Cal Poly would also be required to comply with Non-Traditional Small MS4 Permittee Provisions of the 2013 General Permit, described under Impact 3.9-1, above. Development under the 2035 Master Plan would also be required to comply with SWPPP conditions, including storm water runoff monitoring, and implement BMPs in service and construction activities, including construction site runoff control, which would prevent soil and construction wastes from leaving the construction site and entering the storm drain system. Therefore, from a campus-wide perspective, future development under the 2035 Master Plan would not result in a substantial increase in stormwater runoff or polluted runoff. However, because project-level details of all future projects, including their impacts on the existing drainage system of their sites, are not known at this time, future development under the 2035 Master Plan would result in a **potentially significant** impact on the existing drainage pattern of the site or the area and the capacity of storm drain systems.

Mitigation Measures

Mitigation Measure 3.9-4a: Prepare a Drainage Plan and Supportive Hydrologic Analysis

Implement Mitigation Measure 3.9-3, described above.

Mitigation Measure 3.9-4b: Implement Post-Development Storm Water Best Management Practices and Low-Impact Development

During the design review phase of each future development project within the Master Plan Area, Facilities Management and Development will verify that the storm water BMPs and LID technologies were evaluated for each project within the 2035 Master Plan and all appropriate BMPs are incorporated into the specific project. Additionally, consistent with MS4 requirements, Facilities Management and Development will also verify that post-development runoff from the project site will approximate pre-development runoff volumes. If post-development runoff does not approximate pre-development runoff, additional BMPs shall be required in order to ensure that storm drain system capacity is not exceeded and that the drainage pattern of each project site is not significantly altered in such a way that it would result in erosion, siltation, or flooding.

Significance after Mitigation

Implementation of Mitigation Measure 3.9-4a (and Mitigation Measure 3.9-3) would require a drainage plan and implementation of appropriate measures to maintain existing rain event flow rates and patterns to avoid potential impacts such as erosion or siltation, flooding, exceedance of capacity of existing or planned storm water drainage systems, provide additional sources of polluted runoff, or impede or redirect flood flows. Further, Mitigation Measure 3.9-4b would require evaluation of storm water BMPs for each future development or redevelopment project within the 2035 Master Plan to ensure existing drainage maintains pre-development standards per the MS4 permit. These mitigation measures would ensure that the impacts from alteration of existing drainage would be **less than significant**.

Impact 3.9-5: Be Located within Flood Hazard, Tsunami, or Seiche Zones, and Risk Release of Pollutants Due to Project Inundation

Portions of the Master Plan Area are located within special flood hazard areas subject to inundation in a 100-year flood). Increased intensity of development within flood hazard zones could result in risk of release of pollutants such as oil, pesticides, herbicides, sediment, trash, bacteria, and metals during a flood event. This impact would be **potentially significant**.

The Master Plan Area is located approximately 13 miles east of the Pacific Ocean, and thus, based on distance, is not subject to tsunamis. Further, as described in the City of San Luis Obispo General Plan EIR, San Luis Obispo is not subject to lakefront flooding due to earthquake-induced waves (i.e., seiche) (City of San Luis Obispo 2014). In addition, as discussed in Section 3.9.2, the Master Plan Area is not located within an identified dam inundation area on the Dam Inundation Map in the Safety Element of the County of San Luis Obispo's General Plan (County of San Luis Obispo 1999). Regarding the potential for seiche to occur on reservoirs, seiche is not considered a significant risk in San Luis Obispo County because existing water bodies are not large enough to generate large waves (County of San Luis Obispo 1999). For these reasons, this impact is focused on future development within mapped flood hazard zones.

