4.9 Hydrology and Water Quality

4.9.1 Introduction

This section evaluates the potential for the proposed project, which includes the Housing Element Update (HEU), the Stanford Community Plan (SCP) update, and related rezonings (collectively, the "project") to potentially result in substantial adverse effects related to Hydrology and Water Quality. Below, the Environmental Setting portion of this section includes descriptions of existing conditions relevant to water quality, surface waters, groundwater, and flooding. Further below, existing plans and policies relevant to hydrology and water quality associated with implementation of the project are provided in the Regulatory Setting section. Finally, the impact discussion evaluates potential impacts to water resources that could result from implementation of the project in the context of existing conditions.

Notice of Preparation Comments

A Notice of Preparation (NOP) for the Draft EIR was circulated on August 8, 2022, and a scoping meeting was held on August 23, 2022. A revised NOP reflecting changes to the HEU's list of opportunity sites was circulated on March 21, 2023. Both NOPs circulated for a period of 30 days, and the NOPs and the comments received during their respective comment periods can be found in **Appendix A** of this EIR. Comments relevant to hydrology and water quality included those submitted by Valley Water, which focused on water supplies, groundwater, easements, well registration, and flood potential in the HEU and SCP update area. The Mid-Peninsula Open Space District commented regarding potential impacts associated with loss of permeability (of the landscape), water infiltration to recharge groundwater, and associated effects on downstream creeks.

The California Department of Fish and Wildlife noted potential impacts to riparian habitats including the Llagas Creek drainage channel in Gilroy and alteration of hydrology through diversion of water, and the City of Morgan Hill submitted comments concerning water and sewer capacity. With respect to these comments, it should be noted that the second NOP and the revised list of HEU housing opportunity sites do not include any sites in Gilroy or Morgan Hill, so potential impacts specific to those areas will not be discussed further. However, impacts related to riparian issues are evaluated as applicable in Section 4.3 of this EIR, *Biological Resources*. Likewise, impacts related to water and sewer capacity are addressed where applicable in Section 4.16 of this EIR, *Utilities and Service Systems*.

Information Sources

The primary sources of information referenced in this section included those listed below. Please note that a full list of references for this topic can be found at the end of this section.

- Santa Clara County General Plan (1994).
- Stanford University Community Plan (SCP; 2000).
- Water Quality Control Plan San Francisco Bay Region (2018).

- FEMA National Flood Hazard Layer (2009).
- Groundwater Management Plan for the Santa Clara and Llagas Subbasins (2021).
- Water Supply Assessment, County of Santa Clara 6th Cycle Housing Element Update. San Jose Water (2023). See **Appendix C** of this EIR.
- Santa Clara County Housing Element Update Water Supply Assessment – Stanford University. West Yost (2023). See **Appendix C** of this EIR.

4.9.2 Environmental Setting

Santa Clara County is in the Santa Clara Valley between the Santa Cruz Mountains to the west and the Diablo Range to the east. The climate in this region is characterized by coastal and bay influences, with mild to moderate temperatures year-round. The region averages approximately 14.5 inches of rain per year, with rainfall generally occurring between October and May, as is typical for California's Mediterranean climate.

The entirety of the HEU and SCP update would be located within an area under the water quality jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB).

Surface Waters

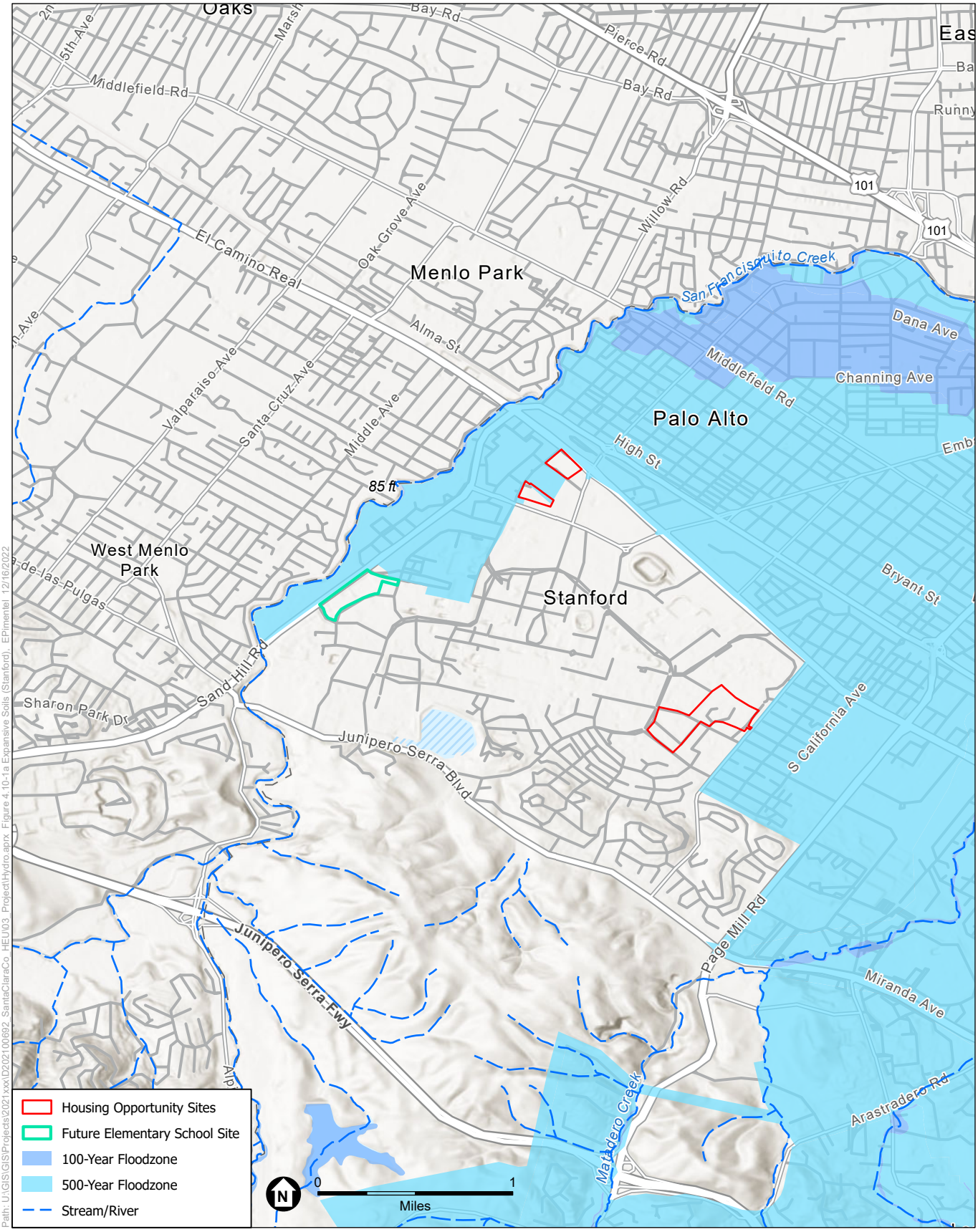
The project area includes multiple watersheds in the San Francisco Bay basin. Surface waters are depicted in **Figures 4.9-1a** through **4.9-1d**.

San José Housing Opportunity Sites

The only San José housing opportunity sites that include or are near surface waters are at the former Pleasant Hills Golf Course just west of the Valle Vista neighborhood. The Pleasant Hills Golf Course is bordered by Flint Creek on the north side (north of Flint Crest Drive) and flanked by South White Road to the west and Tully Road to the south. An unnamed ephemeral waterway crosses through the site as depicted on Figure 4.9-1d. Flint Creek is an ephemeral waterway which, along with Little Silver Creek contributes seasonal flows to Lake Cunningham just southwest of the proposed HEU sites. Lake Cunningham is a 50-acre surface reservoir within a park managed by San José Regional Parks. Flint Creek and Lake Cunningham are in the Lower Silvercreek subwatershed; Lower Silvercreek is a tributary to Coyote Creek.

Stanford Community Plan

The SCP area is within the San Francisquito Creek and Los Trancos Creek watersheds in the western portion of the SCP area, and the Matadero Creek watershed encompassing the eastern portion of the SCP area. The San Francisquito Creek headstream is in the Santa Cruz Mountains at the confluence of Bear Creek and Corte Madera Creek (below Searsville Reservoir). The creek runs approximately 13 miles, and after exiting the foothills near Junipero Serra Boulevard and Alpine Road continues into a confined channel, eventually draining into the Bay south of the Dumbarton Bridge. Los Trancos Creek joins San Francisquito Creek downstream between I-280 and the Stanford Golf Course. Substantial portions of San Francisquito Creek and its tributaries

