

## 4.8 HYDROLOGY AND WATER QUALITY

### 4.8.1 ENVIRONMENTAL SETTING

#### SURFACE WATER RESOURCES

##### Watersheds and Drainage

The Project region has a mild Mediterranean climate, with hot dry summers and cool wet winters. Most of the precipitation falls during the winter months, from November to April. The Project region is within the Suisun Basin Hydrologic Unit in the San Francisco Bay Drainage Province (San Francisco Bay Regional Water Quality Control Board [RWQCB] 2023). The Suisun Basin Hydrologic Unit drains approximately 157 square miles. Pennsylvania Ave Creek flows south through the Project Site to Peytonia Slough and then into Suisun Marsh. Ledgewood Creek flows south along the northwestern Project boundary to Cordelia Road; south of Cordelia Road, Ledgewood Creek turns and flows southeast through the Project Site to Peytonia Slough (and thence into Suisun Marsh). Several other smaller unnamed drainage channels bisect the Project Site. Peytonia Slough discharges into Suisun Slough. Suisun Slough and Suisun Marsh drain into Grizzly Bay, then into Suisun Bay, and then into the Carquinez Strait.

On a regional level, the proposed Development Areas and off-site improvement areas west of Pennsylvania Avenue (see areas Planning Area 1 and Planning Area 2 in Exhibit 4.8-1) are within the Laurel Creek-Frontal Suisun Bay Watershed (Hydrologic Unit Code [HUC] 12), while the remainder of the Project Site and the other off-site improvement areas are within the Suisun Bay Estuaries Watershed (HUC 12). On a local level, the Project Site is within the Pennsylvania Avenue Creek subwatershed, which encompasses approximately 2,910 acres, as measured at the Cordelia Road Bridge. Approximately 285 acres of the watershed includes surface drainage from a portion of the developed City of Fairfield on the east side of Pennsylvania Avenue north of SR 12. From the west side of Pennsylvania Avenue and north of Interstate 80, approximately 2,625 acres of this watershed drain through an improved drainage channel (Morton and Pitalo 2021).

Morton and Pitalo, Inc. was retained to prepare a *Draft Drainage Master Plan* (Drainage Plan) for the proposed Development Area at the Project Site (Morton and Pitalo 2021) (Appendix D). For purposes of the Drainage Plan, the Development Area was split into three subareas: Planning Areas 1, 2, and 3. As shown in Exhibit 4.8-1, Planning Area 1 (approximately 69 acres) currently drains to the southwest to an existing 30-inch culvert under Pennsylvania Avenue labelled as POI-1. Planning Area 1 also receives flows from the off-site approximately 35.6-acre subshed to the north, through seven 24-inch culverts underneath SR 12 (indicated by the dashed lines in Exhibit 4.8-1), which discharge into a drainage ditch on the south side of SR 12. Drainage flows eastward in this ditch to a southward flowing ditch along the west side of Pennsylvania Avenue (labeled as “Reach 1”), to the 30-inch culvert noted above. This 30-inch culvert discharges to an open drainage channel (labeled as “Reach 2”) that flows eastward to Pennsylvania Avenue Creek.

Existing stormwater flows from Planning Area 3 (approximately 10 acres) also flow to the southeast into the unnamed drainage channel described above (“Reach 2”), and thence eastward into Pennsylvania Avenue Creek (see POI-3 on Exhibit 4.8-1).

Existing flows from area Planning Area 2 (approximately 13 acres) drain from northwest to southeast to an existing 18-inch culvert underneath Cordelia Road (see POI-2 on Exhibit 4.8-1; the arrow indicates the direction

of stormwater flow southeast onto the southern portion of the Project Site). Also, there is an existing 30-inch culvert that directs stormwater from a small area in Planning Area 1 underneath the California Northern railroad tracks and onto Planning Area 2 into a southwest-oriented drainage channel. However, this channel on both the north and south sides of the California Northern Railroad tracks appears to have no outlet to LedgeWood Creek, and therefore may function as a retention basin (infiltration only).

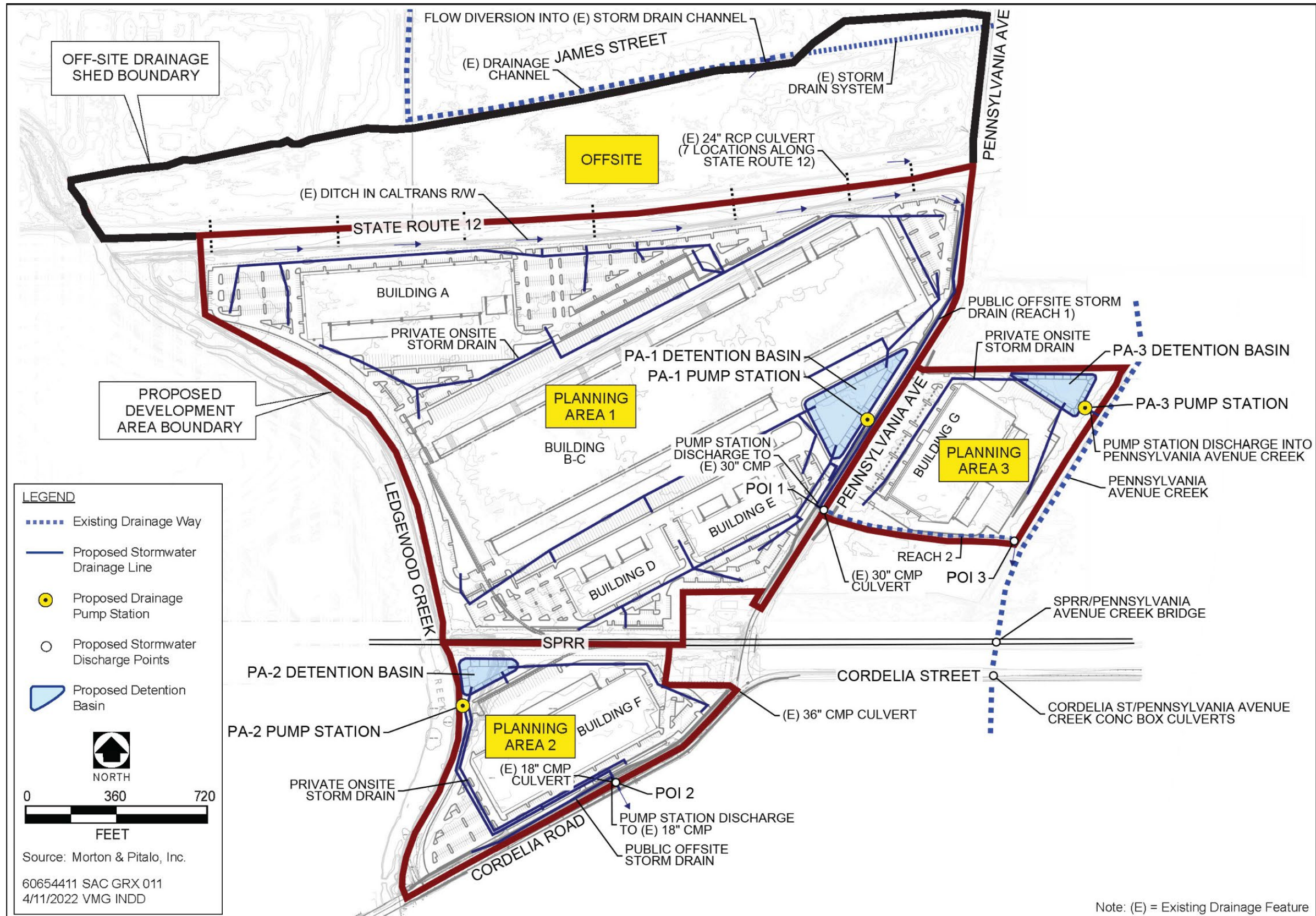
Finally, located near the center of the Project parcels, but not within the proposed Development Area, are two commercial businesses operating near the intersection of Pennsylvania Avenue and the California Northern Railroad: (1) Kings of Auto/U-Haul, located at 1001 S. Pennsylvania Avenue, consists of an auto repair shop and a U-Haul rental shop, and (2) Nor Cal Concrete, a concrete contractor, which is immediately south of Kings of Auto. Drainage from these businesses flows underground through a 36-inch culvert which discharges into a drainage channel south of the intersection of Cordelia Road and Pennsylvania Avenue (Exhibit 4.8-1; Morton and Pitalo 2021). This unnamed drainage channel flows southeast through the proposed Managed Open Space Area of the Project Site and discharges into the Pennsylvania Ave Creek, which discharges into Peytonia Slough.

### **Surface Water Quality**

Section 303(d) of the federal Clean Water Act (CWA) requires each state to periodically prepare a list of all surface waters in the state for which beneficial uses of the water (e.g., drinking, recreation, aquatic habitat, and agricultural use) are impaired by pollutants. Beneficial uses for waters in the Project region are contained in the *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan), updated and adopted by the San Francisco Bay RWQCB in 2023, which also includes the 2018 Basin Plan amendment for mercury and dissolved oxygen in Suisun Marsh (Resolution R2-2018-0015) (San Francisco Bay RWQCB 2018, 2023).

Table 4.8-1 lists the existing and potential beneficial uses designated in the San Francisco Bay Basin Plan for surface waters in the Suisun Basin Hydrologic Unit that could receive runoff from the proposed Project. Applying the San Francisco Bay RWQCB's "tributary rule," the beneficial uses of any specifically identified water body generally apply to all its tributaries (for example, Pennsylvania Avenue Creek). In some cases, a beneficial use may not be applicable to the entire body of water; in these cases, the San Francisco Bay Water Board's judgment regarding water quality control measures necessary to protect beneficial uses will be applied. In addition, beneficial uses of streams that only have intermittent flows must also be protected throughout the year (San Francisco Bay RWQCB 2023).

Section 303(d) of the CWA also requires states to identify waters where the permit standards, any other enforceable limits, or adopted water quality standards are still unattained. The law requires states to develop Total Maximum Daily Loads (TMDLs) to improve the water quality of impaired water bodies. TMDLs are the quantities of pollutants that can be safely assimilated by a water body without violating water quality standards. TMDLs are developed for impaired water bodies to maintain beneficial uses, achieve water quality objectives, and reduce the potential for future water quality degradation. National Pollutant Discharge Elimination System (NPDES) permits for water discharges (for both construction and operation) must take into account the pollutants for which a water body is listed as impaired.



Source: Morton & Pitalo 2021, adapted by AECOM 2022

**Exhibit 4.8-1. Existing and Proposed Drainage in the Proposed Development Area**

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**Table 4.8-1. Beneficial Uses of Surface Waters in the Project Region**

Waterbodies	Freshwater Replenishment to Surface Water	Industrial Process/Service Supply	Commercial and Sport Fishing	Cold Freshwater Habitat	Estuarine Habitat	Fish Migration	Rare & Endangered Species Preservation	Fish Spawning	Warm Freshwater Habitat	Wildlife Habitat	Water Contact Recreation	Non-Contact Water Recreation	Navigation
Ledgewood Creek	E	--	--	E	--	E	--	E	E	E	E	E	--
Peytonia Slough	--	--	E	--	E	--	E	--	--	E	E	E	--
Suisun Marsh	--	--	--	--	E	E	E	E	--	E	E	E	--
Suisun Slough	--	--	E	--	E	E	E	E	E	E	E	E	E
Grizzly Bay	--	--	E	--	E	E	E	--	--	E	E	E	--
Suisun Bay	--	E	E	--	E	E	E	E	--	E	E	E	E
Carquinez Straight	--	E	E	--	E	E	E	E	--	E	E	E	E

Notes: E = existing beneficial use; -- = not a beneficial use.

Source: San Francisco Bay RWQCB 2023

Table 4.8-2 lists impaired water bodies in the Suisun Basin Hydrologic Unit included in the State Water Resources Control Board’s (SWRCB’s) 303(d) list that could receive runoff from the proposed Project, the pollutants of concern, and whether they have approved TMDLs (SWRCB 2022a). Even if a specific stream is not included in the SWRCB’s 303(d) list, any upstream tributary to a 303(d)-listed stream could contribute pollutants to the listed segment.

**Flooding**

Most of the Project Site is located in a 100-year flood zone (1 percent annual exceedance probability [AEP]), as designated by the Federal Emergency Management Agency (FEMA 2016). Planning Areas 1 and 2 of the proposed Development Area and a portion of the proposed Management Open Space area are designated by FEMA as Zone AO, which is a 100-year flood zone where flooding is expected to occur via sheet flow, and with an average depth at the Project Site of 1 foot (Exhibit 4.8-2) (Morton and Pitalo 2021). Most of the remainder of the Project Site (including Planning Area 3 of the proposed Development Area) is designated by FEMA as Zone AE, which is a 100-year flood zone where the base flood elevation has been determined (varies by location; at the Project Site, the depth is projected to be approximately 10 feet) (Morton and Pitalo 2021). Most of the proposed off-site improvements are also located in FEMA 100-year flood zones (i.e., Zones AE or EO) (Exhibit 4.8-2).

