3.8 - Hydrology and Water Quality

3.8.1 - Introduction

This section describes the existing hydrology and water quality setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on a Hydrologic and Water Quality Modeling prepared by Balance Hydrologics provided in Appendix G. Additional information was obtained through site reconnaissance, review of project plans, and review of resources, including the Suisun City General Plan, the California Department of Water Resources Bulletin 118, the Clean Water Act 303(d) list, and the Western Regional Climate Center.

3.8.2 - Environmental Setting

Climate and Meteorology

Suisun City is characterized by an inland Mediterranean climate with hot summers, mild winters, and moderate precipitation. Temperatures in Suisun City range from an average low of 37.6°F (degrees Fahrenheit) in January to an average high of 89°F in July. Average annual precipitation is 22.68 inches, with the majority of rainfall occurring between November and March. General meteorological data for the Suisun City area, as measured at the Fairfield weather station, are presented in Table 3.8-1.

Table 3.8-1: Suisun City Meteorological Summary

Month	Temperature (°F)		Precipitation (inches)
	Average Low	Average High	
January	37.6	55.4	4.77
February	41.1	61.5	4.04
March	43.3	65.9	3.09
April	45.8	71.1	1.39
May	50.3	78.0	0.55
June	54.0	84.4	0.17
July	56.0	89.0	0.02
August	56.0	88.8	0.06
September	54.5	86.6	0.24
October	49.8	78.3	1.30
November	42.7	65.4	2.75
December	37.9	56.0	4.3
Annual Average	**47.4**	**73.4**	**22.68**

Notes:
Period of record: December 4, 1950 to May 31, 2016.
Measurements recorded at Fairfield, California weather station (WRCC ID# 042934)
Source: Western Regional Climate Center. 2016.

Regional Hydrology

Solano County mostly consists of level topography of alluvial origin within a portion of the Central Valley. The Vaca Mountains, part of the Coast Ranges, are a prominent feature in the western portion of the county. The major streams in Solano County drain in an easterly or southerly direction from the Vaca Mountains to Suisun Marsh and the San Joaquin-Sacramento River Delta. Suisun City is situated on the north and east banks of Hill Slough, connected to Grizzly Bay by Suisun Slough, which drains to Suisun Bay.

Surface Water Bodies

The project site is within the Union Creek watershed, which drains to Suisun Marsh and ultimately Suisun Bay. Each waterbody is summarized as follows.

Union Creek

Union Creek is a blue line drainage that originates in southern Vacaville. Union Creek meanders to the southeast in a combination of natural channels and man-made channels before entering the Travis Air Force Base grounds. Within the air base, the waterway enters a culvert and emerges in open channel on the south side of the runway and meanders east of the project site to a culvert under State Route 12 (SR-12), and ultimately discharges into Hill Slough within the larger Suisun Marsh.

Suisun Marsh

Suisun Marsh is an approximately 116,000-acre brackish marsh located south of Suisun City and north of Grizzly Bay. The marsh includes approximately 52,000 acres of managed wetlands, 30,000 acres of bays and sloughs, 27,700 acres of uplands, and 6,300 acres of tidal wetlands. Within Suisun Marsh, Hill Slough drains to the south and west into Suisun Slough. Hill Slough is fed by several local creeks, including Laurel Creek, Ledgewood Creek, McCoy Creek, and Union Creek.

Suisun Bay/Grizzly Bay

Suisun Bay is a 25,335-acre shallow estuary located between the Carquinez Strait to the west and the confluence of the Sacramento River and San Joaquin River to the east. Grizzly Bay is a northern sub-embayment of Suisun Bay, which is composed of three main channels that flow east to west toward the Carquinez Strait. The deepest channel flows through the Suisun Cutoff, north of Ryer Island, and along the southern end of Grizzly Bay. All three channels join at the Carquinez Strait, where they continue through to the southern section of San Pablo Bay and into San Francisco Bay.

Impaired Water Bodies

Three downstream waterways—Suisun Marsh, Suisun Slough, and Suisun Bay—are listed on the 303(d) List of impaired waterbodies for various pollutants or stressors.[1] Table 3.8-2 summarizes the 303(d) Listings. As indicated in the table, the pollutants or stressors originate from a variety of sources including urban, resource, foreign, natural, and unknown.

[1] As discussed later in this chapter, Section 303(d) of the federal Clean Water Act (CWA) requires that the California State Water Resources Control Board (State Water Board) identify surface water bodies within California that do not meet established water quality standards. Once identified, the affected water body is included in the State Water Board's "303(d) Listing of Impaired Water Bodies"; and a comprehensive program must then be developed to limit the amount of pollutant discharges into that water body.