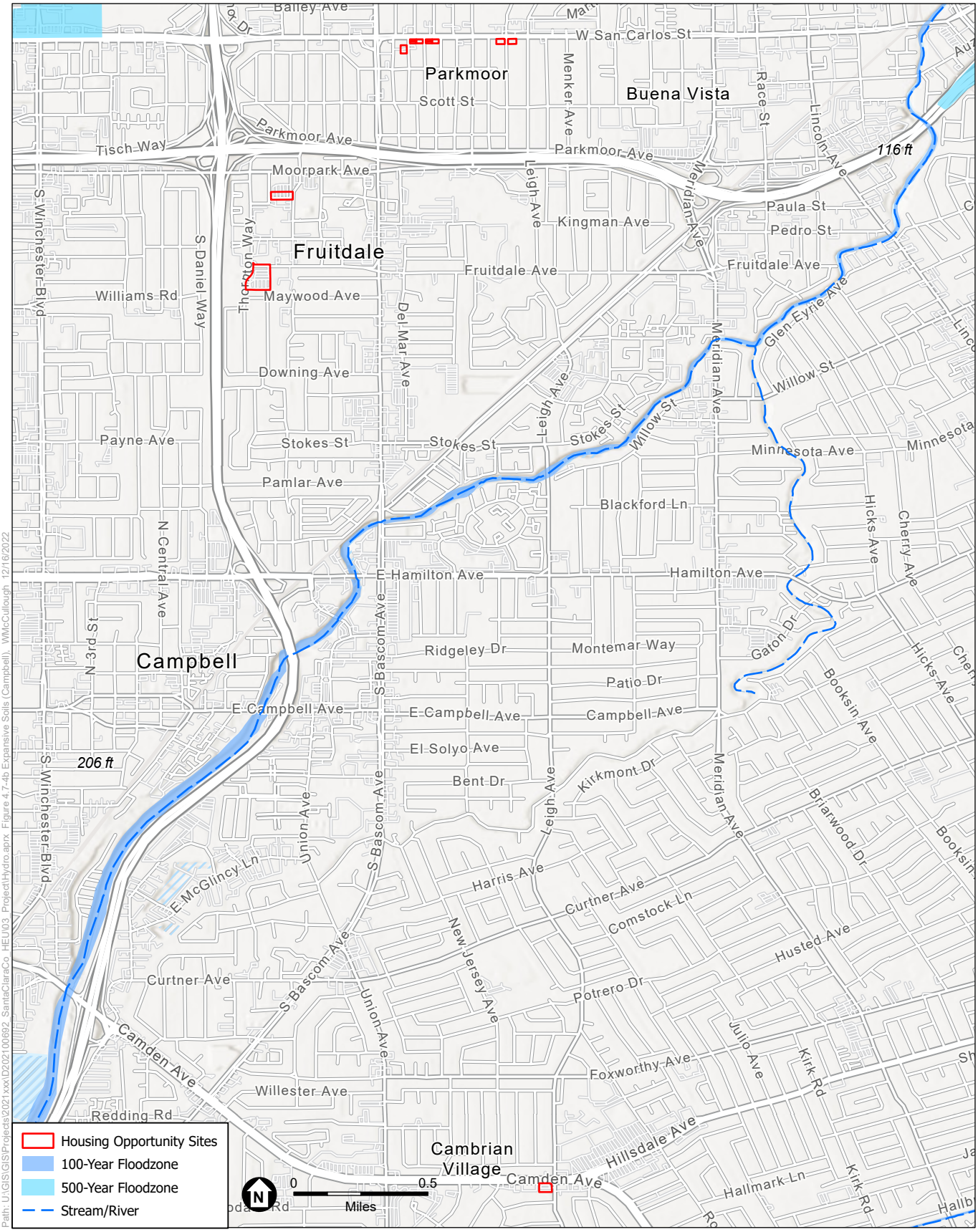


SOURCE: ESA, 2022

Santa Clara County Housing Element and Stanford Community Plan Update

Figure 4.9-1a
Flood Zones and Surface Water
Stanford

ESA

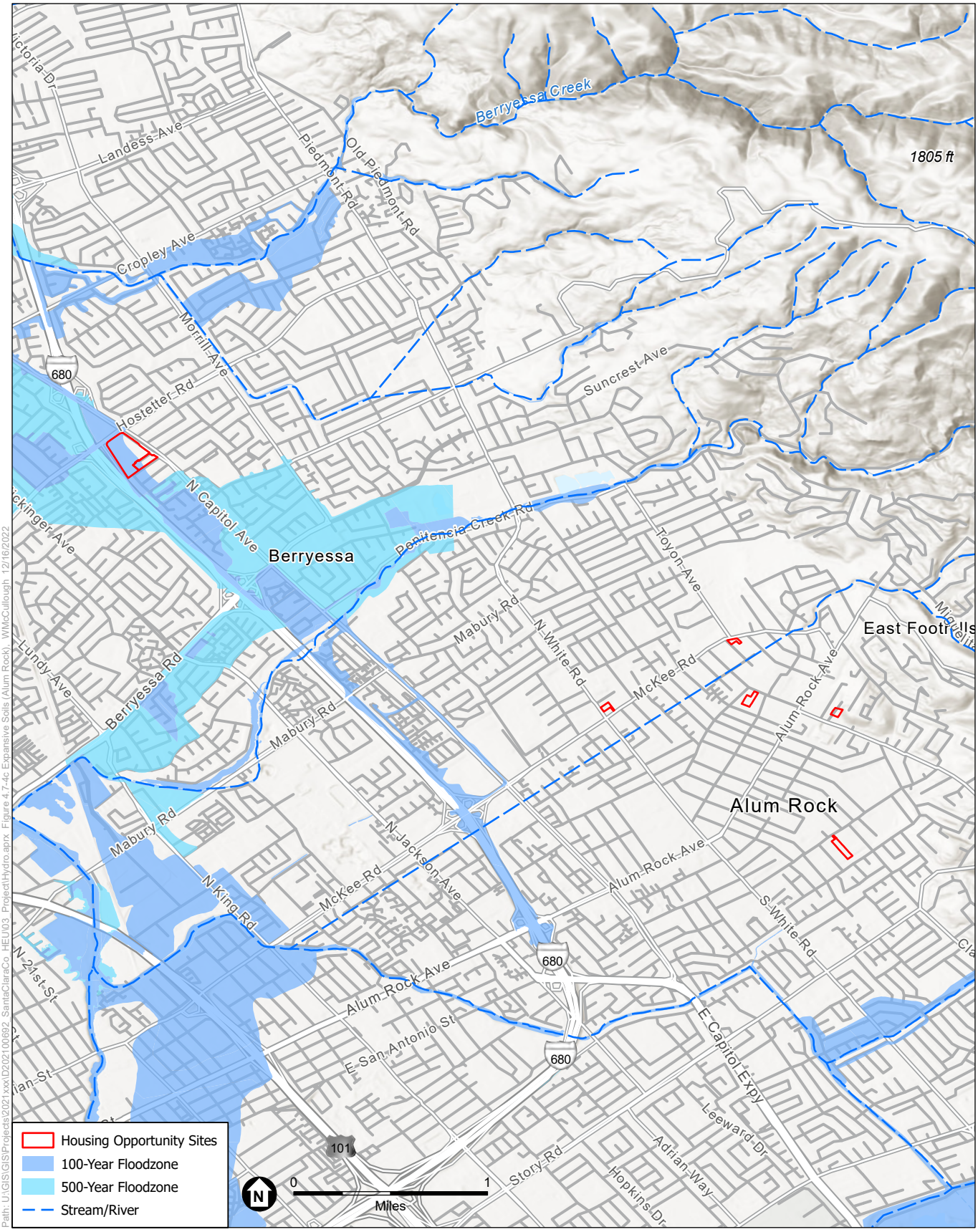


SOURCE: ESA, 2021

Santa Clara County Housing Element and Stanford Community Plan Update

Figure 4.9-1b
Flood Zones and Surface Water
Fruitdale

ESA

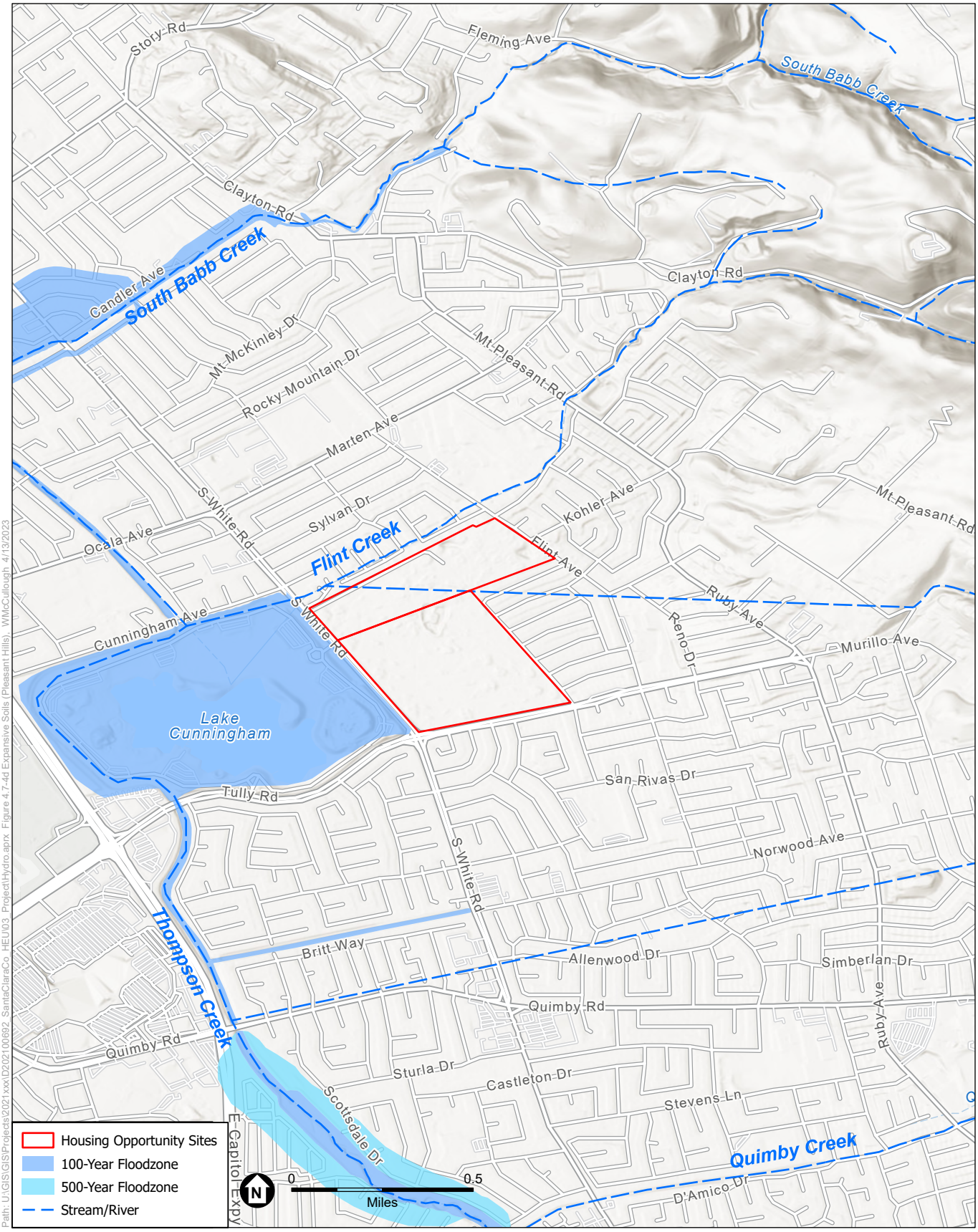


SOURCE: ESA, 2021

Santa Clara County Housing Element and Stanford Community Plan Update

Figure 4.9-1c
Flood Zones and Surface Water
Alum Rock

ESA



SOURCE: ESA, 2022

Santa Clara County Housing Element and Stanford Community Plan Update

Figure 4.9-1d
Flood Zones and Surface Water
Pleasant Hills

ESA

dry up in by mid-summer in all but the wettest rain years. Matadero Creek also has its headwaters in the Santa Cruz Mountains and proceeds northeasterly for 8 miles before joining Adobe Creek and discharging to the San Francisco Bay.