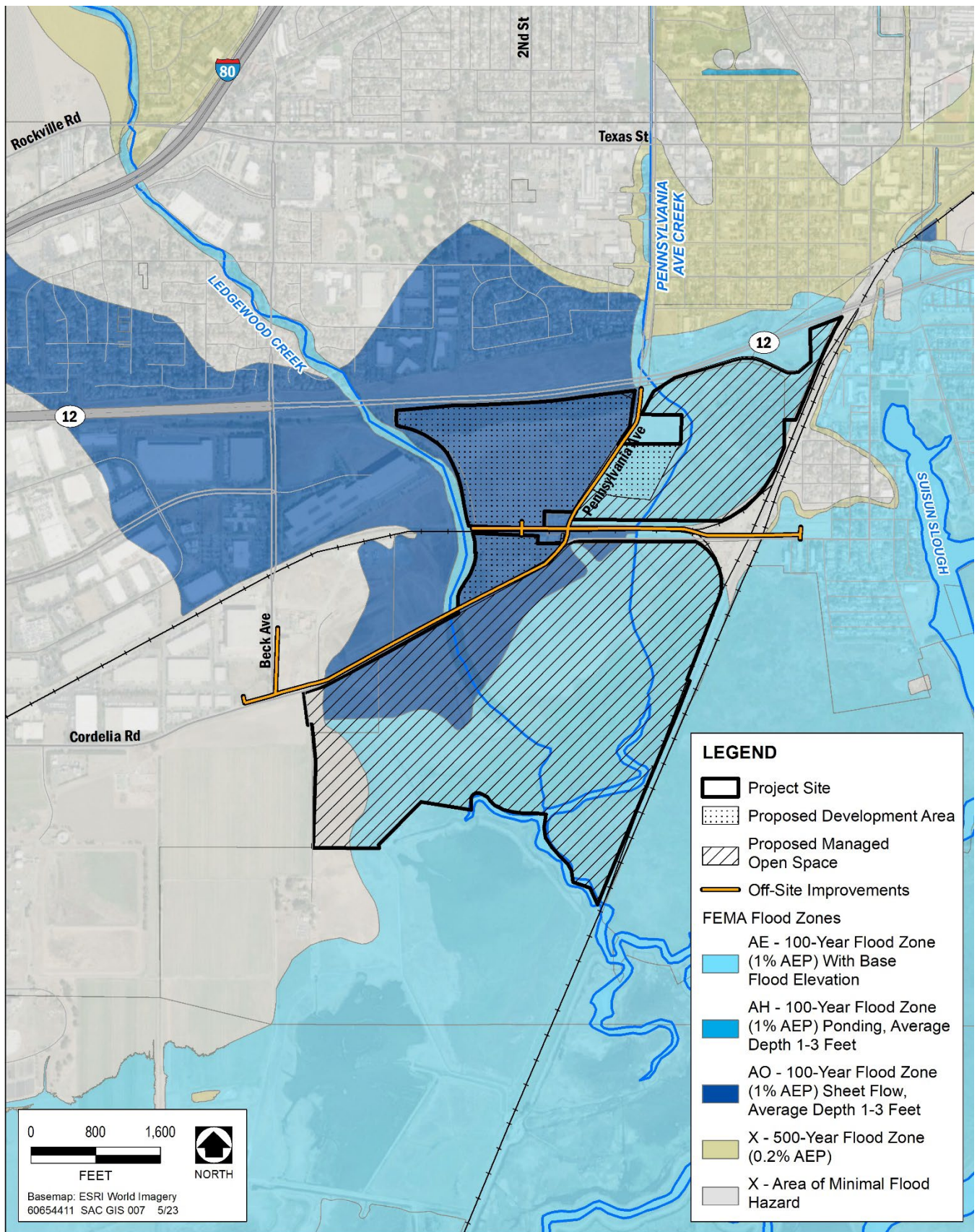
A small portion of the proposed Managed Open Space area in the southwest corner of the Project Site, a portion of the proposed off-site water line along Cordelia Street, and the southern end of the proposed off-site sewer line along Cordelia Road and Beck Avenue, are within FEMA Zone X, which is an area of minimal flood hazard (Exhibit 4.8-2).

**Table 4.8-2. Section 303(d) List of Impaired Water Bodies**

Impaired Water Body	Pollutant	Pollutant Source	TMDL Status
Ledgewood Creek	Diazinon	Unknown	Approved in 2007
Suisun Marsh Wetlands	Mercury	Historic Land Management Activities	Approved 2018
Suisun Marsh Wetlands	Nutrients	Unknown	Expected in 2019; still in process
Suisun Marsh Wetlands	Organic Enrichment/Low Dissolved Oxygen	Historic Land Management Activities	Approved 2018
Suisun Marsh Wetlands	Salinity/Total Dissolved Solids/Chlorides	Unknown	Expected in 2013; still in process
Suisun Bay	Chlordane	Agriculture	Expected in 2029
Suisun Bay	Dichlorodiphenyltrichloroethane (DDT)	Unknown	Expected in 2013; still in process
Suisun Bay	Dieldrin	Unknown	Expected in 2013; still in process
Suisun Bay	Dioxin Compounds	Unknown	Expected in 2019; still in process
Suisun Bay	Furan Compounds	Unknown	Expected in 2019; still in process
Suisun Bay	Invasive Species	Unknown	Expected in 2019; still in process
Suisun Bay	Mercury	Gold mining settlements and local mercury mining (historic); erosion and drainage from abandoned mines (ongoing)	Approved in 2008
Suisun Bay	Polychlorinated biphenyls (PCBs), non-dioxin-like	Unknown	Approved in 2010
Suisun Bay	Polychlorinated biphenyls (PCBs), dioxin-like	Unknown	Approved in 2010
Suisun Bay	Selenium	Unknown	Approved in 2016
Carquinez Strait	Chlordane	Unknown	Expected in 2013; still in process
Carquinez Strait	Dichlorodiphenyltrichloroethane (DDT)	Unknown	Expected in 2013; still in process
Carquinez Strait	Dieldrin	Unknown	Expected in 2013; still in process
Carquinez Strait	Dioxin Compounds	Unknown	Expected in 2019; still in process
Carquinez Strait	Furan Compounds	Unknown	Expected in 2019; still in process
Carquinez Strait	Invasive Species	Unknown	Expected in 2019; still in process
Carquinez Strait	Mercury	Gold mining settlements and local mercury mining (historic); erosion and drainage from abandoned mines (ongoing)	Approved in 2008
Carquinez Strait	Polychlorinated biphenyls (PCBs), non-dioxin-like	Unknown	Approved in 2010
Carquinez Strait	Polychlorinated biphenyls (PCBs), dioxin-like	Unknown	Approved in 2010
Carquinez Strait	Selenium	Unknown	Approved in 2016

Notes: TMDL = total maximum daily load

Source: SWRCB 2022a



Source: FEMA 2016

**Exhibit 4.8-2. FEMA Flood Zones**

## ***Tsunami***

A tsunami is an ocean wave usually created by undersea fault movement or by a coastal or submerged landslide. As the displaced water moves to regain equilibrium, waves are formed and radiate across the open water. When the waveform reaches the coastline, it quickly raises the water level, with accompanying high water velocities that can damage structures and sweep away objects and people. The Project Site and the off-site improvement areas are not in a tsunami inundation zone (California Emergency Management Agency et al. 2022).

## ***Seiche***

A seismic seiche causes standing waves to set up on rivers, reservoirs, ponds, and lakes when seismic waves from an earthquake pass through the area. Because they occur in an enclosed waterbody, standing waves continue to slosh back and forth over a period of time that may range from a few minutes to several hours. The nearest waterbody with potential for seiches is Grizzly Bay/Suisun Bay, approximately 6.5 miles south of the Project Site and the off-site improvement areas, and approximately 10 feet lower in elevation.

## **Erosion and Runoff Potential**

Most soils can be categorized into hydrologic soil groups (which apply only to surface soil layers) based on runoff-producing characteristics. Hydrologic soil groups are factored into calculations of erosion potential when drainage plans are prepared. Based on a review of U.S. Natural Resources Conservation Service ([NRCS] 2022) soil data (see Table 4.5-1 in Section 4.5, “Geology, Soils, Minerals, and Paleontological Resources”), the Alviso, Pescadero, and Sycamore silty clay loam soil in the proposed Development Area and the off-site improvements areas are classified as hydrologic Groups C and D, which have a slow to very slow infiltration rate when thoroughly wet and therefore have a high to very high runoff potential, respectively.

## **GROUNDWATER RESOURCES**

### **Groundwater Basin**

A groundwater basin is defined as a hydrogeologic unit containing one large aquifer or several connected and interrelated aquifers. The California Department of Water Resources (DWR) evaluated the characteristics of groundwater basins in the San Francisco Bay region and throughout the state and summarized the results in California’s Groundwater, Bulletin 118 (DWR 2003). There are 28 groundwater basins and seven sub-basins classified by DWR that produce, or potentially could produce, substantial amounts of groundwater in the San Francisco Bay region. The Project Site and the surrounding area are within the Suisun-Fairfield Valley Groundwater Basin (Basin ID 2-003). The Suisun-Fairfield Valley Groundwater Basin includes the aerial extent of unconsolidated to semi-consolidated sedimentary deposits that are bounded by the Coast Ranges to the west and north, the Sacramento groundwater basin to the east, and the Sacramento-San Joaquin Delta and Suisun Bay to the south. The main water-bearing units are the Sonoma Volcanics, Older Alluvium, Flood Basin and Marsh Deposits, and Younger Alluvium, which, when combined, are as much as 1,500-feet thick near the Sacramento–San Joaquin Delta (Dawson et al. 2018).



## Groundwater Quality

The San Francisco Bay Basin Plan (San Francisco Bay RWQCB 2023) designates the following beneficial uses for groundwater in the Suisun-Fairfield Valley Groundwater Basin: municipal and domestic water supply, industrial process supply, industrial service supply, and agricultural water supply.

Groundwater quality issues within the Suisun-Fairfield Valley Groundwater Basin include high boron, Total Dissolved Solids (TDS), and elevated volatile organic compound (VOC) concentrations near Travis Air Force Base (Dawson et al. 2018, DWR 2020). Many private well owners in the Suisun-Fairfield Valley Groundwater Basin, such as the Solano Irrigation District, use groundwater for agricultural irrigation. However, due to the brackish quality of the groundwater which requires expensive treatment for potable use, surface water is used for potable water supplies (DWR 2020).

## Sustainability

The Sustainable Groundwater Management Act (SGMA) and corresponding regulations require that each groundwater basin designated as a “high” or “medium” priority be operated to a sustainable yield, balancing natural and artificial groundwater recharge with groundwater use to ensure that undesirable results—such as chronic lowering of groundwater levels, loss of storage, water quality impacts, land subsidence, and impacts to hydraulically connected streams—do not occur. California’s groundwater basins are classified into one of four categories; high-, medium-, low-, or very low priority based on components identified in the California Water Code Section 10933(b). Groundwater agencies located within high- or medium-priority basins must adopt groundwater sustainability plans by January 31, 2020, (if the basin was determined by DWR to be a condition of critical overdraft), or by January 31, 2022, for all other high and medium priority basins. Groundwater sustainability plans may be adopted, but are not required, for low and very low priority basins.

In late 2019, DWR released its final basin prioritizations and determined that the Suisun-Fairfield Valley Groundwater Basin is not in a state of overdraft and should be classified as a low priority basin (DWR 2020). Because of the low priority basin designation, a groundwater sustainability plan is not required and has not been prepared for the Suisun-Fairfield Valley Groundwater Basin.

Potable water for the proposed Project would be supplied by the Solano Irrigation District (SID). The SID service area overlies two groundwater basins: the Suisun-Fairfield Valley Groundwater Basin (in the southwest) and the Solano Groundwater Subbasin (in the northeast, Basin ID 5-21.66). Prior to the introduction of surface water through the Solano Project, groundwater served as the primary water source for both the cities and agricultural areas in the region; as a result, groundwater levels declined over time. Following the introduction of surface water deliveries by SID in 1959 to utilize surface water from Lake Berryessa, the ground water levels rebounded, and now the groundwater basin is considered to have generally stable groundwater levels. Deep percolation of applied surface water from irrigated lands and seepage from SID canals and drains provide beneficial recharge to the underlying aquifers. On an annual basis, the total average recharge from seepage, deep percolation of applied water, and deep percolation of precipitation is about 45,000 acre-feet, while the total average SID and private groundwater pumping is about 30,000 acre-feet. The SID has 35 deep wells of which 28 are currently in production and 7 are in place for monitoring groundwater levels; most of the wells are in the northeastern portion of the SID service area (in the Solano Groundwater Subbasin) (Davids Engineering, Inc. 2018).

SID provides water for agricultural irrigation, raw (untreated) water for landscape irrigation, and potable water for several public water systems, the largest of which is the Suisun-Solano Water Authority (SSWA). SSWA supplies potable water to the City of Suisun City (east of the Union Pacific Railroad tracks, on the east side of the Project Site). SSWA has not pumped groundwater since 2001 and has no plans to do so in the future (SSWA 2016). Because the Project Site is outside of the SSWA service area, SID commissioned a water supply assessment for the proposed Project. (Please see Section 4.13, “Utilities and Service Systems” of this EIR for additional information and analyses related to water supply.)

## **4.8.2 REGULATORY FRAMEWORK**

### **FEDERAL PLANS, POLICIES, REGULATIONS AND LAWS**

#### **Clean Water Act**

The CWA of 1972 (33 U.S.C. Section 1251 et seq.) is the primary federal law that governs and authorizes water quality control activities by the U.S. Environmental Protection Agency (EPA), the lead federal agency responsible for water quality management. By employing a variety of regulatory and non-regulatory tools, including establishing water quality standards, issuing permits, monitoring discharges, and managing polluted runoff, the CWA seeks to restore and maintain the chemical, physical, and biological integrity of surface waters to support the protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water.

EPA is the federal agency with primary authority for implementing regulations adopted pursuant to the CWA, and has delegated the State of California as the authority to implement and oversee most of the programs authorized or adopted for CWA compliance through the Porter-Cologne Water Quality Control Act of 1969 described below.