Table 3.8-2: Impaired Water Body Summary

Water Body	Pollutant/Stressor	Source(s)
Suisun Marsh	Mercury	Urban Runoff/Storm Sewers, Flow Regulation/Modification
	Nutrients	Urban Runoff/Storm Sewers, Flow Regulation/Modification
	Organic Enrichment/Low Dissolved Oxygen	Urban Runoff/Storm Sewers, Flow Regulation/Modification
	Salinity/Total Dissolved Solids/Chlorides	Urban Runoff/Storm Sewers, Flow Regulation/Modification
Suisun Slough	Diazinon	Urban Runoff/Storm Sewers
Suisun Bay	Chlorade	Nonpoint Source
	Dichlorodiphenyltrichloroethane (DDT)	Nonpoint Source
	Dieldrin	Nonpoint Source
	Dioxin Compounds	Atmospheric Deposition
	Furan Compounds	Atmospheric Deposition
	Invasive Species	Ballast Water
	Mercury	Resource Extraction, Natural Sources, Industrial Point Sources, Nonpoint Sources, Atmospheric Deposition
	Polychlorinated Biphenyls (PCBs)	Unknown Point Sources, Unknown Nonpoint Sources
	Selenium	Industrial Point Sources, Exotic Species, Natural Sources
Source: California State Water Resources Control Board (State Water Board). 2010.		

Existing Drainage Facilities

Two man-made drainage channels traverse the project site in a north-to-south direction. The channels enter the project site via culverts under Petersen Road and exit the site via culverts under SR-12. The channels ultimately discharge into Suisun Marsh. The channels convey runoff from the residential neighborhood north of the project site. Aside from the channels there are no other storm drainage facilities (e.g., basins, inlets, piping, etc.) within the project site.

Groundwater

Groundwater levels within the vicinity of the project site range from 6 to 9 feet below the ground surface. Groundwater flow is expected to follow the prevailing grade, which is generally southerly toward Hill Slough. In addition, the groundwater in the project vicinity is tidally influenced.

Existing Well

There is an existing groundwater well in the southern portion of the project site. The well is powered by a wind pump.

100-year Flood Hazard Areas

Exhibit 3.8-1 depicts the flood hazard areas within the project site. As shown in the exhibit, 100-year flood hazard areas are present within the lowest lying parts of the project site along Union Creek and SR-12.

Dams

Solano County General Plan Figure HS-3 indicates that the southern portion of the project site is within the hypothetical dam failure inundation area of Lake Curry reservoir in Napa County. Lake Curry, owned and operated by the City of Vallejo, is impounded by an earthen dam on Suisun Creek in the Vaca Mountains. The dam was constructed in 1926 and the reservoir has a maximum storage capacity of 10,700 acre-feet. The reservoir is not currently used for municipal purposes; water from Lake Curry is discharged into Suisun Creek for instream flow.

3.8.3 - Regulatory Framework

Federal

Clean Water Act

Section 303 of the Clean Water Act (CWA) requires states to adopt water quality standards for all surface waters of the United States. Water quality standards are typically numeric, although narrative criteria based upon biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numerical standards (see description the Porter-Cologne Water Quality Control Act, below). Standards are based on the designated beneficial use(s) of the water body. Where multiple uses exist, water quality standards must protect the most sensitive use.

Section 401 of the CWA requires any person applying for a federal permit or license that may result in the discharge of pollutants into waters of the United States (including wetlands) to obtain a state water quality certification. In California, such certifications are administered by the California State Water Resources Control Board (State Water Board) through the nine Regional Water Quality Control Boards (RWQCBs) (see a description of State regulations below). In order to acquire certification, it must be demonstrated that the activity complies with all applicable water quality standards, limitations, and restrictions. No license or permit by a federal agency may be granted until 401 certifications have been granted. Section 401 water quality certifications are typically required prior to obtaining a Section 404 permit from the United States Army Corps of Engineers (USACE).

Section 402 of the CWA mandates that certain types of construction activity comply with the requirements of National Pollutant Discharge Elimination System (NPDES) stormwater program. In California, any construction activity (apart from certain industrial activities, none of which are proposed for this project) that disturbs at least 1 acre is covered under the Construction General Permit issued by the State Water Board and implemented and enforced by RWQCBs.