Flooding and Drainage

Flooding is inundation of normally dry land as a result of a rise in surface water levels or rapid accumulation of stormwater runoff during storm events. The Federal Emergency Management Agency (FEMA), through its Flood Insurance Rate Mapping (FIRM) program, designates areas where urban flooding could occur during 100-year and 500-year flood events (see Figures 4.9-1a through 4.9-1d). Statistically, a 100-year flood event has a one-percent probability of occurring in a single year, though as a practical matter 100-year floods can occur in consecutive years or periodically throughout a decade. A 500--year flood event has a 0.2 percent probability of occurring in a single year. As can be seen in Figures 4.9-1a through 4.9-1d, there are several locations within the project area that lie within the 100--year floodplain.

Surface Water Quality

A review of the California 2022 Integrated Report Map shows that multiple creeks in the County are listed on the Clean Water Act 303(d) list[1] (SWRCB, 2022a). San Francisquito Creek (extending from Searsville Lake to the South San Francisco Bay) is listed on the Clean Water Act (CWA) 303(d) list as impaired for pollutants such as trash, sedimentation/siltation, and diazinon (RWQCB, 2018a). South San Francisco Bay and several tributaries passing through the San José area are also listed on the 303(d) list for various pollutants as shown on **Table 4.9-1** (RWQCB, 2018b).

Groundwater Resources

Groundwater in the Santa Clara Valley Groundwater Basin naturally flows towards San Francisco Bay from the uplands in the southwest. Reverse groundwater gradients, from San Francisco Bay toward the uplands, have been seen when pumping has exceeded the rate of recharge. Natural recharge occurs by infiltration of water from streams that enter the valley from the upland areas within the drainage basin and by percolation of precipitation that falls directly on the valley floor. The groundwater recharge areas in the Santa Clara Plain are generally along the perimeter of the subbasin, generally east of Highway 680 and west of Highway 280, with confined areas within the flatland valley, roughly bisected by Highway 101.

According to the 2020 UWMP prepared by Valley Water, groundwater conditions throughout the County are sustainable, with managed and in-lieu recharge programs maintaining adequate storage to meet annual water supply needs and provide a buffer against drought or other shortages. Although groundwater levels declined during the recent (2012-2016) statewide drought, groundwater levels in the Santa Clara and Llagas subbasins quickly recovered after that period of drought, mainly due to Valley Water's comprehensive water management activities and proactive response measures (Valley Water 2021). In the year 2020, managed recharge in the subbasin provided about 63 percent of the total inflow and groundwater pumping accounted for

[1] The term 303(d) list is short for the state's list of impaired and threatened waters (e.g., stream/river segments, lakes). The state identifies the pollutant causing the impairment, when known.

about 91 percent of outflows. In 2020, the outflows exceeded the inflows, resulting in a net decrease in countywide groundwater storage of 21,700 AF from 2019 to 2020 (Valley Water, 2020).

TABLE 4.9-1
CWA 303(D) LISTED SURFACE WATERS

CWA 303(d) Listed Surface Water	Listed pollutant	Source	Status
San Francisquito Creek			
	Diazinon	Unknown	Being addressed by a USEPA-approved[b] TMDL [c]
	Sedimentation/siltation	Unknown	TMDL required
	Trash	Unknown	Being addressed by an action other than a TMDL
South San Francisco Bay			
	Mercury	Unknown	Being addressed by a USEPA-approved TMDL
	Dieldrin	Unknown	TMDL required
	Selenium	Unknown	TMDL required
	DDT	Unknown	TMDL required
	Chlordane	Unknown	TMDL required
	PCBs	Unknown	Being addressed by a USEPA-approved TMDL
	Dioxin compounds	Unknown	TMDL required
	Furon compounds	Unknown	TMDL required
	Invasive species	Unknown	TMDL required
Los Gatos Creek			
	Diazinon	Unknown	Being addressed by a USEPA-approved[b] TMDL [c]
	Temperature, water	Unknown	TMDL required.
Matadero Creek			
	Diazinon	Urban runoff/storm sewers	Being addressed by a USEPA-approved[b] TMDL [c]
	Trash	Unknown	Being addressed by an action other than a TMDL
Coyote Creek			
	Diazinon	Unknown	Being addressed by a USEPA-approved TMDL
	Toxicity	Unknown	TMDL required
	Trash	Unknown	Being addressed by an action other than a TMDL

NOTES:

a The term 303(d) list is short for the State's list of impaired and threatened waters (e.g., stream/river segments, lakes). The State identifies the pollutant causing the impairment, when known.
b USEPA = U.S. Environmental Protection Agency
c TMDL refers to total maximum daily load which is the maximum quantity of a particular contaminant that a waterbody can assimilate without experiencing adverse effects on the beneficial use identified.

SOURCE: California State Water Quality Control Board, 2022a.

The estimated annual recharge rate of the San Francisquito Creek watershed ranges from 4,000 to 8,000 acre-feet per year, which is equivalent to a range of 3.6 to 7.2 million gallons per day (mgd). Depth to groundwater ranges between 30 to 60 feet below ground surface in the SCP Area. Groundwater on the Stanford campus is obtained from the San Francisquito Cone subbasin, which is part of the larger Santa Clara Valley groundwater basin.

The northern portion of the project area (including the SCP update land) overlies the southern end of the Santa Clara Groundwater Subbasin (groundwater basin number 2-009.02; DWR, 2004; or "subbasin") of the Santa Clara Valley Groundwater Basin. The subbasin is not adjudicated, nor has it been found by the Department of Water Resources (DWR) to be in a condition of overdraft (i.e., where groundwater extraction exceeds recharge). As part of the implementation of the Sustainable Groundwater Management Act (SGMA), discussed in additional detail in the regulatory setting, the subbasin was ranked as a "high priority" subbasin under the Statewide Groundwater Elevation Monitoring (CASGEM) basin prioritization process in 2019.

Local water suppliers in this region do not rely principally on groundwater for their water supplies; however, Stanford University supplements its non-potable landscape irrigation system by pumping groundwater into its Lake water system. Stanford can also treat and pump groundwater into the domestic water system in the event of an emergency or other operational need (Stanford, 2022).

Groundwater Quality

The majority of wells in Santa Clara County produce high quality water meeting drinking water standards with no need for additional treatment beyond disinfection (Valley Water, 2021). The exception to this involves elevated nitrite levels in the southern portion of the County, which is not a part of the HEU's study area.

Water Supply

Project development sites located in San José would be served by San José Water, which provides water to the City of San José and other jurisdictions in the area from a diverse portfolio of water supplies. These include imported treated surface water from Valley Water's local reservoirs, the State Water Project, and the federally funded Central Valley Project San Felipe Division. San José Water also draws groundwater from the Santa Clara Subbasin, which is part of the larger Santa Clara Valley Basin. On average, groundwater from the subbasin accounts for 30 to 40 percent of San José Water's total water supply. San José Water also enjoys pre-1914 surface water rights to Saratoga Creek, Los Gatos Creek, and their associated watersheds. San José Water also utilizes recycled water supplies. Groundwater pumping by San José Water over the last several years is shown below in **Table 4.9-2**. The values shown represent acre feet per year (AFY).

TABLE 4.9-2
HISTORICAL GROUNDWATER VOLUME PUMPED BY SAN JOSÉ WATER, AFY

2016	2017	2018	2019	2020
32,644	42,194	36,075	32,825	53,276

SOURCE: San José Water. 2023. County of Santa Clara 6th Cycle Housing Element Update Water Supply Assessment. (Appendix C of this EIR)

Water supplies for the Stanford campus are also diverse. Stanford's primary source of potable water supply is from the San Francisco Regional Water System (RWS), which is operated by the San Francisco Public Utilities Commission (SFPUC). This water is purchased by Stanford from SFPUC under a wholesale contract. Stanford has the capability to supplement potable supplies with groundwater if needed. In addition, Stanford uses local surface supplies and groundwater for non-potable uses like landscape irrigation. The non-potable distribution system is referred to as the Lake Water System. Groundwater pumped from five Stanford-owned and operated wells over the Santa Clara Valley Groundwater Subbasin is currently used only for non-potable uses such as landscape irrigation and is relied upon most during dry years, although groundwater could be used to supplement potable water supply from SFPUC if needed. Groundwater is also pumped into Stanford's Felt Reservoir for rediversion into the Lake Water System. Groundwater pumping on the Stanford campus over the last several years is shown below in **Table 4.9-3**. The values shown represent acre feet per year (AFY).