#### ***Water Quality Criteria and Standards***

Pursuant to federal law, EPA published water quality regulations under Volume 40 of the Code of Federal Regulations (CFR). 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 two elements: (1) designated beneficial uses of the water body in question, and (2) 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. Section 303(d) requires states to develop lists of the water bodies and associated pollutants that exceed water quality criteria.

#### ***National Pollutant Discharge Elimination System Permit Program, Section 402***

The NPDES permit program was established as part of the CWA to regulate municipal and industrial discharges to surface waters of the U.S. Federal NPDES permit regulations have been established for broad categories of discharges, including point source municipal waste discharges and nonpoint source stormwater runoff. NPDES permits generally identify limits on the concentrations and/or mass emissions of pollutants in effluent discharged into receiving waters; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

More specifically, the discharge prohibitions and limitations in an NPDES permit for wastewater treatment plants are designed to ensure the maintenance of public health and safety, protection of receiving water resources, and safeguarding of the water's designated beneficial uses. Discharge limitations typically define allowable effluent quantities for flow, biochemical oxygen demand, total suspended matter, residual chlorine, settleable matter, total coliform, oil and grease, pH, and toxic pollutants. Limitations also typically encompass narrative requirements regarding mineralization and toxicity to aquatic life.

In November 1990, EPA published regulations establishing NPDES permit requirements for municipal and industrial stormwater discharges. Phase I of the permitting program applied to municipal discharges of stormwater in urban areas where the population exceeded 100,000 persons.<sup>1</sup> Phase II of the NPDES stormwater permit regulations became effective in March 2003 and required NPDES permits be issued for construction activity for projects that disturb between 1 and 5 acres. Phase II of the municipal permit system (i.e., known as the NPDES General Permit for Small Municipal Separate Storm Sewer Systems [Small MS4s], Order No. 2003-0005-DWQ as amended by 2013-0001-DWQ) required small municipality areas of less than 100,000 persons (hereinafter called Phase II communities) to develop stormwater management programs. The Fairfield-Suisun Urban Runoff Management Program (FSURMP), discussed in detail below, describes the City's activities to comply with the NPDES General Permit for Small MS4s.

California's RWQCBs are responsible for implementing the NPDES permit system (refer to additional details in the section, "State Regulations," below).

#### ***Section 401 Water Quality Certification or Waiver***

Under Section 401 of the CWA, an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the U.S.) must first obtain a certificate from the appropriate agency stating that the fill is consistent with the State's water quality standards and criteria. In California, the authority to either grant water quality certification or waive the requirements is delegated by the SWRCB to the nine regional boards. The San Francisco Bay RWQCB is responsible for the Project area.

#### ***Section 303(d) Impaired Waters List***

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that would 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 TMDL for each of the listed pollutants. The TMDL is the amount of loading that the water body can receive and still be in compliance 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. EPA must either approve a TMDL prepared by the state or disapprove the State's TMDL and issue its own. NPDES permit limits for listed pollutants must be consistent with the waste load allocation prescribed in the TMDL. The goal of the TMDL program is that, after implementation of a TMDL for a given pollutant on the 303(d) list, the causes that led to the pollutant's placement on the list would be remediated.

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<sup>1</sup> Phase I also applies to storm water discharges from a large variety of industrial activities, including general construction activity if the project would disturb more than 5 acres.

## **Federal Antidegradation Policy**

The federal antidegradation policy (40 CFR 131.12) is designed to protect existing water uses, water quality, and national water resources. The federal policy directs states to adopt a statewide policy that includes the following primary provisions:

- ▶ existing instream uses and the water quality necessary to protect those uses shall be maintained and protected;
- ▶ where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development; and
- ▶ where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

## **Federal Emergency Management Agency National Flood Insurance Program**

FEMA administers the National Flood Insurance Program (NFIP, 42 U.S.C. 4016[a]) to provide flood insurance to individuals within communities that adopt and enforce NFIP regulations that limit development in floodplains; federally-backed flood insurance is only available within NFIP communities. FEMA also develops and issues Flood Insurance Rate Maps (FIRMs) that identify which land areas are subject to flooding. Flood hazard zones in the community are identified within the FIRMs, at the minimum, for the 1-in-100 AEP flood event and sometimes other flood events. The design standard for flood protection covered by the FIRMs is established by FEMA with the minimum level of flood protection for new development determined to be the 1-in-100 AEP (i.e., the 100-year flood event). As developments are proposed and constructed, FEMA is also responsible for issuing revisions to FIRMs, such as Conditional Letters of Map Revision (CLOMR) and Letters of Map Revision (LOMR) through the local agencies that work with the National Flood Insurance Program.

## **STATE PLANS, POLICIES, REGULATIONS, AND LAWS**

### **Porter-Cologne Water Quality Control Act**

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) of 1969 is California's statutory authority for the protection of water quality. Under the Act, the State must adopt water quality policies, plans, and objectives that protect the State's waters for the use and enjoyment of the people. Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The RWQCBs are required to formulate and adopt water quality control plans for all areas in the region and establish water quality objectives in the plans. The Porter-Cologne Act sets forth the obligations of the SWRCB and RWQCBs to adopt and periodically update water quality control plans (basin plans). The San Francisco Bay RWQCB regulates water quality in the Project area.

Basin plans are the regional water quality control plans required by both the CWA and Porter-Cologne Act in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. The act also requires waste dischargers to notify the RWQCBs of such activities through the filing of Reports of Waste Discharge (RWD) and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements (WDRs), NPDES permits, CWA Section 401 water quality certifications, or other

approvals. The RWQCBs also have authority to issue waivers to RWD requirements and WDRs for broad categories of “low threat” discharge activities that have minimal potential for adverse water quality effects when implemented according to prescribed terms and conditions.

## **State Water Resources Control Board**

SWRCB and its nine RWQCBs administer water rights and enforce pollution control standards throughout the state. SWRCB is responsible for granting of water right permits and licenses through an appropriation process following public hearings and appropriate environmental review by applicants and responsible agencies. In granting water right permits and licenses, SWRCB must consider all beneficial uses, including water for downstream human and environmental needs. In addition to granting the water right permits needed to operate new water supply projects, SWRCB also issues water quality-related certifications to developers of water projects under Section 401 of the CWA.

## **Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan)**

The *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan) (San Francisco Bay RWQCB 2023) identifies the beneficial uses of water bodies and provides water quality objectives and standards for waters of the San Francisco Bay hydrologic region. State and federal laws mandate protecting designated “beneficial uses” of water bodies. State law defines beneficial uses as “domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves” (Water Code Section 13050[f]).

The beneficial uses of any specifically identified water body generally apply to all tributary streams to that water body. Those water bodies not specifically designated for beneficial uses in the Basin Plan are assigned the Municipal and Domestic Supply (MUN) use, in accordance with the State Water Board Resolution No. 88-63. Although specific surface waters have not been identified for groundwater recharge or freshwater replenishment in the Basin Plan, these additional protected beneficial uses are designated in the Basin Plan. Unless otherwise designated by the San Francisco Bay RWQCB, all groundwater is considered suitable or potentially suitable for MUN.

The Basin Plan describes a set of designated beneficial uses for each water body. Beneficial uses help to define the resources, services, and qualities of the aquatic systems. Beneficial uses also serve as a basis for establishing water quality objectives and discharge prohibitions. The Basin Plan contains specific numeric water quality objectives that are applicable to each water body or portions of water bodies. Objectives have been established for bacteria, dissolved oxygen, pH, pesticides, electrical conductivity, total dissolved solids, temperature, turbidity, and trace elements. Numerous narrative water quality objectives have also been established. Finally, the Basin Plan contains a set of implementation plans, which represent the San Francisco Bay RWQCB’s programs and specific plans of action for meeting water quality objectives and protecting beneficial uses.

## **National Pollutant Discharge Elimination System Permit System**

### ***Waste Discharge Requirements for Construction***

The SWRCB’s statewide stormwater general permit for construction activity (Order WQ 2022-0057-DWQ, NPDES Permit No. CAS000002) is applicable to all construction activities that would disturb 1 acre of land or more (SWRCB 2022b). Construction activities subject to the general construction activity permit include clearing,

grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters.

Through the NPDES and WDR process, SWRCB seeks to ensure that the construction and post-construction conditions do not cause or contribute to direct or indirect impacts on water quality (i.e., pollution and/or hydromodification) upstream and downstream. To comply with the requirements of the Construction General Permit, project applicants must file a notice of intent with the SWRCB to obtain coverage under the permit; prepare a Storm Water Pollution Prevention Plan (SWPPP); and implement inspection, monitoring, and reporting requirements appropriate to the project's risk level as specified in the SWPPP. The SWPPP includes a site map, describes construction activities and potential pollutants, and identifies Best Management Practices (BMPs) that would be employed to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources, such as petroleum products, solvents, paints, and cement. Construction activities subject to the general construction activity permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters. The permit also requires dischargers to consider the use of post-construction permanent BMPs that will remain in service to protect water quality throughout the life of a project. All NPDES permits also have inspection, monitoring, and reporting requirements.

#### ***Municipal Regional Stormwater Discharge (MS4) Permit***

Suisun City is under the purview of the San Francisco Bay RWQCB Municipal Regional Stormwater NPDES (MS4) Permit Order R2-2015-0049 as amended in 2019, NPDES Permit No. CAS612008 (San Francisco Bay RWQCB 2015).

Originally issued in 2009, this updated permit was issued to 76 Bay Area municipalities, including the FSURMP formed by the cities of Suisun City and Fairfield (discussed further below).

The MS4 Permit specifies the actions necessary to reduce the discharge of pollutants in stormwater to the maximum extent practicable, in a manner designed to achieve compliance with water quality standards and objectives, and methods to effectively prohibit non-stormwater discharges into municipal storm drain systems and watercourses within the permittees' jurisdictions.

#### ***Waste Discharge Requirements for Industrial Operation***

The Statewide General Permit for Storm Water Discharges Associated with Industrial Activities, Order 2014-0057-DWQ (Industrial General Permit or IGP), as amended in 2015 and 2018, effective July 1, 2020, implements the federally required storm water regulations in California for storm water associated with industrial activities that discharge to waters of the United States (SWRCB 2020). The SWRCB and the nine RWQCBs implement and enforce the Industrial General Permit. The Industrial General Permit is called a general permit because many industrial facilities are covered by the same permit but comply with its requirements at their individual industrial facilities. The Industrial General Permit regulates discharges associated with 9 broad categories of industrial activities: certain specific manufacturing operations (e.g. asphalt, cement, fertilizer, and feedlots), all manufacturing facilities with standard industrial classifications, oil and gas mining facilities, hazardous waste treatment and disposal facilities, landfills and open dumps, recycling facilities, steam electric power generating facilities, facilities with vehicle maintenance shops and/or equipment cleaning operations, and wastewater treatment plants. Dischargers are required to use Best Available Technologies to reduce pollutants in stormwater

discharges. Dischargers are also required to prepare and implement a SWPPP along with a suite of BMPs designed to reduce pollutants; and to conduct an annual Comprehensive Facility Compliance Evaluation to determine whether the existing BMPs are effective or whether additional stormwater controls are needed. The Industrial General Permit also contains water quality monitoring and reporting requirements.

## **California Department of Transportation National Pollutant Discharge Elimination System Permits**

Construction-related stormwater discharges from California Department of Transportation (Caltrans) properties, including Caltrans rights-of-way, are regulated under the SWRCB's Statewide NPDES Permit CAS000003, SWRCB Order 2012-0011-DWQ as amended in 2017 (Caltrans Construction NPDES Permit) (SWRCB 2017). Operation-related stormwater discharges from Caltrans properties are regulated under the SWRCB's Statewide NPDES Permit CAS000003, Order 2022-XXX-DWQ (SWRCB 2022c). These NPDES Permits are locally overseen by Caltrans and the San Francisco Bay RWQCB in the San Francisco Bay Region. During construction, projects that are within the Caltrans right-of-way must use the *Stormwater Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual* (Caltrans 2016) to design stormwater control plans and implement BMPs that comply with Caltrans' *Construction Site Best Management Practices (BMPs) Manual* (Caltrans 2017), which incorporates the SWRCB's requirements contained in the Caltrans Construction NPDES Permit and the CWA. To comply with the Caltrans Construction NPDES Permit, a SWPPP must be prepared and implemented if 1 acre or more of soil would be disturbed; if the disturbance would encompass less than 1 acre, a Water Pollution Control Program (WPCP) must be implemented. Caltrans' BMP Manual provides guidance for the selection, installation, and required maintenance of individual BMPs, which are divided into six categories: temporary soil stabilization, temporary sediment control, wind erosion control, tracking control (i.e., stabilization of construction site access points), non-stormwater management<sup>2</sup>, and waste management and material pollution<sup>3</sup>. Details related to each specific BMP are provided in the Manual. Caltrans' stormwater pollution control requirements are intended to be implemented on a year-round basis at an appropriate level. The requirements must be implemented in a proactive manner during all seasons while construction is ongoing.

During the operational stage, projects within the Caltrans right-of-way must comply with the requirements of the *Stormwater Quality Handbooks, Project Planning and Design Guide* (Caltrans 2019), which includes the following standard project planning and design requirements for new development and redevelopment.

- ▶ Design pollution prevention BMPs.
- ▶ Post-construction stormwater treatment controls for highway facility projects that create 1 acre or more of new impervious surface or non-highway facility projects that create 5,000 square feet or more of new impervious surface.
- ▶ Hydromodification requirements.

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<sup>2</sup> Source control BMPs prevent pollution by limiting or reducing potential pollutants at the source before they come in contact with stormwater. These practices involve day-to-day operations of the construction site. These BMPs are also referred to as "good housekeeping practices," which involve keeping a clean, orderly construction site.