As discussed in Section 3.9.2, above, and shown on Figure 3.9-2, portions of the Master Plan Area are located within special flood hazard areas subject to inundation by the 100-year flood, zone A (no base flood elevations determined) (FEMA 2019). These are limited to areas located along Stenner and Brizzolara Creeks. The 100-year flood hazard area primarily runs along Brizzolara Creek at the northern edge of the Academic Core and East Campus subareas. The flood hazard area along Stenner Creek runs through a small portion of the West Campus (see Figure 3.9-2). Near term projects under the 2035 Master Plan within flood zones along Stenner Creek include the proposed Farm Shop, while near-term projects under the 2035 Master Plan within the Brizzolara Creek flood zone include the Student Housing for Freshmen Students and the Facilities Operations Complex/interim parking lot. Other projects under the 2035 Master Plan could potentially be located within these flood zones at later times. For this reason, introduction of development within flood hazard zones could result in risk of release of pollutants such as oil, pesticides, herbicides, sediment, trash, bacteria, and metals during a flood event within the Stenner and Brizollara Creek flood hazard areas.

Because portions of the Master Plan Area are located within a 100-year flood zone, the 2035 Master Plan could result in the risk of release of pollutants due to project inundation. This impact would be **potentially significant**.

Mitigation Measures

Mitigation Measure 3.9-5: Avoid Development in 100-Year Flood Zones Where Feasible and Incorporate Design Measures to Address Release of Pollutants

All development pursuant to the 2035 Master Plan shall be sited to avoid the 100-year flood zone to the extent practicable. If development within the flood zone cannot be avoided, design measures shall be incorporated into all habitable and critical structures to ensure finished floor levels are constructed above the 100-year flood elevation, or other flood-proofing measures, including a pollutant control plan in the event of a flood, shall be incorporated and approved by Cal Poly in conjunction with FEMA to ensure structures are designed to meet state and federal flood-proofing requirements and to prevent the release of pollutants if flooding does occur.

Significance after Mitigation

Mitigation Measure 3.9-5 would ensure that, if buildings are constructed within the 100-year flood zone, they would be placed above the 100-year flood elevation, to avoid potential impacts associated with flooding, including the release of pollutants. If future development is proposed within an identified flood hazard area, further coordination with FEMA and applicable design considerations would be required to be implemented to avoid potential impacts related to flood hazards and risk of pollutant release. Implementation of Mitigation Measure 3.9-5 would ensure that the impacts from risks associated with risk of release of pollutants during inundation would be **less than significant**.

Impact 3.9-6: Conflict with or Obstruct Implementation of a Water Quality Control Plan or Sustainable Groundwater Management Plan

Cal Poly will continue to adhere to all applicable plans, permits, and regulations governing water quality, and the 2035 Master Plan would not increase the University's use of groundwater. Therefore the 2035 Master Plan would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. During construction and operation of future development under the 2035 Master Plan, Cal Poly would comply with the 2013 General Permit, as well as SWPPP requirements, and implement any associated/necessary BMPs. Further, the use of LID techniques would control storm water flow and discharges and prevent contamination to surface water resources. For these reasons, this impact would be **less than significant**.

Cal Poly monitors for pollution in surface waters, groundwater, and the wastewater that leaves the campus, consistent with the 2013 General Permit, Small MS4 Permit, and associated WDRs for agricultural operations. The campus's existing permits direct the use of BMPs in service and construction activities to manage water resources and require implementation of a Storm Water Pollution Prevention Program that addresses permit requirements, including SWPPPs and storm water runoff monitoring. As discussed under Impact 3.9-1, all proposed development and redevelopment projects under the 2035 Master Plan would be required to comply with all applicable requirements, including implementation of BMPs, development and implementation of project-specific SWPPPs, and compliance with existing permits. With implementation of these requirements, the 2035 Master Plan would not conflict with or obstruct implementation of existing on-campus water quality control programs. Thus, this impact would be less than significant.