TABLE 4.9-3
HISTORICAL GROUNDWATER VOLUME PUMPED BY STANFORD, AFY

2016	2017	2018	2019	2020
690	456	554	0	0

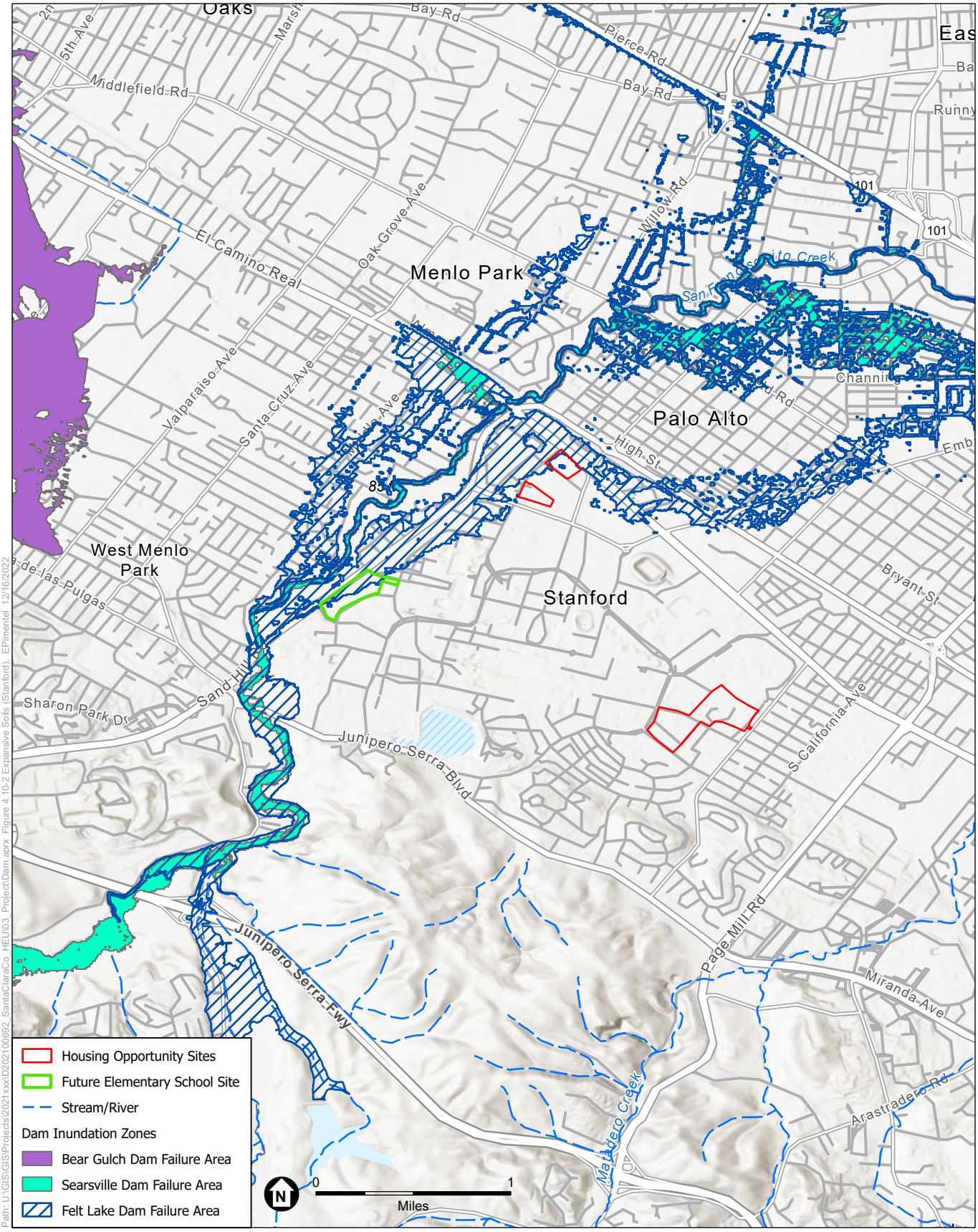
SOURCE: West Yost. 2023. Santa Clara County Housing Element Update Water Supply Assessment. (Appendix C of this EIR)

Inundation from Dam Failure

Dam failure is the uncontrolled release of impounded water (such as a lake or reservoir) behind a dam. Possible causes for dam failure include poor maintenance, flooding, landslides, earthquakes, vandalism, or other issues. Dam failure is extremely rare. There are 10 reservoirs in Santa Clara County owned by the Santa Clara Valley Water District (Valley Water) that present a risk of downstream inundation in the event of a dam failure that could result from an earthquake or other catastrophic event. None of the reservoirs have a dam breach inundation zone that overlaps with any of the HEU housing opportunity sites in San José.

The dam inundation zones for the SCP update area include the (hypothetical sunny day failure) of Searsville Dam and Felt Lake (DSOD, 2021). The southwestern HEU opportunity site within the SCP area could become partially inundated if the dams at Searsville Reservoir and Felt Lake were to become structurally compromised, as depicted on **Figure 4.9-2**. Stanford is currently planning for major modifications to Searsville Dam and Felt Lake to address fish passage, sedimentation, water storage capacity, and seismic upgrades (Stanford, 2020).

Felt Lake (CA00670) owned by Stanford University, is a 900 acre-feet (AF) capacity reservoir with an earthen embankment constructed in 1930. The assessed condition for this structure is satisfactory, meaning that no existing or potential dam safety deficiencies are recognized, and acceptable performance is expected under all loading conditions (static, hydrologic, seismic) in accordance with the minimum applicable state or federal regulatory criteria or tolerable risk guidelines. The downstream hazard rating for this structure is categorized as extremely high.



SOURCE: ESA, 2022; DWR, 2021

Santa Clara County Housing Element and Stanford Community Plan Update

Figure 4.9-2
Dam Inundation Zones
Stanford

ESA

Searsville Dam and Reservoir, also owned by Stanford University, was constructed in 1892 as an 1,840 AF capacity reservoir. Over the intervening years, sedimentation has greatly reduced the reservoir to less than 10 percent of its original capacity. Water stored at Searsville Reservoir provides one of several sources of non-potable water used at Stanford for landscape irrigation, agriculture, and fire protection. Due to drought, limited use of the impounded water has occurred in recent years (Stanford University, 2015). The assessed condition of the dam is satisfactory and downstream hazard rating is categorized as extremely high (DSOD, 2021).

Tsunami and Seiche Hazards

Tsunamis are ocean waves generated by vertical movement of the sea floor, normally associated with earthquakes or volcanic eruptions. With the exception of a small area in the northern part of the County encompassing Alviso and Guadalupe sloughs, most of Santa Clara County is outside of an identified tsunami inundation zone (DOC, 2019). None of the HEU opportunity sites or the SCP area are located in such a zone.

A seiche is a standing wave or an oscillation in an enclosed or partially enclosed body of water. The term originates from a Swiss French dialect meaning “to sway back and forth.” Sources of seiche activity include seismic events such as earthquakes or fault slips. The key requirement for the formation of a seiche is that a body of water be at least partially bounded, allowing for a standing wave to form. Felt Reservoir is the only reservoir within the SCP update area that could be subject to seiches, however this reservoir is not close enough to present a seiche risk to the SCP area. There are no reservoirs of adequate size in vicinity of the HEU sites to present seiche risks to the housing opportunity sites.

Sea Level Rise

The Santa Clara County Office of Sustainability has developed a tool for climate risk assessment, adaptation, and resilience planning, including high resolution mapping to identify geographic areas in the County that may be vulnerable to conditions of sea level rise by mid- or end of the 21st century. A review of current sea level rise maps indicates that the northern portion of the County adjacent to San Francisco Bay is at risk of storm surge and sea level rise (Santa Clara County, 2022). None of the HEU or SCP opportunity sites are close enough to San Francisco Bay to be within the mapped areas of vulnerability.

4.9.3 Regulatory Setting

Federal

Clean Water Act

The Federal Water Pollution Control Act, commonly referred to as the Clean Water Act (CWA) was enacted in 1948 and expanded in 1972 as a basic structure for regulating discharges of pollutants into the waters of the United States and regulating water quality standards for surface waters (USEPA, 2019). The U.S. Environmental Protection Agency (USEPA) is the federal agency responsible for water quality management pursuant to the CWA. The purpose of the

CWA is to protect and maintain the quality and integrity of the Nation's waters by requiring states to develop and implement state water plans and policies. The relevant sections of the CWA are summarized below.

CWA Section 402: National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program under Section 402 of the CWA is one of the primary mechanisms for controlling water pollution through the regulation of sources that discharge pollutants into waters of the United States. USEPA has delegated authority of issuing NPDES permits in California to the SWRQB, which has nine Regional Water Quality Control Boards (RWQCBs). The proposed project is located in the San Francisco Bay Region (Region 2). The San Francisco Bay RWQCB regulates water quality in the project area. The NPDES permit program is discussed in detail under *State Regulations*.

National Flood Insurance Program

FEMA determines flood elevations and floodplain boundaries based on studies by USACE. FEMA also distributes the Flood Insurance Rate Maps, or FIRMs, used in the National Flood Insurance Program (NFIP). These maps identify the locations of special flood hazard areas, including 1-percent-annual-chance (100-year) floodplains.

Code of Federal Regulations Title 44, Part 60, sets forth federal regulations that govern development in floodplains. Those regulations enable FEMA to require municipalities participating in the NFIP to adopt certain flood hazard reduction standards for construction and development in 100-year floodplains. These standards are described in the discussion of local regulations later in this section.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, also known as the Porter-Cologne Act (Division 7 of the California Water Code), provides the basis for water quality regulation in California. The Porter-Cologne Act defines water quality objectives as the limits or levels of water constituents that are established for reasonable protection of beneficial uses of surface, ground, and saline waters of the state. The State Water Resources Control Board (State Water Board) administers water rights, water pollution control, and water quality functions throughout California, while the San Francisco Bay Regional Water Quality Control Board conducts planning, permitting, and enforcement activities.