<sup>3</sup> Waste management consists of implementing procedural and structural BMPs for handling, storing, and disposing of wastes generated by a construction project to prevent the release of waste materials into stormwater discharges.

- ▶ Stream crossing design guidelines to maintain natural stream processes.

Off-site improvements that would involve work within Caltrans rights-of-way would be required to comply with Caltrans' manuals, handbooks, standard project planning and design requirements, and BMP requirements discussed above.

## **Sustainable Groundwater Management Act**

In 2014, the California Legislature enacted a three-bill law (Assembly Bill 1739, Senate Bill [SB] 1168, and SB 1319), known as the SGMA. The SGMA was created to provide a framework for the sustainable management of groundwater supplies, and to strengthen local control and management of groundwater basins throughout the state with little state intervention. The SGMA is intended to empower local agencies to adopt groundwater sustainability plans that are tailored to the resources and needs of their communities, such that sustainable management would provide a buffer against drought and climate change, and ensure reliable water supplies regardless of weather patterns. The SGMA and corresponding regulations require that each high and medium priority groundwater basin is operated to a sustainable yield, balancing natural and artificial groundwater recharge with groundwater use to ensure undesirable results such as chronic lowering of groundwater levels, loss of storage, water quality impacts, land subsidence, and impacts to hydraulically connected streams do not occur. The SGMA is considered part of the statewide, comprehensive California Water Action Plan that includes water conservation, water recycling, expanded water storage, safe drinking water, and wetlands and watershed restoration. The SGMA protects existing surface water and groundwater rights and does not affect current drought response measures.

California's 515 groundwater basins are classified into one of four categories; high-, medium-, low-, or very low-priority based on components identified in the California Water Code Section 10933(b). Basin priority determines which provisions of California Statewide Groundwater Elevation Monitoring (CASGEM) and the SGMA apply in a basin. In 2019, DWR completed its prioritization of the groundwater basins (DWR 2019).

The SGMA requires that local agencies form one or more groundwater sustainability agencies (GSAs) within 2 years (i.e., by June 30, 2017). Agencies located within high- or medium-priority basins must adopt groundwater sustainability plans by January 31, 2020, or January 31, 2022.<sup>4</sup> The time frame for basins determined by DWR to be in a condition of "critical overdraft" is by January 31, 2020, all other high and medium priority basin have until January 31, 2022. Local agencies will have 20 years to fully implement groundwater sustainability plans after the plans have been adopted. Intervention by the SWRCB would occur if a GSA is not formed by the local agencies, and/or if a groundwater sustainability plan is not adopted or implemented.

The SGMA requires local agencies to develop and implement groundwater sustainability plans in high and medium priority groundwater basins throughout the State of California. Groundwater sustainability plans are not required for low or very low priority basins. As noted above, because of the low priority basin designation, a groundwater sustainability plan is not required and has not been prepared for the Suisun-Fairfield Valley Groundwater Basin.

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<sup>4</sup> Unless the local agency has submitted an Alternative as defined in the SGMA which has been approved by DWR.



## **Suisun Marsh Protection Plan**

The Suisun Marsh Protection Plan was enacted in 1977 to protect, use with discretion, enhance, and where possible, restore the tidal marsh, managed wetlands, seasonal marsh, lowland grasslands, upland grasslands, riparian areas, and waterways of the Suisun Marsh. State, regional, and local agencies (including Solano County and the City of Suisun City) with regulatory responsibilities in the Marsh are required to carry out those responsibilities and activities in conformity with the Suisun Marsh Protection Plan. The San Francisco Bay Conservation and Development Commission (BCDC) is responsible for carrying out the State's responsibilities under the Suisun Marsh Protection Plan. There are two management areas established by the Suisun Marsh Protection Plan: Primary and Secondary. The State's responsibilities are exercised through a permit system for development within the primary management area (BCDC 1976). The southern portion of the Project Site is within the Primary Management Area and a small portion of the southwestern extremity of the Project Site is within the Secondary Management Area. As shown in Exhibit 3-3 (see Chapter 3, "Project Description"), all portions of the Project Site that are in the Primary Management Area and Secondary Management Area of the Suisun Marsh Protection Plan south and southeast of Cordelia Road and Cordelia Street are proposed for Managed Open Space as part of the proposed Project.

The following policies from the Suisun Marsh Protection Plan (BCDC 1976) related to water quality are applicable to the proposed Project.

### ***Water Supply and Quality***

- ▶ **Policy 7:** Disruption or impediments to runoff and stream flow in the Suisun Marsh watershed should not be permitted, if it would result in adverse effects on the quality of water entering the Marsh. Riparian vegetation in the immediate Suisun Marsh watershed should be preserved, and stream modification permitted, only if it is necessary to ensure the protection of life and existing structures from floods. Only the minimum amount of modification necessary should be allowed in such cases. Local runoff, erosion and sediment control ordinances should be established to protect the Marsh from potential adverse impacts.
- ▶ **Policy 10:** The development of industrial facilities adjacent to or upstream from the Marsh should not be permitted if they have the potential to cause significant adverse impacts on the water quality of the Suisun Marsh. Activities that could significantly alter the temperature, salinity or turbidity of the water should be prohibited. Industrial facilities that will increase the potential for spills of toxic and hazardous materials should not be permitted unless it is established that spills of such materials will not represent a significant threat to the Marsh.

## **REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES**

### **Solano County General Plan**

The Solano County General Plan Resources Element (Solano County 2008) and Public Health and Safety Element (Solano County 2015) contain the following policies related to hydrology and water quality in the proposed Managed Open Space area that would remain in the unincorporated county.

#### ***Resources Element***

- ▶ **Policy RS.P-65:** Require the protection of natural water courses.

- ▶ **Policy RS.P-70:** Protect land surrounding valuable water sources, evaluate watersheds, and preserve open space lands to protect and improve groundwater quality, reduce polluted surface runoff, and minimize erosion.
- ▶ **Policy RS.P-71:** Ensure that land use activities and development occur in a manner that minimizes the impact of earth disturbance, erosion, and surface runoff pollutants on water quality.
- ▶ **Policy RS.P-16:** The County shall ensure that development in the County occurs in a manner which minimizes impacts of earth disturbance, erosion and water pollution.
- ▶ **Policy RS.P-17:** The County shall preserve the riparian vegetation along significant County waterways in order to maintain water quality and wildlife habitat values.
- ▶ **Policy RS.P-65:** Require the protection of natural water courses.
- ▶ **Policy RS.P-66:** Together with the Solano County Water Agency, monitor and manage the county's groundwater supplies.
- ▶ **Policy RS.P-68:** Protect existing open spaces, natural habitat, floodplains, and wetland areas that serve as groundwater recharge areas.
- ▶ **Policy RS.P-71:** Ensure that land use activities and development occur in a manner that minimizes the impact of earth disturbance, erosion, and surface runoff pollutants on water quality.
- ▶ **Policy RS.P-72:** Preserve riparian vegetation along county waterways to maintain water quality.
- ▶ **Policy RS.P-75:** Require and provide incentives for site plan elements (such as permeable pavement, swales, and filter strips) that limit runoff and increase infiltration and groundwater recharge.
- ▶ **Policy RS.P-76:** Promote sustainable management and efficient use of agricultural water resources.

***Public Health and Safety***

- ▶ **Policy HS.P-1:** Prevent or correct upstream land use practices that contribute to increased rates of surface water runoff.
- ▶ **Policy HS.P-2:** Restore and maintain the natural functions of riparian corridors and water channels throughout the county to reduce flooding, convey stormwater flows, and improve water quality.
- ▶ **Policy HS.P-3:** Require new developments to incorporate devices capable of detaining the stormwater runoff caused by a 100-year storm event or to contribute to regional solutions to improve flood control, drainage, and water recharge.
- ▶ **Policy HS.P-4:** Encourage the use of stormwater detention that may also be used for groundwater recharge.
- ▶ **Policy HS.P-5:** Appropriately elevate and flood proof developments for human occupancy within the 100-year floodplain for the profile of a 100-year flood event.

- ▶ **Policy HS.P-7:** Require new development proposals in dam, canal, or levee inundation areas to consider risk from failure of these facilities and to include mitigations to bring this risk to a reasonable level.
- ▶ **Policy HS.P-9:** Preserve open space and agricultural areas that are subject to natural flooding and are not designated for future urban growth; prohibit permanent structures in a designated floodway where such structures could increase risks to human life or restrict the carrying capacity of the floodway.
- ▶ **Policy HS.P-10:** Ensure that flood management policies that minimize loss of life and property also balance with environmental health considerations of the floodplain and therefore do not cause further erosion, sedimentation, or water quality problems in the floodplain area.

### ***Suisun Marsh Policy Addendum***

- ▶ Agriculture within the primary management area of the Suisun Marsh should be limited to activities compatible with, or intended for, the maintenance or improvement of wildlife habitat. These include extensive agricultural uses such as grain production and grazing. Intensive agricultural activities involving removal or persistent plowing of natural vegetation should not be permitted. Grain production should be confined to the Grizzly Island Wildlife Area and relatively small, well suited areas of some of the large duck clubs. Grazing should be used to control vegetation on duck clubs where plant cover is sub-optimum for waterfowl use and should be discouraged on those clubs where there is already a good mixture of preferred waterfowl food plants. *Grazing pressures should not exceed sound range management practices.* [Emphasis added]
- ▶ Disruption or impediments to runoff and stream flow in the Suisun Marsh watershed should not be permitted if it would result in adverse effects on the quality of water entering the Marsh. Riparian vegetation in the immediate Suisun Marsh watershed should be preserved, and stream modification permitted only if it is necessary to ensure the protection of life and existing structures from floods. Only the minimum amount of modification necessary should be allowed in such cases.
- ▶ The development of industrial facilities adjacent to or upstream from the Marsh should be planned to eliminate significant adverse environmental impacts on the water quality of the Suisun Marsh. Activities that could significantly alter the temperature, salinity, or turbidity of the water should be prohibited. Industrial facilities that will increase the potential for spills of toxic and hazardous materials should not be permitted unless it is established that spills of such materials will not represent a significant threat to the Marsh.
- ▶ Any development in the Suisun Marsh watershed or secondary management area proposed for areas that have poor soil conditions for construction or that are seismically active, should be controlled to prevent or minimize earth disturbance, erosion, water pollution, and hazards to public safety. Local runoff, erosion, and sediment control ordinances should be established in the immediate Suisun Marsh watershed to protect the Marsh from these potential adverse effects.
- ▶ The following upstream land use practices often contribute to increased rates of surface water runoff and should therefore be prevented or regulated;
  - a. Overgrazing by livestock.
  - b. Logging, clearing, burning, and other activities which can reduce natural vegetative cover.

- c. Construction of extensive impermeable surfaces (large developments which might include a number of structures, patios, dwellings, roads, etc.) over naturally permeable soil and geologic areas.
- ▶ Upstream land use controls shall be formulated to protect riparian corridors (the stream, its banks, and creekside vegetation) from encroachment and degradation by development.
- ▶ No development shall be permitted which would interfere with existing channel capacity or would substantially increase erosion, siltation, or other contributors to the deterioration of any watercourse.

### **Suisun Marsh Local Protection Program**

The majority of the Suisun Marsh lies under the jurisdiction of Solano County. Other local governmental agencies having jurisdiction within the Suisun Marsh include the cities of Benicia, Fairfield, and Suisun City, the Solano County Local Agency Formation Commission, the Solano County Mosquito Abatement District, and the Suisun Resource Conservation District. Under the provisions of the Suisun Marsh Preservation Act (California Public Resources Code Division 19, Sections 29000–29612), Solano County and each of these other agencies is required to bring its general and specific plans, ordinances and zoning maps, land use regulations, and other related standards and controls into conformity with the provisions of the Suisun Marsh Protection Plan. The combination of all such land use and development policies, standards, and controls adopted by all of these agencies constitutes the Suisun Marsh Local Protection Program.

The Suisun Marsh Protection Plan (BCDC 1976) defines the Suisun Marsh watershed as the area immediately upland from the secondary management area of the Suisun Marsh, including those streams and adjacent riparian areas that are tributary to, or flow into, the Suisun Marsh. Consistent with the Suisun Marsh Protection Plan, the Solano County Element of the Suisun Marsh Local Protection Program seeks to ensure that further development outside the Suisun Marsh but within the watershed does not adversely affect water quality within the Suisun Marsh due to sedimentation and increased urban runoff. The Solano County Element of the Suisun Marsh Local Protection Program (Solano County 2018) includes development controls that are designed to achieve the following objectives (among others) directly related to water quality:

- ▶ erosion, sediment, and run-off controls in the secondary management area of the Suisun Marsh and the watershed; and
- ▶ controls on creek side developments that would protect riparian habitat and the Suisun Marsh from increased siltation and water run-off caused by waterway modification along and immediately adjacent to waterways flowing into the Marsh.

These development controls are enforced through a variety of Solano County Ordinances, the Solano County Zoning Code, and the Solano County General Plan goals, policies, and land use designations.

Ledgewood Creek, which flows adjacent to the northwestern portion of the Project Site and flows through the southern portion of the Project Site, is an adopted “protected channel” under the Local Protection Program.

### **City of Fairfield General Plan**

Because the northern portion of the Project Site (along SR 12) where Project-related development is proposed abuts the city of Fairfield, and a portion of the Ledgewood Creek Open Space area within the city of Fairfield is

immediately adjacent to the northwestern property boundary where Project-related development is proposed, the City of Suisun City has considered the following City of Fairfield General Plan (City of Fairfield 2002) policies related to hydrology and water quality.