Basin Plan

The purpose of the Basin Plan is to show how the quality of surface water and groundwater in the Central Coast Region should be managed to provide the highest water quality reasonably possible. The Basin Plan lists various water uses, it describes the water quality which must be maintained to allow those uses, incorporates an Implementation Plan, summarizes SWRCB and RWQCB plans and policies to protect water quality, and describes statewide and regional surveillance and monitoring programs. As discussed under Section 3.9.1, above, Stenner Creek is included on the 303(d) list of impaired waters for the 2016 reporting year (SWRCB 2016) for pollutants related to domestic animals and livestock, natural sources, and urban runoff/storm sewers (SWRCB 2017). As discussed under Impact 3.9-1, construction and grading activities, particularly within existing creek channels, could result in impacts on water quality if construction materials brought on site result in accidental spills or potential increase to the pollutant load in runoff. Further, as discussed under Impact 3.9-2, during operations, increased rates of surface water runoff

associated with new impervious surfaces could promote increased erosion and sedimentation or other storm water contamination and negatively impact Stenner and Brizzolara Creeks.

The Basin Plan outlines total maximum daily loads (TMDL) in various areas, which determines a pollutant reduction target and allocates load reductions necessary to the sources of the pollutant. Pollutant sources are characterized as either point sources that receive a waste load allocation (WLA) or nonpoint sources that receive a load allocation. The portion of Stenner Creek that is listed as an impaired body is allocated a WLA in the Basin Plan. Per the Basin Plan, this WLA will be implemented by Cal Poly's 2013 General Permit, which controls upstream urban runoff sources (RWQCB 2019). The Basin plan incorporates various implementation actions, including the development of Storm Water Management Plans and SWPPPs, consistent with NPDES requirements, for all developing parcels and MS4 permits to control urban runoff. During both construction and operations of future development under the 2035 Master Plan, Cal Poly would comply with the 2013 General Permit and associated BMPs and the SWPPP, required under the 2013 General Permit for development over 1 acre. Further, all future projects would be required to comply with the existing Small MS4 Permit conditions required for all campus activities, which require specific measures for construction site runoff control. Further, the use of LID techniques would control storm water and prevent contamination to surface water resources. Therefore, through compliance with existing regulations, development under the 2035 Master Plan would be consistent with the Basin Plan. This impact would be less than significant.

Sustainable Groundwater Management Act

SGMA requires local governments and water agencies in California's high and medium priority groundwater basins, as defined by the DWR, to form GSAs. These GSAs are responsible for developing and implementing GSPs for the sustainable management of the groundwater resources (County of San Luis Obispo 2019b). A portion of the West Campus subarea is located within the San Luis Obispo Valley Groundwater Basin, which is designated by DWR as a high-priority basin. As noted above, the remainder of the Master Plan Area is not located within a designated groundwater basin.

The County of San Luis Obispo and the City of San Luis Obispo formed GSAs within their respective jurisdictions to cover the entire San Luis Obispo Valley Groundwater Basin. The City and County of San Luis Obispo GSAs are currently preparing a GSP for the Basin, and it is anticipated that the GSP would not be adopted until January 31, 2022.

However, as noted above under Impact 3.9-3, the 2035 Master Plan would not result in any increase in the quantity of or demand for campus groundwater supplies. As a result, the implementation of the 2035 Master Plan would not result in changes to groundwater supplies, Thus, the 2035 Master Plan would result in no net change of groundwater use between existing conditions (Watearth 2019) and would not conflict with or obstruct implementation of the sustainable groundwater management plan to be adopted for the San Luis Obispo Valley Groundwater Basin. Thus, this impact would be less than significant.

Summary

Future development and redevelopment that would occur under the 2035 Master Plan would be required to comply with all applicable water quality requirements, including implementation of all applicable BMPs, and therefore, would not conflict with or obstruct implementation of existing water quality control programs. During both construction and operations, Cal Poly would comply with the 2013 General Permit, the required SWPPP and associated BMPs, and implement LID techniques that would control storm water and prevent contamination to surface water resources. For these reasons, the 2035 Master Plan would not conflict with the Basin Plan. Finally, the 2035 Master Plan would result in no net change of groundwater use between existing conditions and would not conflict with or obstruct implementation of the sustainable groundwater management plan to be adopted for the San Luis Obispo Valley Groundwater Basin. Construction and operational activities associated with the 2035 Master Plan would not obstruct implementation of an applicable Water Quality Management Plan or Groundwater Basin Plan and this impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

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