The Porter-Cologne Act requires each regional water board to establish a regional basin plan with objectives for achieving and maintaining water quality, while acknowledging that water quality may change to some degree without unreasonably affecting beneficial uses. Changes in water quality are allowed if the change is consistent with the state's maximum beneficial use, does not unreasonably affect present or anticipated beneficial uses, and does not result in water quality less than that prescribed in the basin plans.

Construction General Stormwater Permit

As described in Section 4.6, *Geology, Soils, and Paleontological Resources*, the Project would be subject to the NPDES *General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities*, referred to here as the "Construction General Permit" (State Water Board Order WQ 2022-0057-DWQ, NPDES No. CAS000002). The Construction General Permit requires development of a stormwater pollution prevention plan (SWPPP) that includes best management practices (BMPs) to prevent sediment and pollutants from entering a waterway, and that regulates stormwater discharges from construction or demolition activities, such as clearing and excavation; construction of buildings; and linear underground projects, including installation of water pipelines and other utility lines (SWRCB, 2022b).

Dewatering Permit

Construction activities such as excavation and trenching in areas with shallow groundwater would require dewatering, which would be subject to the Regional Water Board construction dewatering permit requirements. Dewatering operations are regulated under State requirements for stormwater pollution prevention and control. Discharge of non-stormwater from a trench or excavation that contains sediments or other pollutants to sanitary sewer storm drain systems, creek bed (even if dry), or receiving waters without treatment is prohibited. Discharge of uncontaminated groundwater from dewatering is a conditionally exempted discharge by the Regional Water Board. However, the removed water could potentially be contaminated with chemicals released from construction equipment or sediments from excavation. Therefore, disposal of dewatering discharge would require permits either from the Regional Water Board for discharge to surface creeks and groundwater or from local agencies for discharge to storm or sanitary sewers. The dewatering permit lists non-stormwater discharge controls specifically for dewatering operations. Discharge of water resulting from dewatering operations would require an NPDES Permit, or a waiver (exemption) from the Regional Water Board (applicable to the location of the site), which would establish discharge limitations for specific chemicals if they occur in the dewatering effluent.

State Water Resources Control Board Order WQ 2016-0068-DDW, Water Reclamation Requirements for Recycled Water Use

The State Water Board established general conditions for the use of recycled water, in part to offset demand for water resources. Only treated municipal wastewater for non-potable uses can be permitted, such as landscape or crop irrigation, dust control, and industrial/commercial cooling, consistent with the tertiary disinfection standards in Title 22 of the California Code of Regulations.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act of 2014, effective January 1, 2015, authorizes local agencies to manage groundwater in a sustainable manner and allows limited state intervention when necessary to protect groundwater resources.

The SGMA defined "sustainable groundwater management"; established a framework for local agencies to develop plans and implement strategies to sustainably manage groundwater resources; prioritized the basins with conditions of overdraft (ranked as high and medium priority); and set a 20-year timeline for implementation. Basins were initially prioritized under the SGMA by the California Department of Water Resources in 2014 under the California Statewide Groundwater Elevation Monitoring Program.

The HEU and SCP update would be located in the Santa Clara subbasin of the Santa Clara Valley groundwater basin, which has been identified by the Department of Water Resources as a high priority subbasin. Sustainability goals identified by Valley Water, the groundwater sustainability agency for the planning area are as follows (Valley Water 2021):

- Manage groundwater to ensure sustainable supplies and avoid land subsidence;
- Aggressively protect groundwater from the threat of contamination.

Department of Water Resources Division of Safety of Dams

California regulates dams to prevent failure, safeguard life, and protect property through the Department of Water Resources (DWR) Division of Safety of Dams (DSOD). There are more than 1,200 jurisdictional sized dams in California. DSOD ensures dam safety by reviewing alterations, overseeing dam construction, and performing annual safety inspections. The DSOD maintains maps of inundation zones for (hypothetical sunny day failure) of the dams under its jurisdiction. The mapped inundation zones for Felt Lake and Searsville Dam slightly overlap with the Stanford University opportunity sites as depicted on Figure 4.9-2.

Regional

Regional Water Quality Control Plans (Basin Plans)

The HEU would be partially located within the region under the jurisdiction of the San Francisco RWQCB, which establishes regulatory standards and objectives for water quality in the region in the *San Francisco Bay Basin (Region 2) Water Quality Control Plan*, commonly referred to as the Basin Plan (RWQCB 2019). Portions of the HEU (Morgan Hill and Gilroy) would be located within the Central Coast Region, subject to the regulatory standards of the *Water Quality Control Plan for the Central Coastal Basin* (Region 3). The Basin Plans identify existing and potential beneficial uses for surface water and groundwater and provide numerical and narrative water quality objectives designed to protect those uses. Designated beneficial uses for surface waters and groundwater in the study area are provided in **Table 4.9-4**.

TABLE 4.9-4
DESIGNATED BENEFICIAL USES FOR WATER BODIES IN THE STUDY AREA

Water Body	Designated Beneficial Uses
Guadalupe River	GWR, COLD, MIGR, RARE, SPWN, WARM, REC-1, REC-2
San Francisquito Creek	COLD, MIGR, RARE, SPWN, WARM, WILD, REC-1, REC-2
Matadero Creek	COLD, MIGR, RARE, SPWN, WARM, WILD, REC-1, REC-2
Deer Creek	COLD, RARE, WARM, WILD, REC-1, REC-2
Los Trancos Creek	COLD, MIGR, RARE, SPWN, WARM, WILD, REC-1, REC-2
Los Gatos Creek, lower	GWR, COLD, MIGR, RARE, SPWN, WARM, REC-1, REC-2
Flint Creek	WARM, WILD, REC-1, REC-2
Coyote Creek	GWR, COMM, MIGR, RARE, SPWN, WARM, WILD, REC-1, REC-2
Santa Clara Valley Groundwater Basin, San Mateo Plain subbasin	MUN, PROC, IND, AGR,
Santa Clara Valley Groundwater Basin, Santa Clara subbasin	MUN, PROC, IND, AGR
Santa Clara Valley Groundwater Basin, Llagas subbasin	MUN, PROC, IND, AGR

NOTES:

Existing and Potential Beneficial Uses Key:

AGR (Agricultural Supply); COLD (Cold Freshwater Habitat); COMM (Commercial and Sport Fishing); EST (Estuarine habitat); IND (Industrial Service Supply; MIGR (Fish Migration); MUN (Municipal and Domestic Supply); REC-1 (Water Contact Recreation); REC-2 (Noncontact Water Recreation); POW (Hydropower Generation); PROC (Industrial Process Supply); SHELL (Shellfish Harvesting); SPWN (Fish Spawning); RARE (Preservation of Rare and Endangered Species); WARM (Warm Freshwater Habitat); WILD (Wildlife Habitat).

SOURCES: SFB RWQCB, 2017; CC RWQCB 2019.

National Pollutant Discharge Elimination System Waste Discharge Regulations

Municipal Regional Stormwater Permit for the San Francisco Bay Region

Discharges of stormwater runoff from municipal separate storm sewer systems (MS4s) are regulated by the Municipal Regional Stormwater NPDES Permit, under Order No. R2-2022-0018; NPDES Permit No. CAS612008, issued by the San Francisco Bay Regional Water Quality Control Board, effective July 1, 2022. An MS4 is a stormwater conveyance system that is owned by a municipality (or other public entity) that discharges to waters of the United States; is not a combined sewer; and not part of a sewage treatment plant or publicly owned treatment works (RWQCB 2022).

Under CWA Section 402(p), stormwater permits are required for discharges from MS4s that serve populations of 100,000 or more. The Municipal Regional Permit (MRP) manages the Phase I Permit Program (serving municipalities of more than 100,000 people), the Phase II Permit Program (for municipalities of fewer than 100,000 people), and the Statewide Storm Water Permit for the California Department of Transportation.

The State Water Board and the individual water boards implement and enforce the MRP. Multiple municipalities, including Santa Clara County, along with the City of Santa Clara

(County) and Valley Water are co-permittees. These entities formed the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) to collectively address waste discharge requirements (WDRs) and manage stormwater runoff from storm drains and watercourses within their jurisdictions. Member agencies implement MRP Provision C.3 measures including pollution prevention, source control, post construction low impact development (LID) site design, stormwater treatment, monitoring, and outreach to reduce stormwater pollution (associated with new or redevelopment projects) and protect the water quality and beneficial uses of San Francisco Bay and Santa Clara County creeks and rivers (SCVURPPP 2021). Pollutants of concern in the Guadalupe River watershed (where the Project would be located) include mercury, PCBs, and trash, among others.

Local

County of Santa Clara

Nonpoint Source Pollution Ordinance

Division B11.5 of the County of Santa Clara Ordinance Code contains requirements for nonpoint source pollution. The intent of the code division is to protect and enhance the water quality of water courses in Santa Clara County. Pursuant to the Code, the requirements in the division shall be implemented in a manner consistent with the federally mandated nonpoint source pollution measures and the NPDES Municipal Storm Water Discharge Phase I and Phase II permits issued to the County by the San Francisco Bay and Central Coast RWQCBs, respectively.

Chapter IV of Division B11.5 contains stormwater pollution prevention requirements for construction, including the requirement to implement and maintain best management practices (BMPs) consistent with the California Stormwater Quality Association (CASQA) Best Management Practices Handbook. Construction sites with a County permit must submit either a Stormwater Pollution Prevention Plan or erosion/pollution control plan showing BMPs. The code also contains requirements for BMP maintenance, as well as County site inspection, and enforcement.

Requirements for post construction and for new development or redevelopment (outlined Chapter V of Division B11.5) include provisions for demonstrated compliance with permanent stormwater treatment measures, source control, hydromodification management measures, low impact development[2] (LID) treatment. Operation and maintenance agreements for stormwater treatment and management are subject to enforcement and must be consistent with the most recent adopted version of the County NPDES Permit (County of Santa Clara, 2022).