Pursuant to Section 402 of the CWA and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), municipal stormwater discharges in the City of Suisun City are regulated under the San Francisco Bay RWQCB Municipal Regional Stormwater NPDES Permit (MRP), MS4 Order No. 2013-0001-DWQ (General Permit). In 1987, Congress amended the CWA to mandate controls on discharges from Municipal Separate Storm Sewer Systems (MS4s). Acting under the federal mandate and the California Water Code, RWQCBs require cities, towns, and counties to regulate activities that can result in pollutants entering their storm drains. All municipalities prohibit non-stormwater discharges to storm drains and require residents and businesses to use Best Management Practices (BMPs) to minimize the number of pollutants in runoff. The MRP is overseen by the San Francisco Bay RWQCB. On February 5, 2013, the State Water Board reissued the Phase II Stormwater NPDES Permit for small MS4s. Provision E.12, "Post-Construction Stormwater Management Program," mandates municipalities to require specified features and facilities—to control pollutant sources, control runoff volumes, rates, and durations, and to treat runoff before discharge from the site—be included in development plans of projects that create or replace 5,000 square feet or more impervious surface as conditions of issuing approvals and permits. The new requirements continue a progression of increasingly stringent requirements since 1989.

Provision E.12 required all municipal permittees to implement these requirements by June 30, 2015, to the extent allowed by applicable law. This included projects requiring discretionary approvals that had not been deemed complete for processing and discretionary permit projects without vesting tentative maps that had not requested and received an extension of previously granted approvals.

In July of 2014, the Bay Area Stormwater Management Agencies Association (BASMAA), through the BASMAA Phase II Committee, created the BASMAA Manual to assist applicants for development approvals to prepare submittals that demonstrate that their project complies with the NPDES permit requirements. Applicants who seek development approvals for applicable projects should follow the manual when preparing their submittals. The manual is designed to ensure compliance with the requirements and promote integrated Low Impact Development (LID) design.

Section E.12.c of the General Permit pertains to LIDs and how they relate to hydromodification management. This Permit provision requires that stormwater discharges not cause an increase in the erosion potential of the receiving stream over the existing condition. Increases in runoff flow and volume must be managed so that the post-project runoff does not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force.

Section 404 of the CWA requires that a permit be obtained from the USACE prior to any activity associated with discharge of dredged or fill material into waters of the United States, including wetlands.

Floodplains

The Federal Emergency Management Agency (FEMA) oversees floodplains and administers the National Flood Insurance Program (NFIP) adopted under the National Flood Insurance Act of 1968. The program makes federally subsidized flood insurance available to property owners within

communities who participate in the program. Areas of special flood hazard (those subject to inundation by a 100-year flood) are identified by FEMA through regulatory flood maps titled Flood Insurance Rate Maps (FIRMs). The NFIP mandates that development cannot occur within the regulatory floodplain (typically the 100-year floodplain) if that development results in more than a 1-foot increase in flood elevation. In addition, development is not allowed in delineated floodways within the regulatory floodplain.

Federal Executive Order 11988 (Floodplain Management) addresses floodplain issues related to public safety, conservation, and economics. It generally requires federal agencies constructing, permitting, or funding a project in a floodplain to do the following:

- Avoid incompatible floodplain development,
- Be consistent with the standards and criteria of the NFIP, and
- Restore and preserve natural and beneficial floodplain values.

Executive Order 11990 requires federal agencies to follow avoidance, mitigation, and preservation procedures, with public input, before proposing new construction in wetlands. It generally requires:

- Avoidance of wetlands,
- Minimization of activities in wetlands, and
- Coordination with the USACE and CWA Section 404 regarding wetlands mitigation.

State

Water Quality Statutes and Regulations

Section 303(d) of the CWA requires that the State Water Board identify surface water bodies within California that do not meet established water quality standards. Once identified, the affected water body is included in the State Water Board's "303(d) Listing of Impaired Water Bodies" and a comprehensive program must then be developed to limit the amount of pollutant discharges into that water body. This program includes the establishment of Total Maximum Daily Loads (TMDLs) for pollutant discharges into the designated water body. The most recent 303(d) listing for California was approved by the United States Environmental Protection Agency (EPA) in 2010.

The Porter-Cologne Act of 1969 authorized the State Water Board to provide comprehensive protection for California's waters through water allocation and water quality protection. The State Water Board implements the requirement of the CWA Section 303, indicating that water quality standards must be set for certain waters by adopting water quality control plans under the Porter-Cologne Act. The Porter-Cologne Act established the responsibilities and authorities of the nine RWQCBs, which include preparing water quality plans for areas in the region, identifying water quality objectives, and issuing NPDES permits and Waste Discharge Requirements (WDRs). Water quality objectives are defined as limits or levels of water quality constituents and characteristics established for reasonable protection of beneficial uses or prevention of nuisance. The Porter-Cologne Act was later amended to provide the authority delegated from the EPA to issue NPDES permits.