### ***Health and Safety Element***

- ▶ **Policy HS 2.8:** Require an erosion control and rehabilitation plan to be prepared for projects requiring substantial groundbreaking activities to control short-term and long-term erosion and sedimentation in nearby streams and rivers.
- ▶ **Policy HS 3.2:** Require development within flood plain areas to comply with FEMA regulations by providing adequate flood mitigation and financial protection in the event of flooding.
- ▶ **Policy HS 3.5:** Development that interferes with channel capacity or causes erosion and siltation shall not be allowed.

### ***Open Space, Conservation, and Recreation Element***

- ▶ **Policy OS 9.2:** Manage all seasonal creeks and other drainage courses so as to protect and enhance the Suisun Marsh.
- ▶ **Policy OS 9.8:** Preserve natural water courses through requirements of land dedication and open space improvement imposed during the land development process.
  - **Program OS 9.2 A.** During development review, require all projects to continue to meet the requirements of the Fairfield-Suisun Sewer District. Incorporate appropriate best management practices into stormwater runoff plans to reduce impacts on local seasonal creeks and drainage courses.

### **City of Fairfield Municipal Code Chapter 22B, Stormwater Management and Discharge Control**

Because a portion of the Ledgewood Creek Open Space area, which is within the city of Fairfield, is immediately adjacent to the western property boundary where Project-related development is proposed, the City of Suisun City has considered the following sections of the City of Fairfield Municipal Code.

#### ***Section 22B.120 Reduction of Pollutants In Stormwater—Industrial and Commercial Site Controls***

B. Requirements. Each [licensed commercial or industrial] business shall implement BMPs to reduce and/or eliminate potential discharges to the City’s storm drain system from any outdoor process and manufacturing areas, outdoor material storage areas, outdoor waste storage and disposal areas, outdoor vehicle and equipment storage and maintenance areas and yards, outdoor parking areas and access roads, outdoor wash areas, outdoor drainage from indoor areas, rooftop equipment and any other such sources designated by the Public Works Director.

#### ***Section 22B.140 Reduction of Pollutants in Stormwater***

C. Best Management Practices for New Developments and Redevelopments.

1. All new and redevelopment projects shall comply with all applicable requirements set forth in Section C.3 of the NPDES Permit, with respect to the design, construction and maintenance of stormwater treatment

for new development or redevelopment projects. The City may adopt requirements identifying appropriate Best Management Practices to control the volume, rate, and potential pollutant load of stormwater runoff from new development and redevelopment projects as may be appropriate to minimize the generation, transport and discharge of pollutants. All new and redevelopment projects shall comply with the terms, provisions, and conditions of such requirements.

E. Notification of Intent and Compliance with General Permits.

1. Each industrial discharger, discharger associated with construction activity, or other discharger, described in any general stormwater permit addressing such discharges, as may be adopted by the United States Environmental Protection Agency, the State Water Resources Control Board, or the California Regional Water Quality Control Board, San Francisco Bay Region, shall provide notice of intent, comply with, and undertake all other activities required by any general stormwater permit applicable to such discharges.
2. Each discharger identified in an individual NPDES permit relating to stormwater discharges shall comply with and undertake all activities required by such permit.

F. Compliance with Best Management Practices.

Where best management practices, guidelines or requirements have been adopted by any federal, state of California, regional and/or City agency, for any activity, operation or facility which may cause or contribute to stormwater pollution or contamination, illicit discharges, and/or discharge of non-stormwater to the stormwater system, every person undertaking such activity or operation, or owning or operating such facility shall comply with such guideline or requirements as may be identified by the Public Works Director.

**Section 22B.150, Watercourse Protection**

- A. Every person owning property through which a watercourse passes, or such person's lessee or tenant, shall keep and maintain that part of the watercourse within the property reasonably free of trash, debris, excessive vegetation, and other obstacles which would pollute, contaminate, or significantly retard the flow of water through the watercourse; shall maintain existing privately-owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse; and shall not remove healthy bank vegetation beyond that actually necessary for the maintenance, nor remove the vegetation in such a manner as to increase the vulnerability of the watercourse to erosion.
- B. No person shall permit or cause to be committed any of the following acts, unless a written approval has first been obtained from the Public Works Director:
  1. Discharge into or connect any pipe or channel to a watercourse;
  2. Modify the natural flow of water in a watercourse;
  3. Carry out development within thirty (30) feet of the center line of any creek or twenty (20) feet of the top of a bank;

4. Deposit in, plant in, or remove any material from a watercourse including the banks, except as required for necessary maintenance;
5. Construct, alter, enlarge, connect to, change, or remove any structure in a watercourse; or
6. Place any loose or unconsolidated material along the side of or within a watercourse or so close to the side as to cause a diversion of the flow, or to cause a probability of such material being carried away by stormwaters passing through such watercourse.

### **Fairfield-Suisun Urban Runoff Management Program**

In the cities of Fairfield and Suisun City, stormwater and urban runoff is collected in a system that is separate from the wastewater system. The FSURMP is a collaboration established by an agreement between the City of Fairfield and the City of Suisun City. In these two cities, development projects must comply with the Municipal Regional Stormwater NPDES Permit (MS4 Permit) issued by the San Francisco Bay Regional RWQCB to the FSURMP (and other agencies and stormwater programs) in 2015 (Order No. R2-2015-0049 as amended in 2019) (San Francisco Bay RWQCB 2015). The FSURMP implements the requirements of the MS4 Permit. The FSURMP is intended to reduce or eliminate pollutants discharged from the urban environment into storm drains, local creeks, and the Suisun Marsh. Water flowing into the gutters and storm drains is not treated before discharge into the creeks, which feed into the Suisun Marsh. Key components of the FSURMP include industrial and commercial inspections, education outreach to schools and the general public, monitoring municipal maintenance activities, and ensuring that local residential and commercial construction sites do not contribute to pollution in local waterways.

Development projects within the cities of Fairfield and Suisun City are required to address stormwater quality during development review. Projects must use BMPs during construction to reduce impacts from construction work, and also during project operation to reduce post-construction impacts to water quality. Long-term water quality impacts must be reduced using site design and source control measures to help keep pollutants out of stormwater. Details related to these requirements are contained in the FSURMP's *Stormwater C.3 Guidebook* (FSURMP 2012).

All projects that are required to treat stormwater must treat the permit-specified amount of stormwater runoff with the following Low Impact Development (LID) methods: rainwater harvesting and use, infiltration, evapotranspiration, or biotreatment. However, biotreatment will be allowed only when it can be shown that other LID methods are infeasible at the project site. Vault-based treatment is not allowed as a stand-alone treatment measure. Where stormwater harvesting and use, infiltration, or evapotranspiration are infeasible, vault-based treatment measures may be used in series with biotreatment, for example, to remove trash or other large solids.

Projects that create and/or replace 5,000 square feet or more of impervious surface related to auto service facilities, retail gasoline outlets, restaurants, and/or surface parking are required to provide LID treatment of stormwater runoff. This requirement applies to uncovered parking that is standalone or included as part of any other development project, and it applies to the top uncovered portion of a parking structure, unless drainage from the uncovered portion is connected to the sanitary sewer. For all other land use categories, 10,000 square feet remains the regional threshold for requiring LID, source control site design, and stormwater treatment.

## **Storm Drainage Systems — Fairfield-Suisun Sewer District**

The Fairfield-Suisun Sewer District participates in the FSURMP (described above) and assists the cities of Fairfield and Suisun City by: (1) operating and maintaining storm drain facilities, including pumping stations, pipelines, channels, natural creeks, detention basins, bridge foundations, sloughs and culverts; and (2) working with the San Francisco Bay RWQCB, the Environmental Protection Agency, and other agencies in enforcing pollution control regulations.

### **City of Suisun City General Plan**

The Suisun City General Plan (City of Suisun City 2015) includes the following policies and program related to hydrology and water quality that apply to the proposed Project.

#### ***Public Health and Safety Element***

- ▶ **Policy PHS-5.1:** New development shall incorporate site design, source control, and treatment measures to keep pollutants out of stormwater during construction and operational phases, consistent with City and Fairfield-Suisun Urban Runoff Management Program standards.
  - **Program PHS-5.1: Stormwater Development Requirements.** The City will review new developments for applicable requirements of the National Pollutant Discharge Elimination System (NPDES) permit. New developments must use best management practices (BMPs) during construction to mitigate impacts from construction work and during post construction to mitigate post-construction impacts to water quality. Long-term water quality impacts must be reduced using site design and source control measures to help keep pollutants out of stormwater. The City will encourage proactive measures that are a part of site planning and design that would reduce stormwater pollution as a priority over mitigation measures applied to projects after they are designed. Some of the many ways to reduce water quality impacts through site design include: reduce impervious surfaces; drain rooftop downspouts to lawns or other landscaping; and use landscaping as a storm drainage and treatment feature for paved surfaces.
- ▶ **Policy PHS-5.2:** New developments shall incorporate low impact development (LID) strategies, such as rain gardens, filter strips, swales, and other natural drainage strategies, to the greatest extent feasible, in order to reduce stormwater runoff levels, improve infiltration to replenish groundwater sources, reduce localized flooding, and reduce pollutants close to their source.
- ▶ **Policy PHS-5.3:** New developments should minimize the land area covered with driveways, loading areas, and parking lots in order to reduce stormwater flows, reduce pollutants in urban runoff, recharge groundwater, and reduce flooding.
- ▶ **Policy PHS-5.4:** New developments should use permeable surfaces for hardscape, where feasible.
- ▶ **Policy PHS-5.5:** Industrial land uses with high wastewater generation rates or effluent pollutant concentrations may be required by the Fairfield Suisun Sewer District to install equipment for pre-treatment of wastewater.
- ▶ **Policy PHS-11.2:** The City will use the most current flood hazard and floodplain information from state and federal agencies (such as the State Department of Water Resources, the Federal Emergency Management



Agency, and the Army Corps of Engineers) as a basis for project review and to guide development, in accordance with federal and state regulations.

- ▶ **Policy PHS-11.3:** The City will regulate development within floodplains according to state and federal requirements to minimize human and environmental risks and maintain the City's eligibility under the National Flood Insurance Program.
- ▶ **Policy PHS-11.4:** The City will require evaluation of potential flood hazards before approving development projects.
- ▶ **Policy PHS-11.5:** The City will require that structures intended for human occupancy within the 100-year floodplain are appropriately elevated and flood proofed for the profile of a 100-year flood event. Flood proofing may include a combination of structural and nonstructural additions, changes, or adjustments to structures that reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures, and their contents.
- ▶ **Policy PHS-11.6:** The City will require new developments within a 100-year floodplain to demonstrate that such development will not result in an increase to downstream flooding.

#### ***Open Space and Conservation Element***

- ▶ **Policy OSC-1.2:** New developments in areas with waterways, riparian habitats, and stands of mature trees shall preserve and incorporate those features into project site planning and design, to the greatest extent feasible.
- ▶ **Policy OSC-1.3:** New developments shall be designed to protect and preserve natural watercourses and drainage channels to the maximum extent feasible.
- ▶ **Policy OSC-1.8:** Roads, water lines, sewer lines, drainage facilities, and other public facilities constructed to serve development shall be located and designed to avoid substantial impacts to stream courses, associated riparian areas, and wetlands, to the greatest practical extent.
- ▶ **Policy OSC-3.4:** New developments shall control debris, sediment, and the rate and dispersal of runoff before drainage into watercourses and Suisun Marsh through the incorporation of erosion control measures.
- ▶ **Policy OSC-3.5:** New developments adjacent to watercourses, Suisun Slough, and Suisun Marsh shall include buffer areas, as needed, to avoid flood hazards, protect water quality, and preserve habitat for wildlife.
- ▶ **Policy OSC-4.4:** The City will require measures in areas adjacent to the Suisun Marsh to ensure against adverse effects related to urban runoff and physical access to the Marsh.

#### ***Community Facilities and Services Element***

- ▶ **Policy CFS-8.2:** New developments will be required to construct and dedicate facilities for drainage collection, conveyance, and detention and/or contribute on a fair-share basis to area-wide drainage facilities that serve additional demand generated by the subject project.

## **Suisun City Grading, Erosion Control, and Creekside Development Ordinance**

Suisun City Municipal Code Title 15, Chapter 15.12 regulates grading, erosion control, and development adjacent to surface water bodies. A grading permit is required for projects that exceed 50 cubic yards of material or include more than 5,000 square feet of surface area. The application for a grading permit requires submittal of a site plan; grading map; and an erosion, sediment, and runoff control plan. The erosion, sediment, and runoff control plan must include the land treatment, structural measures, and timing requirements that would be implemented at the project site to effectively minimize soil erosion and sedimentation. The runoff control plan must also indicate the calculated runoff from the site under pre- and post-development conditions, using City drainage standards. The runoff control plan must demonstrate that peak runoff from the site would not increase after development and must include all necessary measures to ensure this result to the satisfaction of the City engineer. All materials must be prepared by a registered civil engineer. (Additional details related to the requirements of this ordinance are presented in Section 4.5, “Geology, Soils, Minerals, and Paleontological Resources.”)

Suisun City Municipal Code Title 15, Chapter 15.12, Section 15.12.230 (Creekside Development) requires that whenever development is proposed for an area within 300 feet of the centerline of a designated watercourse, a detailed plan of the proposed development shall be submitted to the City for approval. The plan shall include, but not be limited to, the following:

- A. Volume and extent of grading, filling and excavation;
- B. Placement of drainage outflows. Such outflows and associated drainage facilities shall be designed so as to eliminate or minimize increases in the rate and amount of stormwater discharge;
- C. Type and amount of native vegetation.