Standards of Construction in Special Flood Hazard Areas

Section C12-816 of the County of Santa Clara Ordinance Code contains standards of construction for all flood hazard areas, including the following elevation and flood proofing standards required

[2] Low Impact Development or LID treatment, as defined in the Santa Clara County Code, "employs principals such as preserving and recreating natural landscape features and minimizing imperviousness to create functional and appealing site drainage that treats stormwater as a resource rather than a waste product."

for residential and nonresidential construction in unincorporated Santa Clara County (Santa Clara County, 2022).

> (3) *Elevation and floodproofing.*
>
> a. *Residential construction.* All new construction or substantial improvements of residential structures shall have the lowest floor, including basement:
>
> 1. In AE, AH, A1—30 Zones, elevated two feet above the base flood elevation.
> 2. In an AO zone, elevated above the highest adjacent grade to a height two feet above the depth number specified in feet on the FIRM, or elevated at least four feet above the highest adjacent grade if no depth number is specified.
> 3. In an A zone, without BFE's specified on the FIRM [unnumbered A zone], elevated two feet above the base flood elevation; as determined under Section C12-813(3).
>
> Upon the completion of the structure, the elevation of the lowest floor, including basement, shall be certified by a registered civil engineer or licensed land surveyor, and verified by the community building inspector to be properly elevated. Such certification and verification shall be provided to the Floodplain Administrator
>
> b. *Nonresidential construction.* All new construction or substantial improvements of nonresidential structures shall either be elevated to conform with Section C12-816(3)a. or:
>
> 1. Be floodproofed, together with attendant utility and sanitary facilities, below the elevation recommended under Section C12-816(3)a., so that the structure is watertight with walls substantially impermeable to the passage of water;
> 2. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and 3. Be certified by a registered civil engineer or architect that the standards of Section C12-816(3)b.1. and Section C12-816(3)b.2. are satisfied. Such certification shall be provided to the Floodplain Administrator.

Santa Clara County General Plan

The Santa Clara County General Plan is a comprehensive long-range general plan for the physical development of the County (County of Santa Clara, 1994). The General Plan contains the current County of Santa Clara Housing Element, which was adopted in 2015. The various elements within the General Plan include goals and policies for the physical development of the County. General Plan strategies and policies related to water supply, water quality and watershed management and relevant to implementation of the HEU are listed below.

Water Supply Resources

Strategy #1: Conserve and Reclaim Water

> ***Policy*: *C-RC 5***: An adequate, high quality water supply for Santa Clara County should be considered essential to the needs of households, business and industry.
>
> ***Policy C-RC 6 A:*** comprehensive strategy for meeting long term projected demand for water should at a minimum include the following:

a. Continued conservation and increased reclamation;

b. Securing additional sources as supplemental supply;

c. System and local storage capacity improvements; and

d. Drought contingency planning and groundwater basin management programs.

Policy C-RC 7: Countywide land use and growth management planning should be coordinated with overall water supply planning by the SCVWD in order to maximize dependability of long-term water supply resources.

Policy C-RC 8: Environmental impacts of all state and local water supply planning and decision-making should be taken into full consideration.

Policy C-RC 9: Conservation should continue to be considered an integral component of local water "supply" resources, effectively minimizing the amount of supplemental supplies which must be obtained from other sources.

Policy C-RC 10: Educational measures should be continued/increased in order inform the public of the need for conservation over the long term, rather than as a temporary response to periodic drought.

Policy C-RC 11: Domestic conservation should be encouraged throughout Santa Clara County by a variety of means, including reduced flow devices, drought-resistant landscaping, and elimination of wasteful practices.

Policy C-RC 12: More efficient use of water for agricultural irrigation and industrial processes should be promoted through improved technology and practices.

Policy C-RC 13: Use of reclaimed wastewater for landscaping and other uses, including groundwater recharge if adequately treated, should be encouraged, and developed to the maximum extent possible.

Strategy #2: Obtain Additional Imported Water Sources

Policy C-RC 14**:** Reforms of the state-wide system of water allocation and distribution should be encouraged which facilitate the ability of urban area water suppliers to purchase needed supplies through market mechanisms.

Strategy #3: Make system and Local Storage Capacity Improvements

Policy C-RC 15**:** Potential for new and/or expanded local reservoirs should be thoroughly examined as a part of any long-term strategy for assuring adequate water supply, taking into full account environmental and financial feasibility.

Policy C-RC 16: Seismic safety considerations for new and existing reservoirs should be addressed in order to ensure water supply and public safety in the event of earthquake.

Strategy #4: Maintain Drought Contingency and Groundwater Basin Management Plans

Water Quality and Watershed Management

Strategy #1: Reduce Non-Point Source Pollution

Policy C-RC 18**:** Water quality countywide should be maintained and improved where necessary to ensure the safety of water supply resources for the population and the preservation of important water environments and habitat areas.

***Policy C-RC 19*:** The strategies for maintaining and improving water quality on a countywide basis, in addition to ongoing point source regulation, should include:

a. effective non-point source pollution control;

b. restoration of wetlands, riparian areas, and other habitats which serve to improve Bay water quality; and

c. comprehensive Watershed Management Plans and "best management practices" (BMPs).

***Policy C-RC 20*:** Adequate safeguards for water resources and habitats should be developed and enforced to avoid or minimize water pollution of various kinds, including:

a. erosion and sedimentation;

b. organic matter and wastes;

c. pesticides and herbicides;

d. effluent from inadequately functioning septic systems;

e. effluent from municipal wastewater treatment plants;

f. chemicals used in industrial and commercial activities and processes;

g. industrial wastewater discharges;

h. hazardous wastes; and

i. non-point source pollution.

Strategy #2: Restore Wetlands, Riparian Areas, and Other Habitats that Improve Bay Water Quality

***Policy C-RC 25*:** Wetlands restoration for the purpose of enhancing municipal wastewater treatment processes, improving habitat and passive recreational opportunities should be encouraged and developed where cost-effective and practical.

Strategy #3: Prepare and implement Comprehensive Watershed Management Plans

Policy C-RC 26: Comprehensive watershed management plans should be developed and implemented through intergovernmental coordination. Water supply watersheds should receive special consideration and additional protection.

Health and Safety

Strategy #3 Design, Locate and Regulate Development to Avoid or Withstand Hazards

Policy C-HS 33 Development in areas of natural hazards should be designed, located, and otherwise regulated to reduce associated risks, by regulating the type, density, and placement of development where it will not:

a. be directly jeopardized by hazards;

b. increase hazard potential; and

c. increase risks to neighboring properties.

Strategy #4 Reduce the Magnitude of the Hazard, If Feasible.

Policy C-HS 33: Flood control measures should be considered part of an overall community improvement program and advance the following goals, in addition to flood control:

a. resource conservation;

b. preservation of riparian vegetation and habitat;

c. recreation; and

d. scenic preservation of the county's streams and creeks.

Stanford University Community Plan

The current SCP was adopted in 2000 (County of Santa Clara, 2000). The primary purpose of the SCP is to guide future use and development of Stanford lands in a manner that incorporates key County General Plan principles of compact urban development, open space preservation, and resource conservation. The SCP was adopted as an amendment of the General Plan in the manner set forth by California Government Code Section 65350 et seq. All revisions to the SCP must also be made according to the provisions of State law for adopting and amending general plans. Community strategies and policies related to hydrology and water quality and relevant to implementation of the proposed project are listed below.

Health and Safety

Flood Hazards

Strategy 5: Design, Locate and Regulate Development to Withstand Hazards.

Policy SCP-HS 9: Require Stanford to design development and infrastructure improvements including storm drainage detention facilities, to accommodate runoff from future development so as to achieve no increase in peak flows.

Policy SCP-HS 10: Stanford shall maintain and enhance surface and subsurface drainage systems.

Policy SCP-HS 11: Stanford shall control erosion from future development in order to limit sediment from reaching the storm drain system and creeks, to avoid hydrological impact.

Resource Conservation

Water Quality and Watershed Management

Strategy 4: Reduce Non-Point Source Pollution

Policy SCP-RC 12**:** Continue the use of appropriate best management practices to reduce non-point source pollution in agricultural, recreational, and academic areas and for construction activities, and include these practices as terms and conditions of leases of Stanford lands.

Policy SCP-RC 13: In planning for new development and redevelopment, utilize site, building, and landscape design features which serve to reduce non-point source pollution.

Policy SCP-RC 14: Promote and participate in interjurisdictional efforts to identify and reduce non-point source pollution and to develop economically viable best management practices for improving water quality.

Policy SCP-RC15: Emphasize groundwater recharge through natural percolation and filtration over increased runoff to storm drains and creeks.

Strategy 5: Enhance and Restore Wetlands, Riparian Areas and other Habitats that Improve Watershed Quality

***Policy SCP*-RC 16:** Assist Stanford in identifying and implementing agricultural and other land management practices that promote native species and that contribute to erosion control.

Policy SCP-RC 17: Avoid development in riparian areas and wetlands.

Policy SCP-RC 18: Maintain native plant communities south of Junipero Serra Boulevard and in Campus Open Space areas such as oak woodlands, chaparral, and riparian trees and shrubs that serve to prevent soil erosion and creek bank collapse.

Strategy 6: Prepare and Implement Comprehensive Watershed Management Plans

Policy SCP-RC-21: Support and encourage Stanford's participation in regional watershed management planning and implementation for watersheds including Stanford lands.

4.9.4 Environmental Impacts and Mitigation Measures

Significance Thresholds

The thresholds used to determine the significance of impacts related to hydrology and water quality are based on Appendix G of the *CEQA Guidelines*. Implementation of the proposed project could have a significant impact on hydrology and water quality if it would:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    i. result in substantial erosion or siltation on- or off-site,
    ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite,
    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.