Post-construction stormwater controls to satisfy requirements of the NPDES Program are permitted under the Phase II Small Municipal Separate Storm Sewer System (MS4) Permit (Order R2-2015-0049). Facilities must be designed to evapotranspire, infiltrate, harvest/use, and bio treat stormwater. As of July 1, 2016, hydromodification management procedures are required.

Projects disturbing more than 1 acre of land during construction are required to comply with the Construction General Permit (Order No. 2009-0009-DWQ as amended by 2010-0014-DWQ, effective February 14, 2011; NPDES No. CAS000002). Construction General Permit activities are regulated at a local level by the RWQCB pursuant to a general permit. No site-specific authorization is needed. To obtain coverage under the Construction General Permit, a project applicant must provide a Notice of Intent, a Storm Water Pollution Prevention Plan (SWPPP), and other documents required by Attachment B of the Construction General Permit. Activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as grubbing or excavation.

The Construction General Permit uses a risk-based permitting approach and mandates certain requirements based on the project risk level (Level 1, Level 2, or Level 3). The project risk level is based on the risk of sediment discharge and the receiving water risk. The sediment discharge risk depends on project location and timing (such as wet season versus dry season activities). The receiving water risk depends on whether the proposed project would discharge to a sediment-sensitive receiving water. The determination of the project risk level would be made when the Notice of Intent is filed (once more details of the timing of the construction activity are known).

The performance standard in the Construction General Permit is that dischargers minimize or prevent pollutants in stormwater discharges and authorized non-stormwater discharges through the use of controls, structures, and BMPs. A SWPPP must be prepared by a qualified SWPPP developer that meets the certification requirements in the Construction General Permit. The purpose of the SWPPP is (1) to help identify the sources of sediment and other pollutants that could affect the quality of stormwater discharges, and (2) to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity. Operation of BMPs must be overseen by a qualified SWPPP practitioner who meets the requirements outlined in the permit.

Section 1600–1616 of the California Fish and Game Code requires that the California Department of Fish and Wildlife (CDFW) be notified of activity that will: substantially divert or obstruct the natural flow of any river, stream or lake; or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake; or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. If CDFW determines that the activity may substantially adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be prepared that outlines reasonable conditions necessary to protect natural resources threatened by the proposed activity.

Stormwater Guidance Publications

California Stormwater Quality Association (CASQA), a professional organization, has published guidance for stormwater management. The organization's Stormwater Best Management Handbook provides guidance for compliance with State stormwater regulations for construction. CASQA also

published the New Development and Redevelopment Handbook, intended to provide individuals involved in development or redevelopment site water pollution control and planning general guidance for selecting and implementing BMPs to reduce pollutants in runoff in newly developed areas and redeveloped areas to waters of the state. This handbook also provides guidance on developing project-specific stormwater management plans including selection and implementation of BMPs for a particular development or redevelopment project. It provides the framework for an informed selection of BMPs. The handbook does not dictate the use of specific BMPs.

Caltrans also has published a Stormwater Quality Handbook Construction Site Best Management Practices Manual that provides similar guidance for transportation projects.

Local

City of Suisun City

General Plan

The Suisun City General Plan sets forth the following goals and policies relevant to hydrology and water quality:

Goal CFS-8 Provide storm drainage and flood protection systems that protect property, ensure public safety and environmental health, and prevent erosion and flooding.

Objective CFS-8 Maintain adequate storm drainage and plan for phased improvements to drainage infrastructure to serve new growth and address existing deficiencies.

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 areawide drainage facilities that serve additional demand generated by the subject project

Goal PHS-5 Maintain and Improve Water Quality.

Objective PHS-5 Maintain and improve water quality in a way that provides public and environmental health benefits.

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.

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.

Goal PHS-11 Minimize the loss of life and damage to property caused by flood events.

Objective PHS-11 Manage land use change and plan for flood protection in way that is consistent with applicable federal and state guidelines.

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-11.4 The City will require evaluation of potential flood hazards before approving development projects.

Fairfield-Suisun Urban Runoff Management Program

Fairfield-Suisun Sewer District oversees the Fairfield-Suisun Urban Runoff Management Program. The program is intended to reduce or eliminate pollutants discharged from the urban environment into storm drains through inspection, education, and monitoring.

3.8.4 - Methodology

Descriptions and analysis in this section are based on the Hydrologic and Water Quality Modeling prepared by Balance Hydrologics provided in Appendix G as well as site reconnaissance, review of project plans, and review of resources including the Suisun City General Plan, the California Department of Water Resources Bulletin 118, the CWA 303(d) list, and the Western Regional Climate Center. Balance Hydrologics modeled stormwater flows using the USACE Hydrologic System hydrologic model.