## **Suisun City Drainage and Stormwater Quality Standards**

Suisun City is a participant in the FSURMP (described above); therefore, project applicants are required to design and engineer stormwater drainage systems in compliance with the FSURMP’s *Stormwater C.3 Guidebook* (FSURMP 2012). In addition, the City encourages applicants for new and redevelopment projects to review and incorporate the following guidance from the Bay Area Stormwater Management Agencies Association (BASMAA): *Start at the Source: Design Guidance Manual for Stormwater Quality Protection* (BASMAA 1999), and *Using Site Design Techniques to Meet Development Standards for Stormwater Quality* (BASMAA 2003).

## **Suisun City Green Stormwater Infrastructure Plan**

In 2019, Suisun City adopted a *Green Stormwater Infrastructure Plan* (GSI Plan) (City of Suisun City 2019). The MS4 Permit issued by the San Francisco Bay RWQCB (discussed above) requires permittees to develop and implement long-term GSI Plans for the inclusion of GSI measures into storm drain infrastructure on public and private property and in the right-of-way, including streets, roads, parking lots, and alleys. "Green Stormwater Infrastructure" refers to the construction and retrofit of storm drainage to reduce runoff volumes, disperse runoff to vegetated areas, harvest and use runoff where feasible, promote infiltration and evapotranspiration, and use bioretention and other natural systems to detain and treat runoff before it reaches creeks and the Bay. Green Stormwater Infrastructure facilities include, but are not limited to, bioretention facilities or "rain gardens," pervious pavement, infiltration features, and rainwater harvesting systems. The GSI Plan demonstrates the City's

long-term commitment to GSI implementation to reduce pollutants of concern, in particular PCBs and mercury, discharged to local waterways (per MS4 Permit requirements). The GSI Plan describes how the City will gradually integrate GSI features into its urban landscape over several decades, with a particular focus on retrofit and redevelopment projects. The Project Site is located in an area identified by the plan for implementation of Decentralized BMPs, which drain small areas and infiltrate runoff or attenuate pollutants near their source. Examples include (but are limited to) bioretention, infiltration features, or permeable pavement.

The MS4 Permit also requires that the GSI Plan include general design and construction guidelines, including standard specifications and details (or references to those documents), for incorporating GSI components into projects within the City. The GSI Plan incorporates (in Appendix B) the *Green Stormwater Infrastructure Design Guidebook* (Design Guidebook) developed by the cities of Fairfield, Suisun City, and Vallejo to reflect the best local and national GSI planning and design practices. The Design Guidebook is a tool for identifying and incorporating green stormwater infrastructure into the built environment. The Design Guidebook is organized to identify the green stormwater infrastructure integration opportunities within the cities of Fairfield, Suisun City, and Vallejo.

### **Suisun City Floodplains and Flood Damage Prevention Ordinance**

Chapter 15.08, Article I of the Suisun City Municipal Code defines and regulates construction in floodplains. The Project Site is located within two of the City's three designated floodplain (FP) zones: (1) the secondary FP-2 zone, which applies to properties lying within inundation areas affected by overflow and backwater, but relatively free of any current and excluding FP-1 zones<sup>5</sup>; and (2) the City's tertiary FP-3 floodplain zone, which applies to flood-prone areas that are protected by levees. Within FP-2 zones, the ground-floor level of buildings, structures, and uses must be constructed above the flood profile level as determined by the City Engineer.

Section 15.08.070 states that buildings or structures may not be constructed, erected, converted, altered, enlarged in the primary FP-1 floodplain zone, or relocated within that zone, and no other conditions will be allowed that would tend to cause stream-channel alteration or adversely affect the carrying capacity of a designated floodway, so as to constitute a threat to life and property.

Chapter 15.08, Article II, Flood Damage Prevention, is intended to minimize public and private losses due to flood conditions. It contains methods and provisions for:

- A. Restricting or prohibiting uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities;
- B. Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- C. Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters;
- D. Controlling filling, grading, dredging, and other development which may increase flood damage; and

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<sup>5</sup> The FP-1 zone consists of a stream channel and its immediate associated floodplain.

- E. Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.

Section 15.08.370 requires application for a development permit for construction in FEMA flood zones, with approval by the City's floodplain administrator. The permit application must include plans showing:

1. Location, dimensions, and elevation of the area in question, existing or proposed structures, storage of materials and equipment and their location;
2. Proposed locations of water supply, sanitary sewer, and other utilities;
3. Grading information showing existing and proposed contours, any proposed fill, and drainage facilities;
4. Location of the regulatory floodway when applicable;
5. Base flood elevation;
6. Proposed elevation in relation to mean sea level, of the lowest floor (including basement) of all structures; and
7. Proposed elevation in relation to mean sea level to which any nonresidential structure will be floodproofed.

The permit application must also include certification from a registered civil engineer or architect that the nonresidential floodproofed building meets the City's floodproofing criteria ( Section 15.08.430[B]), and must include a description of the extent to which any watercourse will be altered or relocated as a result of the proposed development.

Section 15.08.420 requires that within FEMA flood zones AH or AO, adequate drainage paths must be provided around structures on slopes to guide floodwaters around and away from proposed structures.

### **4.8.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

#### **METHODOLOGY**

Potential impacts related to hydrology and water quality were evaluated based on a review of (1) available information regarding watersheds, surface waters, groundwater, flooding hazards, and stormwater control and treatment requirements in the Project area; and (2) the *Draft Drainage Master Plan* prepared for the proposed Project by Morton and Pitalo (2021). The information obtained from these sources was reviewed and summarized to document existing conditions and to identify the potential environmental effects of the proposed Project.

#### **THRESHOLDS OF SIGNIFICANCE**

Based on Appendix G of the CEQA Guidelines, the proposed Project would have a significant impact related to hydrology and water quality if it would:

- ▶ violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water 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 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;
- ▶ in flood hazard, tsunami, or seiche zones, 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.

For potential water quality impacts to surface water and groundwater resources related to hazardous materials, please see Section 4.7, “Hazards and Hazardous Materials.” Please see Section 4.3, “Biological Resources,” for impacts related to the proposed Managed Open Space area, including impacts related to carrying out biological resources mitigation in the proposed Managed Open Space area.

## IMPACT ANALYSIS

**Impact 4.8-1: Violate Water Quality Standards or Substantially Degrade Surface or Groundwater Quality.** *Buildout of the proposed Development Area would convert approximately 93 acres of undeveloped land used for cattle grazing to logistics and warehouse uses, resulting in a change in the types of pollutants, and a potential increase in the amount of pollutants to receiving water bodies. Pollutants from construction and operation at the Project Site, and from construction of the off-site improvements, could result in adverse changes to the water quality of local water bodies and could conflict with the Basin Plan. However, with implementation of grading, erosion control, and municipal and industrial stormwater pollutant laws, regulations, and permit conditions; and compliance with the Suisun Marsh Protection Plan, this impact would be **less than significant**.*

As part of the proposed Project, approximately 93 acres of existing cattle grazing land would be converted to urban development in the form of new urban (e.g., logistics and warehouse) land uses. In addition, off-site improvements related to roadways, water lines, and a sewer line are also proposed.

As indicated in Table 4.8-2, several streams adjacent to and downstream of the Project Site and the off-site improvement areas are included on the SWRCB’s 303(d) list of impaired water bodies for a variety of pollutants such as pesticides, salinity, total dissolved solids, chlorides, and PCBs (among others). These streams include Ledgewood Creek, Suisun Marsh wetlands, and Suisun Bay (SWRCB 2022a).

Buildout of the proposed Development Area could affect long-term water quality by adding impervious surfaces and additional urban stormwater runoff. New development has the potential to alter the types, quantities, and

timing of contaminant discharges in stormwater runoff. Changes to a more developed state, if not properly managed, can adversely affect water quality. Sediment, trash, organic contaminants, nutrients, trace metals, and oil and grease compounds are common urban runoff pollutants that can degrade receiving water quality. Sources of these pollutants may be erosion from disturbed areas, deposition of atmospheric particles derived from automobiles or industrial sources, corrosion or decay of building materials, rainfall contact with toxic substances, and accidental spills of toxic materials on surfaces that receive rainfall and generate runoff. Specifically, sources of sediment from urban development include roads and parking lots, as well as destabilized landscape areas, streambanks, unprotected slopes, and disturbed areas where vegetation has been removed during the grading process. Sediments, in addition to being contaminants in their own right, transport other contaminants, such as trace metals, nutrients, and hydrocarbons that adsorb to suspended sediment particles. New development can generate urban runoff from parking areas, as well as any areas of hazardous materials storage exposed to rainfall.

Urban contaminants typically accumulate during the dry season and may be washed off when adequate rainfall returns in the fall to produce a “first flush” of runoff. The amount of contaminants discharged in stormwater drainage from developed areas varies based on a variety of factors, including the intensity of urban uses such as vehicle traffic, types of activities occurring (e.g., office, commercial, industrial), types of contaminants used at a given location (e.g., pesticides, herbicides, cleaning agents, petroleum byproducts), contaminants deposited on paved surfaces, and the amount of rainfall.

Long-term operational discharges of urban contaminants into the stormwater drainage system and ultimate receiving waters would increase with the buildout of the proposed Development Area, compared to existing conditions. The major factor in this increase is the added amount of impervious surfaces, primarily taking the form of parking lots, driveways, streets, rooftops, and sidewalks. In addition, the presence of additional urban land uses that use potential pollutants (e.g., cleaning agents, pesticides, oil) could result in discharges if there is improper storage, application, and/or disposal. The Alviso, Pescadero, and Sycamore soils in the proposed Development Area and the off-site improvement areas are classified as hydrologic Groups C and D, which have slow to very slow permeability rates and therefore have a high to very high stormwater runoff potential, respectively. New impervious surfaces associated with new development would result in an associated increase in urban stormwater runoff, which can be a source of surface water pollution.

Several existing regulations would apply to the proposed Development Area that would reduce or avoid impacts related to long-term erosion, sedimentation, and water quality degradation. To receive a building permit from the City, a grading and drainage plan must be submitted to the Department of Public Works that must incorporate stormwater pollution control, as well as storm drainage design features to control increased runoff from the Project Site. As described in Section 4.8.2, the City’s Grading, Erosion Control, and Creekside Development Ordinance requires implementation of BMPs where a discharge has the potential to cause or contribute to pollution or contamination of stormwater, the City’s storm drainage system, or receiving waters. Receiving waters include both groundwater and surface water. Groundwater quality can be affected either by direct contact during construction-related earthmoving activities, or by indirect contact as a result of percolation of stormwater. Earthmoving activities that could encounter groundwater during the construction process are issued permits by the San Francisco Bay RWQCB through the Project-specific permitting process; the permits contain provisions (in form of permit terms and conditions) that are specifically intended to protect groundwater quality. Protection of groundwater quality from operational stormwater percolation is accomplished through implementation of the MS4 permit (discussed below).

Projects that disturb more than 1 acre of land must comply with the requirements in the SWRCB General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order WQ 2022-0057-DWQ) (Construction General Permit). Through the NPDES and WDR process, SWRCB seeks to ensure that the construction and post-construction conditions at a project site do not cause or contribute to direct or indirect impacts on water quality. The Construction General Permit requires preparation and implementation of a SWPPP with associated BMPs that are specifically designed to reduce construction-related erosion, sedimentation, and pollutant transport. The Construction General Plan includes a numeric, two-part, risk-based analysis process. It also identifies the need to address changes in the hydrograph, defined as hydrograph modification or hydromodification, which could result from urbanization of a watershed, and requires LID controls to more closely mimic the pre-developed hydrologic condition.

Under the NPDES MS4 Phase II General Permit for stormwater discharge, the cities of Fairfield and Suisun City have joined together to develop and implement the FSURMP, which is intended to reduce or eliminate pollutants discharged from the urban environment into storm drains, local creeks, and the Suisun Marsh as required by the San Francisco Bay RWQCB. Development projects within the City of Suisun City are required to address stormwater quality during development review. Projects must use BMPs during construction to reduce impacts from construction work, and also during project operation to reduce post-construction impacts to water quality. Long-term water quality impacts must be reduced using site design and source control measures to help keep pollutants out of stormwater. Details related to these requirements are contained in the FSURMP's *Stormwater C.3 Guidebook* (FSURMP 2012). Stormwater design for new projects is also required to consider guidance contained in the BASMAA publications 1999. *Start at the Source: Design Guidance Manual for Stormwater Quality Protection* and *Using Site Design Techniques to Meet Development Standards for Stormwater Quality* (BASMAA 1999, 2003).

New development projects are also required to demonstrate compliance with the City's *Green Stormwater Infrastructure Plan* and the associated *Green Stormwater Infrastructure Design Guidebook* (City of Suisun City 2019), which include general design and construction guidelines, and standard specifications and details. The FSURMP requires that project must treat the permit-specified amount of stormwater runoff with LID methods such as rainwater harvesting and use, infiltration, evapotranspiration, or biotreatment. LID stormwater treatment is also required for projects that include 5,000 square feet or more of impervious surfaces from surface parking.

All of these requirements include reduction of post-construction runoff through the incorporation of BMPs, LID, and hydromodification management techniques. These measures to protect water quality are intended to support the City's compliance with the *Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin* (San Francisco Bay RWQCB 2023).

Industrial or commercial facilities require appropriate NPDES permits/WDRs, and implementation of BMPs consistent with the *California Stormwater Quality Association (CASQA) Industrial/Commercial BMP Handbook* (CASQA 2019) or its equivalent, including annual reporting of any structural control measures and treatment systems.