Issues Not Discussed in Impacts

There is no risk for release of pollutants associated with tsunamis or other coastal hazards because the project's development sites are not coastal, nor are they located within a tsunami inundation zone. As discussed in the environmental setting, a review of Santa Clara County maps indicates that none of the proposed HEU or SCP housing opportunity sites are close enough to San Francisco Bay to be vulnerable to conditions of sea level rise. Therefore, tsunami and sea level rise hazards are not discussed in this impact section.

Methodology and Assumptions

Impacts on hydrology and water quality are evaluated using the CEQA Appendix G criteria listed above. Impacts are evaluated based on information included in the Santa Clara County General Plan, Stanford Community Plan, Water Quality Control Plans for the San Francisco Bay Basin, the Santa Clara Valley Urban Pollution Prevention Program stormwater guidance, and the applicable municipal codes pertaining to stormwater and development standards near creeks and in floodways, as identified in the local regulatory setting of this section.

Development projects that could result from the HEU or SCP update implementation would be regulated by the various laws, regulations, and policies summarized above in Section 4.9.3, *Regulatory Setting*. Compliance with applicable federal, state, and local laws and regulations is assumed in this analysis and local and state agencies would be expected to continue to enforce applicable requirements to the extent that they do so now. Note that compliance with many of the regulations is a condition of permit approval.

After considering the implementation of the project as described in Chapter 3, *Project Description*, and assumed compliance with the required regulatory requirements, the environmental analysis below identifies if the defined significance thresholds would be exceeded and, therefore, a significant impact would occur. For those impacts considered to be significant, mitigation measures are proposed to reduce the identified impacts.

Impacts and Mitigation Measures

Impacts

Impact HYD-1: Implementation of the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. (*Less than Significant Impact, with Mitigation*)

Development projects facilitated by the proposed project would have a significant impact if such development would directly or indirectly violate water quality standards or waste discharge requirements (WDRs) pursuant to NPDES Permit requirements (described under Regional

Regulatory Setting in Section 4.9.3) in effect in Santa Clara County. A violation could occur if the development would substantially increase pollutant load levels, either through the direct introduction of contaminants or indirectly through stormwater pollution, which could compromise beneficial uses of surface waters or groundwaters.

Housing Element Update – Construction

Construction of the housing units that could result from the HEU's implementation would involve ground disturbing activities such as trenching and excavation, removal of trees and other vegetation, and grading. As soil disturbing activities occur across a landscape, the potential for erosion and sedimentation increases. Disturbed soils are typically more susceptible to erosion from rain and wind, which in the absence of preventative measures, can lead to mobilization of sediments and silt through runoff. Erosion can escalate under storm events where slopes are steep.

To accomplish such construction, heavy equipment such as bulldozers, graders, earth movers, heavy trucks, trenching equipment and other machinery. Such machinery could contribute pollutants to stormwater runoff in the form of fuels, oil, lubricants, antifreeze, or hydraulic fluid. Sediment, silt, or construction debris mobilized during construction could also violate water quality standards or result in an unauthorized discharge to receiving waters, such as San Francisquito Creek, Flint Creek, Coyote Creek, or tributaries. Degradation of water quality could affect beneficial uses of these water bodies (see Table 4.9-2) which (in the absence of runoff controls) could result in exceedances of water quality standards.

However, as described in the regulatory setting, construction projects that disturb one or more acres of ground disturbance, or less than one acre but would be part of a larger plan of development or sale, would be required to obtain coverage under the NPDES Construction General Permit. Preparation of a SWPPP, along with implementation and maintenance of BMPs during construction, is required for compliance with the NDPES Construction General Permit. In addition to BMPs for erosion control, a SWPPP would include BMPs to prevent other contaminants (e.g., solvents, concrete, paint, petroleum products) from unauthorized discharge to downstream waters or groundwater.

With adherence to these standards and NPDES Construction General Permit requirements along with implementation of measures described in the SWPPP, development under the HEU would not generate water quality violations during construction and the impact would be **less than significant**.

Stanford Community Plan Update – Construction

Lands considered under the SCP update would be subject to the same regulatory requirements as described above for the HEU. In addition to those considerations, if construction activities were to damage or destroy existing wells within or near the housing opportunity sites and potential future school location, contamination of groundwater could result. Stanford has historically conducted well surveys for the lands under their jurisdiction. Based on the long history at the Stanford Campus, there may be inactive wells on campus, which, if physically compromised during construction or not properly abandoned (consistent with Valley Water requirements) could

act as a vertical conduit for contamination of groundwater. This effect would be considered a potentially significant impact.

To reduce this impact, the following mitigation measure is prescribed.

> **Mitigation Measure 4.9-1, Stanford Well Review**: Prior to issuance of a demolition or building permit, Stanford shall review its historic wells survey to determine the potential for encountering any groundwater wells within the area of proposed improvements and confirm that no historic wells not properly closed are located at the location of the proposed development. If discovered, and the well is no longer part of operations and was not abandoned in accordance with applicable requirements, Stanford shall fulfill the applicable well abandonment/destruction permit requirements. Stanford shall contact the applicable regulatory agency to locate existing inactive wells and confirm adherence to well abandonment/ destruction requirements.
>
> **Significance after Mitigation:** The recommended measures would ensure that development design proposed under the Community Plan Update considers site-specific locations for wells within the vicinity of such development would not be compromised and result in vertical contamination of groundwater resources. With implementation of these measures, potential construction-related impacts on groundwater quality would be reduced to **less-than-significant** levels.

HEU and Stanford Community Plan Update – Operation

Once constructed, development proposed under the proposed project would be subject to municipal regional permit stormwater requirements (Order No. R2-2022-0018; NPDES Permit No. CAS612008) which regulate stormwater discharges in lands under the water quality jurisdiction of the San Francisco Bay Region in Santa Clara County.

As described in the regulatory setting, development considered under the project Update would also be subject to regulatory requirements in effect in Santa Clara County governing nonpoint source pollution. Post construction requirements for new development or redevelopment (outlined Chapter V of the County Code) include provisions for demonstrated compliance with permanent stormwater treatment measures, source control, hydromodification management measures, low impact development design measures, which would effectively limit contamination of surface and groundwater. Development in the northern portion of the county would be designed in a manner consistent with the guidelines of the Santa Clara Valley Urban Pollution Prevention Program. Adherence with these guidelines and regulatory requirements and implementation, maintenance, and monitoring of these measures would limit operational impacts under this criterion to **less than significant** levels.

> **Mitigation Measures:** None required.

Impact HYD-2: Implementation of the proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. (*Less than Significant Impact*)

The consideration of groundwater resources under this criterion includes both the anticipated project demand for groundwater resources and its alteration of the recharge capability of the basins. If, for example, development made possible by implementation of the proposed project were to require substantial quantities of groundwater during construction or operation, or if the development were to include placement of impervious surfaces to the extent that there would be an appreciable reduction in the overall recharge area for the groundwater basin, such activities could be considered potentially significant.

As discussed in the Environmental Setting, the groundwater recharge areas in the Santa Clara Plain are generally along the perimeter of the subbasin, with confined areas within the flatland portion of Santa Clara Valley. Placement of impervious surfaces within groundwater recharge areas would decrease the groundwater recharge capability of the subbasins. This potential impact would be avoided by the required hydromodification management measures and LID treatment, consistent with SCVUPPP guidance, which would include pervious pavement and treat stormwater as a resource for groundwater recharge.

A significant impact would occur if the project would result in a net reduction in the subsurface aquifer volume or lower the groundwater table. As noted, that portion of Santa Clara County where the HEU sites and the SCP area are located is in the Santa Clara Valley groundwater basin, identified by DWR as a high priority basin under SGMA. As discussed in the setting section, the Santa Clara basin, although a high priority basin, is not currently in an overdraft condition.

A Water Supply Assessment (WSA) was prepared for the proposed project by West Yost. It is attached to this EIR as **Appendix B**. The WSA evaluated the water supply available to the Stanford Campus via its sources of supply, and also incorporated the results of a separate WSA prepared by San José Water for its water supplies. Collectively, the WSA evaluates the water supply for both the housing opportunity sites in San José and also the Stanford campus housing opportunity sites and the potential future school location on the Stanford campus.

With respect to water supply available to the HEU opportunity sites in San José, potable water supply to the sites would be provided by San José Water using a mix of imported surface water, groundwater, and local surface water. Groundwater would make up only a portion of the project's water supply, and the proportion of supply attributed to groundwater would vary depending on San José Water's operational parameters. The WSA prepared for the project by San José Water noted that under extended supply pressures, groundwater basins can enter overdraft conditions, which can have a series of consequences including land subsidence. The threat of overdraft conditions was witnessed in the recent 2012-2016 drought when groundwater levels declined. However, groundwater levels in the Santa Clara Subbasin quickly recovered after the drought due to Valley Water's proactive response. In general, the WSA determined that sufficient water supplies are available to serve the proposed project as well as other demands placed on the water supply by additional growth in the region. Further, San José Water can implement both voluntary

and mandatory conservation measures in the event of water shortage. Based upon these considerations, the development of the housing opportunity sites in San José would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge.

Water supply to the Stanford campus and the development of the HEU sites there and the potential future school location would be provided via purchased water, supplemented by groundwater for non-potable uses. The non-potable distribution system is referred to as the Lake Water System. Groundwater pumped from five Stanford-owned and operated wells over the Santa Clara Valley Groundwater Subbasin is currently used only for non-potable uses such as landscape irrigation and is relied upon most during dry years, although groundwater could be used to supplement potable water supply from SFPUC if needed. Groundwater is also pumped into Stanford's Felt Reservoir for rediversion into the Lake Water System.

Groundwater is currently used only for non-potable uses, and Table 4.9-3 earlier in this section noted that the amount of groundwater pumped during the most recent drought varied between 456 and 690 AFY over a three-year period. More recently, no groundwater has been utilized. The WSA prepared for the project by West Yost determined that the projected water demand for the project on the Stanford campus would be 257 AFY, all of which would be supplied via purchased water from SFPUC. The WSA noted that during a period of shortage, groundwater could be used to supplement the potable water supply. The WSA determined that Stanford could withdraw up to 1,700 AFY from its wells on a continuous basis without impacting water quality in the aquifer or causing unacceptable impacts such as excessive drawdown or land subsidence. A 2014 groundwater study also indicated that during drought periods, withdrawals of up to 5,000 AFY may be made for a brief one-to-two-year period by Stanford or others in the basin, if followed by a low-use period during which the aquifer could recover.

Based on the above, water for the project would be supplied by purchased SFPUC water but could be supplemented by groundwater during a period of prolonged shortage. However, the amount of groundwater available in comparison to the project's water requirements is substantial. Water could be pumped at comparatively high volumes to supply the needs of the project and other campus uses without causing excessive drawdown of the aquifer. Accordingly, the development of the housing opportunity sites and the potential future school site on the Stanford campus would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge.

Based upon the above considerations for both the San José housing opportunity sites and the housing opportunity sites and potential future school location on the Stanford campus, the project's impact to groundwater supplies would be **less than significant**.

Mitigation Measures: None required.

Impact HYD-3: Implementation of the proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would : i) result in substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; 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. (*Less than Significant Impact*)

HEU and Stanford Community Plan Update

Construction and Operation

As described under Impact HYD-1, development proposed under the project would be subject to Construction General Permit requirements (including implementation of a SWPPP) and County requirements that would include the implementation and maintenance of BMPs to control erosion and reduce runoff that would otherwise be transported to the stormwater collection systems. Through the reduction of runoff, these measures would effectively reduce erosion and siltation of surface waters.

No alteration of surface waters is proposed under the project; however, development would include placement of impervious surfaces and would be considered regulated projects, subject to hydromodification management and LID design measures. As described in Section 4.16, *Utilities*, the stormwater conveyance system at Stanford University consists of a series of subsurface piping and drainage ditches. The northwestern and southeast portions of campus are within the San Francisquito Creek and Matadero Creek watersheds, respectively. Runoff generated within the San Francisquito Creek watershed is conveyed through large pipelines to San Francisquito Creek, just south of El Camino Real; runoff generated within the Matadero Creek watershed is conveyed to a large Caltrans storm drain along El Camino Real, which then conveys and discharges storm water to Matadero Creek.

Title B, Chapter IV of the County of Santa Clara Ordinance Code contains established measures to prevent and reduce stormwater pollution such as development runoff requirements including performance standards to address construction and post-construction impacts to water quality. Consistent with Water Quality and Watershed Management County General Plan Strategy 1, and Stanford Community Plan Strategy 4 related to non-point source pollution, these standards are needed to minimize pollutants in storm water runoff and protect watercourses.

Santa Clara County is a permittee of the MRP. A stormwater management plan is required as part of the review process for development in the County which creates or replaces 10,000 square feet of impervious surface area. Compliance with provision C.3 of the MRP must be demonstrated at the time of application for development including rezoning, tentative map, conditional use permit, variance, site development review, design review, development agreement or building permit (County of Santa Clara, 2022). Source control of pollution, site design, and stormwater treatment measures are required for new and redevelopment. In addition to providing treatment and source control, projects recreating or replacing an acre or more of impervious area (unless exempted) must also provide flow controls (or hydromodification management measures) so that post project runoff does not exceed estimated pre-project rates and durations. Regulated projects for which

building or grading permits are issued must include Low Impact Development (LID) design measures (such as pervious paving or bioretention areas) for stormwater capture and pretreatment.

Based upon the assumed compliance with each of the considerations outlined above, the impact of the proposed project's implementation on stormwater runoff, erosion, storm drainage, and flooding would be **less than significant**.

Mitigation Measures: None required.

Impact HYD-4: In a flood hazard, seiche, or dam breach inundation zone, implementation of the proposed project would not risk release of pollutants due to inundation. ***(Less than Significant Impact)***

HEU and Stanford Community Plan Update

Inundation across portions of the development sites associated with the project could occur in the event of localized flooding (Figures 4.9-1a through 4.9-1d) or regionally in the event of dam failure (Figure 4.9-2) or seiche. As depicted in Figures 4.9-1a through 4.9-1d, several of the project sites are located within special flood hazard areas. The western portion of the Alum Rock site (as an example) is located in the 100-year (1 percent chance) flood zone (see Figure 4.9-1c). Development on this site would be subject to Santa Clara County requirements for development within special flood hazard areas, as described in the regulatory setting. For residential development, elevation and flood proofing would be required consistent with Santa Clara County requirements, which would reduce flooding impacts to the site and surroundings. Similarly, the SCP area would be subject to County controls applicable to development within flood zones, which would reduce potential impacts associated with release of contaminants.

As described in Section 4.8, *Hazards and Hazardous Materials*, construction and land uses (i.e., residences) allowed by the HEU or SCP are anticipated to introduce urban contaminants (such as heavy metals, oils, grease, pesticide residues, etc.) to the areas. There are no potential project development sites that would be affected by or contribute contaminants in the event of dam failure. However, as depicted in Figure 4.9-2, the inundation zone for a hypothetical sunny day failure of the dams at Felt Lake and Searsville Reservoir could impact the SCP update area. Groundwater could also be impacted by such an event. However, in consideration of the noted positive structural condition assessments for the two dams whose inundation zones are mapped to cross the SCP update area, it is highly unlikely that the structures present risks to the project. Furthermore, extensive flooding associated with a hypothetical sunny day failure of Searsville Dam is also highly unlikely to occur given that the water capacity of the reservoir has been reduced to 10 percent of its original capacity due to drought and sedimentation. Therefore, due to the low level of risk for dam failure inundation, impacts associated with release of contaminants would be **less than significant**.

Mitigation Measures: None required.

Impact HYD-5: Implementation of the proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. ***(Less than Significant Impact)***

HEU and Stanford Community Plan Update

Construction

As discussed under Impact HYD-1, the proposed project has the potential to increase contamination of local surface waters that are identified as impaired due to existing contamination (Table 4.9-1). However, as also noted in this section, there are numerous regulatory controls and requirements under the construction general permit in effect to limit unauthorized discharges. The County requires that grading and drainage (under proposed development) adhere to specific standards for source control and pretreatment to reduce runoff and remove contaminants from the County's storm drain system. With implementation and enforcement of such regulatory controls, the project's development would not conflict or obstruct implementation of water quality requirements for the effective basin plans. Project impacts under this criterion would be **less than significant**.

As also described in Impact HYD-1, mitigation is recommended to reduce the potential for vertical contamination of wells on the Stanford Campus, which could otherwise be compromised through construction considered under the project. With implementation of mitigation measure HYD-1, the project would not conflict with the Basin Plan. Impacts would be **less than significant with mitigation**.

Operation

As noted in this section, Valley Water provides water from other watersheds and groundwater basins to the municipalities and other users in Santa Clara County, including to San José Water. This section, therefore, considers if the use of this water would conflict with sustainable groundwater management. As discussed under Impact HYD-3, the project's impact to groundwater supplies would be less than significant. Neither San José Water nor Stanford University is reliant on groundwater for its primary water supply. The groundwater basin is currently in a stable condition, due to the various groundwater management measures conducted by Valley Water and conservation conducted by municipal water users. Further, development of projects exceeding 500 units would be subject to State requirements, such that a project specific WSA would need to be submitted to ensure that adequate water supplies are available during normal, dry, and multiple dry years to support future residents. Based upon these considerations, the project's operation would not conflict with sustainable groundwater management. Impacts would therefore be **less than significant**.

Mitigation Measures: None required.

Cumulative Impacts

This section presents an analysis of the cumulative effects of the proposed project in combination with other past, present, and reasonably foreseeable future projects that could cause cumulatively

considerable impacts. Significant cumulative impacts related to hydrology and water quality could occur if the incremental impacts of the project combined with the incremental impacts of one or more of the cumulative projects or cumulative development projections included in the project description and described in Section 4.0.3, *Cumulative Impacts*.

The geographic area affected by the project and its potential to contribute to cumulative impacts varies based on the environmental resource under consideration. The geographic scope of analysis for cumulative hydrology and water quality impacts is limited to the potential development sites in Santa Clara County and the list of residential projects in Section 4.0.3 of this EIR, *Cumulative Impacts*. The timeframe during which the project could contribute to cumulative hydrology and water quality impacts includes the construction and operational phases. For the development sites, the operations phase is assumed to be permanent.

Impact HYD-6: Implementation of the proposed project, in combination with past, present, and reasonably foreseeable future development, would result in a less than significant cumulative impact with respect to hydrology and water quality. ***(Less than Significant Impact)***

The Santa Clara basin is a high priority groundwater basin, though not currently in condition of overdraft. As discussed under Impact HYD-2, Valley Water (the main water supplier in the County) does not rely on groundwater as its primary water supply. Although the proposed project and other recently constructed and reasonably foreseeable future projects would place demands on potable water, these demands would be evaluated on a case-by case basis, along with regional water budgeting in the UWMPs in effect for each development site and would be subject to changes invoked under any adopted water shortage contingency plans during conditions of drought. Even when considered in the cumulative context, the proposed project would not result in cumulatively significant impacts on groundwater levels.

As described in Section 4.0.3 (Table 4.0-1), there are numerous other residential "pipeline" developments recently constructed, proposed to be constructed, or under construction in the vicinity of the project's development sites, as well as additional residential and nonresidential growth anticipated through the year 2040. Like the future development projects that could be facilitated by the proposed project, such development or redevelopment is subject to regional and local stormwater management guidelines and requirements. Projects involving the creation or replacement of 10,000 square feet of impervious surface area would be subject to hydromodification management controls and LID design standards and would be required to demonstrate in their stormwater control management plans that run off from disturbed sites is adequately controlled. Therefore, when considered in the cumulative context, hydrology and water quality impacts would be controlled through existing regulatory requirements and would not be cumulatively significant. Cumulative impacts would be less than significant.

Mitigation Measures: None required.

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