For off-site improvements in Caltrans rights-of-way, construction stormwater control and treatment BMPs would be designed and implemented in accordance with the *Construction Site Best Management Practices (BMPs) Manual* (Caltrans 2017), which incorporates the SWRCB's requirements contained in the Caltrans Construction NPDES Permit (SWRCB 2017) and the CWA. To comply with the Caltrans Construction NPDES Permit, a

SWPPP must be prepared and implemented if 1 acre or more of soil would be disturbed; if the disturbance would encompass less than 1 acre, a WPCP must be implemented. Operational stormwater control for off-site improvements in Caltrans rights-of-way would be regulated by the Caltrans Operational NPDES Permit (SWRCB 2022b), and must incorporate the requirements of Caltrans' *Storm Water Quality Handbooks, Project Planning and Design Guide (PPDG)* (Caltrans 2019). Design and implementation of stormwater control and treatment BMPs as required by the Caltrans BMP Manual and PPDG Handbook would ensure that construction and operation of improvements to Caltrans rights-of-ways would comply with SWRCB NPDES permit requirements to avoid adverse impacts on water quality.

In conclusion, compliance with the above-listed regulations, standards, ordinances, and permit terms would require the proposed Project to reduce pollution and runoff generated in the proposed Development Area and the off-site improvements through implementation of operation-related LID technologies, hydromodification management techniques, BMPs, and pretreatment, along with preparation of a SWPPP with associated BMPs designed to control construction-related erosion and pollutants. These measures would protect water quality as required by the San Francisco Bay Basin Plan. In addition, the proposed new development at the Project Site must comply with the requirements of the Suisun Marsh Protection Plan (described above in the Regulatory Framework section), which is designed to protect water quality in the Suisun Marsh. Furthermore, the Solano County Element of the Suisun Marsh Local Protection Program (described above in the Regulatory Framework section) includes development controls that are designed to protect water quality, particularly as related to Ledgewood Creek, which flows through the Project site. These development controls are enforced through a variety of Solano County Ordinances and the Solano County Zoning Code. Though the Project proposes annexation to the City of Suisun City and development consistent with City standards, Ledgewood Creek is regulated by the County through the Suisun Marsh Protection Program – both off-site and on-site.

Compliance with applicable standards, ordinances, and regulations would ensure that development of the proposed 93-acre Development Area and construction and operation of the proposed off-site improvements would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, and this impact would be **less than significant**. (Potential surface water and groundwater quality impacts from existing hazardous materials sites are evaluated in Section 4.7, "Hazards and Hazardous Materials," and would be less than significant.)

### **Proposed Managed Open Space Area**

Most of the approximately 487-acre Project Site is used for cattle grazing, and has been in use as grazing land since at least the 1930s. Approximately 393 acres of the Project Site would be proposed as Managed Open Space and protected in perpetuity with a deed restriction or conservation easement. Existing uses (i.e., cattle grazing) may continue within the Managed Open Space area. As discussed in detail in the "Environmental Setting," a variety of surface water drainage ways are present throughout the Project Site, all of which discharge to Peytonia Slough, Suisun Marsh, and Grizzly/Suisun Bay. Cattle grazing can have adverse effects on water quality from fecal bacterial contamination (such as *E. coli*) and nutrient over-enrichment (particularly nitrogen from urine and feces). In addition, if pastures are grazed too heavily, a loss of plant matter can occur and the soil can become compacted from trampling, both of which may result in increased erosion and sediment transport. However, when properly implemented, BMPs as recommended by local soil and water conservation districts, cooperative agricultural extension services such as U.C. Rangelands, and the U.S. and California Natural Resources Conservation Services, can substantially reduce the potential for water quality degradation. These BMPs fall



under several broad categories, including balancing stocking rates with forage production, distributing grazing and waste across the landscape, managing fertilizer and pesticide applications, and installing fencing to keep cattle away from riparian zones (Tate and Roche 2016). Cattle grazing is an existing condition, and the Project does not propose to expand or increase this activity.

As described in Chapter 3, “Project Description” and Section 4.3, “Biological Resources,” grazing on the Project Site will be planned and managed consistent with (1) the Project’s managed open space strategy and biological resource mitigation requirements, and (2) applicable requirements of the Suisun Marsh Protection Plan and associated BCDC permit conditions. Furthermore, as described in Chapter 3, “Project Description” and Section 4.3, “Biological Resources,” mitigation wetlands are proposed to be constructed within the proposed Managed Open Space area of the Project Site, both within the eastern portion of the Annexation Area and within the proposed Managed Open Space area located south of Cordelia Road in the vicinity of Suisun Marsh. These activities would be required to be consistent with permit conditions stipulated by the U.S. Army Corps of Engineers, San Francisco Bay Regional Water Quality Control Board, and the San Francisco Bay Conservation and Development Commission and will also be required to be consistent with mitigation imposed within Section 4.3 of this EIR, “Biological Resources,” including requirements that would avoid adverse hydrological and water quality impacts. See Section 4.3 for more detail.

**Impact 4.8-2: Substantially Decrease Groundwater Supplies or Interfere with Groundwater Recharge.** *The proposed Project would not include drilling of any new groundwater wells. Development of approximately 66 acres of new impervious surfaces at the approximately 487-acre Project Site would result in a decrease of only approximately 13.5 percent of the existing pervious surfaces that are currently available for groundwater recharge. Therefore, this impact would be **less than significant**.*

Potable water for the proposed new urban development at the Project Site would be supplied by SID. Water supplied by SID for urban uses is obtained from surface water, from Lake Berryessa via the Solano Project (through a contract with the U.S. Bureau of Reclamation). Because the proposed Project would not include drilling new groundwater wells, and because SID would have sufficient surface water supplies to serve the proposed Project through the Second Amendment to the Suisun/Solano Implementation Agreement and Lease Agreement executed in 2022 (Kjeldsen, Sinnock, and Neudeck, Inc. 2022), the proposed Project would not substantially decrease groundwater supplies, and this impact would be **less than significant**.

The Suisun-Fairfield Valley Groundwater Basin is a low priority basin as designated by DWR (2020), and therefore a groundwater sustainability plan is not required nor are there any plans to prepare one. SID considers that the groundwater basin has generally stable groundwater levels (Davids Engineering, Inc. 2018). The new urban infrastructure with impervious surfaces (e.g., buildings, roads, parking areas) in the proposed Development Area would result in a reduction in the amount of rainfall that would otherwise percolate through the soil and result in groundwater recharge. It should be noted that soil in the proposed Development Area is rated by NRCS (2022) as Hydrologic Group C, which has a relatively slow permeability rate. Nevertheless, groundwater recharge within the proposed 93-acre Development Area does currently occur under existing conditions. The proposed Project would result in new impervious surfaces over 66 acres of the approximately 93-acre proposed Development Area. However, the remaining approximately 393 acres of the Project Site would continue to be available for groundwater recharge through rainwater percolation, because this area of the Project Site would be Managed Open Space. The new 66 acres of impervious surfaces would represent only an approximately 13.5

percent decrease in the area available for groundwater recharge at the Project Site. Therefore, the proposed Project would not substantially interfere with groundwater recharge, and this impact would be **less than significant**.

**Impact 4.8-3: Substantially Alter Drainage Patterns or Add Impervious Surfaces Resulting in Increased Erosion or Siltation.** *Construction and grading activities in the Project Site and the proposed off-site improvements could result in excess runoff, soil erosion, and stormwater discharges of suspended solids and increased turbidity. Such activities could mobilize other pollutants from Project construction sites as contaminated runoff to on-site and ultimately off-site drainage channels, which could degrade existing water quality. Construction activities that are implemented without proper controls could violate water quality standards or cause direct harm to aquatic organisms. However, with implementation of grading, erosion control, and stormwater pollutant laws, regulations, and permit conditions; and compliance with the Suisun Marsh Protection Plan, this impact would be **less than significant**.*

### **Proposed Development Area and Off-Site Improvements**

Ground disturbance associated with construction activities in the approximately 93-acre proposed Development Area and the proposed off-site improvements could increase erosion and sedimentation that could result in degradation of waterways and conflict with beneficial uses, water quality objectives, and standards established in the San Francisco Bay Basin Plan. In addition, accidental spills of construction-related contaminants (e.g., fuels, oils, paints, solvents, cleaners, concrete) could also occur during construction, thereby degrading water quality. Construction dewatering also has the potential to impact water quality if proper dewatering procedures are not followed and water is improperly stored and disposed of (and treated prior to discharge, if necessary).

Many construction-related wastes have the potential to degrade existing water quality and beneficial uses by altering the dissolved oxygen content, temperature, pH, suspended-sediment and turbidity levels, or nutrient content, or by causing toxic effects in the aquatic environment. Development within the approximately 93-acre proposed Development Area and the proposed off-site improvements would include substantial earth-disturbing activities (i.e., cut and fill, vegetation removal, grading, trenching, movement of soil) that could expose disturbed areas and stockpiled soils to winter rainfall and stormwater runoff. Most of the proposed Development Area and the off-site improvement areas are composed of Hydrologic Group C and D soils, which have a slow to very slow infiltration rate and a therefore a high to very high stormwater runoff rate, respectively (see Table 4.7-1 in Section 4.5, “Geology, Soils, Minerals, and Paleontological Resources”). Furthermore, areas of exposed or stockpiled soils could be subject to wind or water erosion, allowing temporary discharges of sediment into the storm drain system, and ultimately to Pennsylvania Ave Creek, Ledgewood Creek, Peytonia Slough, and Suisun Marsh.

Several existing regulations as described above in Section 4.8.2, “Regulatory Framework,” would apply to the proposed Development Area and the off-site improvement areas and would be implemented to reduce or avoid impacts related to erosion, sedimentation, and water quality degradation during construction. For example, Chapter 15.12 of the Suisun City Municipal Code addresses erosion and sediment control under the City’s Grading Ordinance. Project applicants must obtain grading permits that include submittal of an erosion, sediment, and runoff control plan, which includes the land treatment, structural measures, and timing requirements that would be implemented at the Project Site to effectively minimize soil erosion and sedimentation. The runoff control plan must also indicate the calculated runoff from the site under pre- and post-development conditions, using City drainage standards. The runoff control plan must demonstrate that peak runoff from the site would not increase after development and must include all necessary measures to ensure this result to the satisfaction of the City engineer. In addition, Suisun City Municipal Code Chapter 15.12, Sections 15.12.100 through 15.12.230,

contain a suite of measures that must be implemented at the Project Site which are specifically designed to control erosion and sediment transport, and protect water quality during construction. Suisun City is a participant in the Suisun Marsh Local Protection Plan, and the above sections in the City's Municipal Code, along with a variety of Suisun City General Plan Policies listed previously (such as PHS-5.1, OSC-3.4, among others) that are implemented through existing regulations would reduce construction-related erosion and protect water quality downstream in the Suisun Marsh.

Projects that disturb more than 1 acre of land must comply with the requirements in the SWRCB *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Order WQ 2022-0057-DWQ) (SWRCB 2022b). The SWRCB general permit contains a numeric, two-part, risk-based analysis process. It also identifies the need to address hydromodification (stream channel modification and alterations in the natural hydrology of a watershed that result from changes in land cover/land use), and requires LID controls to more closely mimic the pre-developed hydrologic condition. The SWPPP must include a site map and a description of construction activities, and must identify the BMPs that will be employed to prevent soil erosion and discharge of other construction-related pollutants. In Suisun City, project applicants are required to comply with the FSURMP's *Stormwater C.3 Guidebook* (FSURMP 2012). In addition, the City encourages applicants for new and redevelopment projects to review and incorporate the following guidance from the BASMAA: *Start at the Source: Design Guidance Manual for Stormwater Quality Protection* (BASMAA 1999), and *Using Site Design Techniques to Meet Development Standards for Stormwater Quality* (BASMAA 2003). Implementing the treatment and preventative measures contained in these publications, as required by the City during the permitting process, would ensure that appropriate BMPs for erosion and sediment control relating to construction activities and stormwater runoff (such as mulch, re-seeding, straw wattles, check dams, sediment traps, silt fencing, sediment basins, placement of rip rap under drain outfalls, and stabilizing construction entrances and exits) are implemented. A SWPPP must also identify the BMPs that will be employed to prevent soil erosion and discharge of other construction-related pollutants, such as petroleum products, solvents, paints, and cement, that could contaminate nearby water resources. All NPDES permits also have inspection, monitoring, and reporting requirements to ensure that BMPs are implemented according to the SWPPP and are effective at controlling discharges of stormwater-related pollutants. Source controls, treatment controls, and site planning measures are typical types of BMPs. The general permit also requires dischargers to consider the use of post-construction permanent BMPs that would remain in service to protect water quality throughout the life of the project.

For off-site improvements in Caltrans rights-of-way, construction stormwater control and treatment BMPs would be designed and implemented in accordance with the *Construction Site Best Management Practices (BMPs) Manual* (Caltrans 2017), which incorporates the SWRCB's requirements contained in the Caltrans Construction NPDES Permit (SWRCB 2017) and the CWA. To comply with the Caltrans Construction NPDES Permit, a SWPPP must be prepared and implemented if 1 acre or more of soil would be disturbed; if the disturbance would encompass less than 1 acre, a WPCP must be implemented. Design and implementation of stormwater control and treatment BMPs as required by the Caltrans BMP Manual would ensure that construction of improvements to Caltrans rights-of-ways would comply with SWRCB NPDES permit requirements to avoid adverse impacts on water quality.

Construction dewatering would require a Project-specific permit from the San Francisco Bay RWQCB and consultation to determine the specific permit terms, disposal methods, and/or the types of treatment in the case of contaminated soil or groundwater. Adherence to permit terms would reduce potential water quality degradation resulting from construction dewatering activities. Compliance with of the regulatory controls discussed above,

which include implementation of a SWPPP with site-specific BMPs, preparation of a SWPPP or WPCP with associated construction and operation BMPs for off-site improvements in Caltrans rights-of-way, Suisun City Municipal Code requirements and the Suisun Marsh Local Protection Plan, and the FSURMP's *Stormwater C.3 Guidebook*, would appropriately control erosion and sedimentation from alteration of drainages in the proposed Development Area and the proposed off-site improvement areas. Therefore, this impact would be **less than significant**.

### **Proposed Managed Open Space Area**

Drainage patterns would not be substantially altered in the proposed Managed Open Space Area because the Project proposes long-term open space management of this area, and no development is proposed. Furthermore, as discussed in detail in Impact 4.8-1, activities related to wetlands mitigation will be required to be consistent with permit conditions stipulated by the U.S. Army Corps of Engineers, San Francisco Bay Regional Water Quality Control Board, and the San Francisco Bay Conservation and Development Commission and will also be required to be consistent with mitigation imposed within Section 4.3 of this EIR, "Biological Resources," including requirements that would avoid adverse hydrology and water quality impacts. See Section 4.3 for more detail. Potential impacts related to erosion and siltation in the Managed Open Space area from alteration of existing drainages would be **less than significant**.

**Impact 4.8-4: Substantially Alter Drainage Patterns or Add Impervious Surfaces that would Exceed Storm Drainage Systems, Result in Increased Flooding, or Impede or Redirect Flood Flows.** *Buildout of the proposed Project would increase the amount of impervious surfaces, thereby increasing surface runoff. This increase in surface runoff would result in an increase in both the total volume and the peak discharge rate of stormwater runoff, and therefore could result in greater potential for erosion, sedimentation, hydromodification, and on- and off-site flooding. Furthermore, proposed on-site and off-site development would be located within FEMA 100-year floodplains, and therefore could impede or redirect flood flows. However, through required compliance with stormwater and floodplain laws, regulations, and permit conditions, this impact would be less than significant.*

### **Proposed Development Area and Off-Site Improvements**

Buildout of the proposed Development Area and the off-site improvements would include development of new impervious surfaces on undeveloped land. The addition of approximately 66 acres of new impervious surfaces in the proposed approximately 93-acre Development Area would increase the peak discharge rate of stormwater runoff and could result in erosion, sedimentation, and on-site or downstream flooding. Increased peak flow rates have the potential to exceed drainage system capacities, exacerbate erosion in overland flow and drainage swales and creeks, and result in downstream sedimentation. Sedimentation, in turn, could increase the rate of deposition in natural receiving waters and reduce conveyance capacities, resulting in an increased risk of flooding. Erosion of upstream areas and related downstream sedimentation typically leads to adverse changes to water quality and hydrology.

The City's Regulatory Floodplain includes FEMA's 100-year flood hazard zones. The addition of impervious surfaces and drainage infrastructure from urbanization results in increased runoff volumes and dry weather flows, increased frequency and number of runoff events, and increased long-term cumulative duration of flows, as well as increased peak flows. Exhibit 4.8-2 shows the proposed land uses in the proposed Development Area in relationship to the FEMA floodplain classifications. All of the proposed Development Area is within a FEMA

100-year floodplain hazard area. Most of the proposed Development Area is within Zone AO; the proposed Development Area east of Pennsylvania Avenue is classified as Zone AE.

Under the NPDES MS4 Phase II General Permit for stormwater discharge, project applicants must comply with the FSURMP to protect and improve stormwater quality. The FSURMP requires that measures for long-term BMPs that protect water quality and control runoff flow be incorporated into new development and substantial redevelopment projects. The proposed Project is required to design and implement water quality and runoff controls per the FSURMP's *Stormwater C.3 Guidebook* (FSURMP 2012). In addition, the City encourages applicants for new and redevelopment projects to review and incorporate the following guidance from the BASMAA: *Start at the Source: Design Guidance Manual for Stormwater Quality Protection* (BASMAA 1999), and *Using Site Design Techniques to Meet Development Standards for Stormwater Quality* (BASMAA 2003). These publications contain site-specific design and treatment measures that can be implemented at project sites to reduce post-construction runoff and control urban runoff pollution in compliance with of the MS4 permit through the incorporation of BMPs, LID, and hydromodification management techniques. This includes the requirement to treat stormwater runoff through evapotranspiration, infiltration, stormwater harvesting and reuse, or biotreatment. Hydromodification management requires regulated projects to slow and minimize the amount of runoff so that there is no net-increase in post-construction runoff flow rate compared to the pre-construction value. In addition, a SWPPP would be required in compliance with the NPDES Construction General Permit and would include BMPs to avoid construction-related erosion and sedimentation on- or off-site.

As also required by the MS4 Permit, the City has adopted a GSI Plan that includes general design and construction guidelines, including standard specifications and details, for incorporating GSI components into projects within the City. The GSI Plan incorporates (in Appendix B) the Design Guidebook developed by the cities of Fairfield, Suisun City, and Vallejo to reflect the best local and national GSI planning and design practices. The Project Site is located in an area identified by the plan for implementation of Decentralized BMPs, which drain small areas and infiltrate runoff or attenuate pollutants near their source. Examples include (but are not limited to) bioretention, infiltration features, or permeable pavement.

Operational stormwater control for off-site improvements in Caltrans rights-of-way would be regulated by the Caltrans Operational NPDES Permit (SWRCB 2022c), and must incorporate the requirements of Caltrans' *Storm Water Quality Handbooks, Project Planning and Design Guide (PPDG)* (Caltrans 2019).

The City's Creekside Development Ordinance (Suisun City Municipal Code Title 15, Chapter 15.12, Section 15.12.230) requires that whenever development is proposed for an area within 300 feet of the centerline of a designated watercourse, a detailed plan of the proposed development must be submitted to the City for approval. The plan must include the proposed placement of drainage outflows and associated drainage facilities, which must be designed so as to eliminate or minimize increases in the rate and amount of stormwater discharge.

In all areas of special flood hazards, including the Project Site, the standards set forth in the City's Floodplains and Flood Damage Prevention Ordinance (Municipal Code Chapter 15.08, Article II) Sections 15.08.410 through 15.08.470 are required. The standards control filling, grading, dredging, and other development which may increase flood damage; and prevent or regulate the construction of flood barriers that would unnaturally divert flood waters or which may increase flood hazards in other areas. Per Municipal Code Section 15.08.370, the project applicant must apply for a development permit for construction in FEMA flood zones, with approval by the City's floodplain administrator. The permit application must include plans showing elevations of proposed

structures and the elevations of areas proposed for materials and equipment storage; the proposed elevation in relation to mean sea level, of the lowest floor (including basement) of all structures; and the proposed elevation in relation to mean sea level to which any nonresidential structure will be floodproofed (among other requirements). The permit application must also include certification from a registered civil engineer or architect that the nonresidential floodproofed building meets the City's floodproofing criteria ( Section 15.08.430[B]). Per Suisun City Ordinance No. 729, Section 15-08.430, the lowest floor of each building must be elevated above the highest adjacent grade to a height equal to or exceeding the depth number specified in feet on the FEMA FIRM plus one-half-foot of freeboard. As stated in the Master Drainage Plan, the Project's finished floor grades would meet these specifications as required by the City Ordinance (Morton and Pitalo 2021). Municipal Code Section 15.08.420 also requires that within FEMA flood zones AH or AO (which includes most of the proposed Development Area), adequate drainage paths must be provided around structures on slopes to guide floodwaters around and away from proposed structures.

The Project applicant has prepared a Drainage Master Plan (Morton and Pitalo 2021) (Appendix D). Drainage from proposed building roofs and parking lots would be routed into bioretention facilities for infiltration and treatment prior to discharge to the on-site detention basins. The proposed drainage plan is shown in Exhibit 3-7 in Chapter 3, "Project Description." The Drainage Master Plan demonstrates a "decentralized" approach that is consistent with the City's *Green Stormwater Infrastructure Design Guidebook* (discussed above in the Regulatory Framework section). The bottom of the on-site detention basins would also be constructed as a bioretention facility. The inlet pipes to the detention basins would likely be below the gravity discharge elevation. Therefore, a storm drain lift station would be installed at each basin location prior to discharge to the public main or existing drainage ditch/channel. LID features may include disconnected roof drains and disconnected pavement. The proposed on-site detention basin volumes are based on the 100-year, 24-hour storm event with outflows restricted to 95 percent of pre-development flows or less (as required by the City). The Drainage Master Plan demonstrates incorporation of stormwater design and treatment measures for the proposed Development Area as required by the FSURMP *Stormwater C.3 Guidebook* (FSURMP 2012). The Drainage Master Plan includes hydraulic, floodplain, hydrologic, and water quality analyses for the proposed development. The modeling results contained in the Drainage Master Plan demonstrate that the proposed Project as designed, includes appropriate stormwater runoff design features, properly sized stormwater drainage features, and appropriate stormwater quality treatment features so that the new impervious surfaces would not increase peak discharge rate of stormwater runoff and would not result in erosion, sedimentation, and on-site or downstream flooding. Furthermore, Appendix H to the Drainage Master Plan includes a Stormwater Control Plan that would be implemented at the Project Site. A Stormwater Control Operation and Maintenance Plan would be submitted to the City for approval along with the Project's construction drawings. The Master Drainage Plan demonstrates compliance with all of the regulatory controls and requirements discussed above. Therefore, although new development in the proposed Development Area would alter drainage patterns and add impervious surfaces, the new development would not exceed storm drainage system capacity, result in increased flooding, or impede or redirect flood flows, and this impact would be **less than significant**.

### **Proposed Managed Open Space Area**

Drainage patterns would not be altered in the proposed managed open space area because no development would occur. Minor grading in the Managed Open Space Area related to the creation of new wetlands would have no effect on flood flows or storm drainage systems. Furthermore, as discussed in detail in Impact 4.8-1, activities related to wetlands mitigation will be required to be consistent with permit conditions stipulated by the U.S. Army

Corps of Engineers, San Francisco Bay Regional Water Quality Control Board, and the San Francisco Bay Conservation and Development Commission and will also be required to be consistent with mitigation imposed within Section 4.3 of this EIR, “Biological Resources,” including requirements that would avoid adverse hydrology and water quality impacts. See Section 4.3 for more detail. The proposed activities within the Managed Open Space area would not alter drainage patterns or add impervious surfaces that would exceed storm drainage systems, result in increased flooding, or impede or redirect flood flows, and there would be **no impact**.

**Impact 4.9-5: Risk Release of Pollutants from Inundation in a Tsunami, Seiche, or Flood Hazard Zone.** *Construction materials would be temporarily stored in FEMA flood zones and in Suisun City-designated flood zones. However, because the City’s floodplain administrator must review and approve all plans for materials storage in a flood zone, and may impose permit conditions such as installation of a temporary dike or berm to protect construction storage areas as appropriate, this impact would be less than significant.*

The Project Site and the proposed off-site improvement areas are not in a tsunami inundation zone (California Emergency Management Agency et al. 2022). The nearest large waterbody with potential for seiche is Grizzly Bay/Suisun Bay, approximately 6.5 miles south of the Project Site and the off-site improvement areas, and approximately 10 feet lower in elevation; therefore, the potential for inundation of Project-related construction storage areas from a seiche is low.

Construction activities within the approximately 93-acre proposed Development Area and the proposed off-site improvement areas could result in short-term, temporary storage of materials in FEMA flood hazard zones AO and AE, designated as the city’s secondary FP-2 and tertiary FP-3 floodplain zones, respectively. Inundation of temporary construction material storage areas during a flood could result in downstream transport of pollutants, thereby degrading water quality. However, development in flood zones is subject to the Suisun City Flood Damage Prevention Ordinance (Suisun City Municipal Code, Chapter 15.08, Article II), and requires a permit from the city’s floodplain administrator. The permit application must include plans illustrating the location(s) that are designated for temporary construction-related storage of materials and equipment, which the City’s floodplain administrator must review and approve. The floodplain administrator may require the construction of temporary berms or dikes around the construction materials/equipment storage areas, to ensure sufficient protection from flood flows, if warranted.

Because the City’s floodplain administrator would review and approve all planned locations for storage of construction materials and equipment, and would impose appropriate permit terms and conditions such as the requirement for installation of temporary berms or dikes around storage areas if necessary, this impact is considered **less than significant**.

**Impact 4.8-6: Conflict with a Water Quality Control Plan or Sustainable Groundwater Management Plan.** *Compliance with existing laws, regulations, ordinances, and policies related to water quality control ensures that the Project would not conflict with a water quality control plan. There is no groundwater sustainability plan for the groundwater basin within which the Project Site is located, and since the proposed Project would not involve drilling of new groundwater wells and would result in only a 13.5 percent reduction in pervious surfaces available for groundwater recharge, the Project would not substantially reduce groundwater sustainability in the Suisun-Fairfield Valley Groundwater Basin and this impact would be less than significant.*

For the reasons described in Impact 4.8-1 above, the Project’s compliance with existing laws, regulations, ordinances, and policies related to water quality control, which are required by law, ensures that the proposed

Project would not conflict with the *Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin* (San Francisco Bay RWQCB 2023). As described in Impact 4.8-2 above, a groundwater sustainability plan for the Suisun-Fairfield Valley Groundwater Basin is not required nor are there any plans to prepare one; therefore, the proposed Project would not conflict with a sustainable groundwater management plan. As further described in Impact 4.8-2, because there are no plans to drill a new groundwater well for water supply, and because the proposed Project would only result in an approximately 13.5 percent reduction in pervious surfaces that provide for existing groundwater recharge at the Project Site, the proposed Project would not substantially decrease groundwater supplies or interfere with groundwater recharge, and therefore would not substantially reduce groundwater sustainability in the Suisun-Fairfield Valley Groundwater Basin. Therefore, this impact would be **less than significant**.