3.8.5 - Thresholds of Significance

CEQA Guidelines Appendix G is a sample Initial Study checklist that includes a number of factual inquiries related to the subjects of hydrology and water quality, in addition to a series of other environmental topics. Notably, lead agencies are under no obligation to use these inquiries in fashioning thresholds of significance for these subjects, or on any subject addressed in the checklist. (*Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th 1059, 1068). Rather, with few exceptions, "CEQA grants agencies discretion to develop their own thresholds of significance." (*Id*.) Even so, it is a common practice for lead agencies to take the language from the inquiries set

forth in Appendix G and to use that language in fashioning thresholds. The City has done so here, though it has also relied on professional judgment. Thus, for purposes of this Draft EIR, hydrology and water quality impacts resulting from the implementation of the proposed project would be considered significant if the project would:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

c) Substantially alter the existing drainage pattern of 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 off-site;
   (iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
   (iv) impede or redirect flood flows.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3.8.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the proposed project and provides mitigation measures where appropriate.

Water Quality

Impact HYD-1:	**Construction activities and changes to drainage patterns associated with the proposed project may degrade surface water quality in downstream water bodies.**

Impact Analysis

This analysis assesses the potential for the proposed project to degrade surface water quality in downstream water bodies (Significance thresholds a and c).

The potential for the proposed project to degrade water quality arises from (1) short-term land disturbance from construction activities and presence of contaminants associated with construction machinery, and (2) long-term changes to land use and drainage patterns that may increase the delivery of sediments, nutrients, organic compounds, trash/debris, and other contaminants to waterways tributary to Suisun Marsh. Left unabated, increased loading of such pollutants could

cause geomorphic change in downstream channel reaches, degrade habitat, and undermine TMDL and other water quality requirements.

Construction activities would disturb approximately 120 acres of the project site and include grading, building construction, paving, and utility installation. Construction would require the use of gasoline and diesel-powered heavy equipment, such as bulldozers, backhoes, water pumps, and air compressors. Chemicals such as gasoline, diesel fuel, lubricating oil, hydraulic oil, lubricating grease, automatic transmission fluid, paints, solvents, glues, and other substances could be used during construction. An accidental release of any of these substances could degrade the quality of the surface water runoff and adversely affect receiving waters. As such, Mitigation Measure (MM) HYD-1a is proposed, requiring the development and implementation of a SWPPP to outline site-specific stormwater quality control measures (such as BMPs) during construction activities to prevent pollutants from entering downstream waterways. The various RWQCBs have evaluated the effectiveness of the types of BMPs required by MM HYD-1a and have determined that BMPs are known to be effective in protecting receiving waters[2]. With implementation of MM HYD-1a, impacts would be reduced to a less than significant level.

Post-construction, typical urban contaminants associated with roadways, parking areas, and rooftops will be introduced to the project site. Moreover, the increase in impervious area increases the efficiency by which sediment and other pollutants are delivered downstream. Concentration of flow by the storm drain system could increase the erosive energy of flows, thereby increasing sediment supply from the project site. Runoff from landscaped areas may also contain residual pesticides and nutrients. Consequently, there is potential for long-term degradation of runoff water quality from the implementation of the proposed project.

The project proposes the following post-construction stormwater management features, according to a three-tiered LID/BMP design approach:

- The purpose of site design BMPs is to maintain pre-development runoff characteristics, protect sensitive resource areas, and attempt to minimize new impervious areas. The site has been designed to limit the amount of disturbed area and new impervious areas.
- Source control BMPs use structural controls and operational procedures to limit pollutants at their source. The proposed project would implement the following source control BMPs: marking “No Dumping! Flows to River” on storm drain inlets; interior floor drains plumbed to sanitary sewer; careful management of pesticide use for landscaped areas; posting “Do Not Dump Hazardous Materials Here” on refuse areas; utilize enclosed trash compactors; grade loading docks to minimize run-on and contain spills; and draining parking areas to bioretention planters.
- Treatment control BMPs are designed to reduce the amount of pollutants in stormwater and to reduce runoff rates or volumes. All new impervious areas will be routed through either a bioretention basin or an infiltration planter. The floors of bioretention basins will be amended

[2] California State Water Resources Control Board (State Water Board) 2022. Storm Water Program. Best Management Practices (BMP) Databases. Website: https://www.waterboards.ca.gov/water_issues/programs/stormwater/bmp_database.html. Accessed March 17, 2022.

with a layer of gravel overlain by a layer of specialized biosoil. The biosoil will be a sandy loam material to promote infiltration while allowing for vegetation to establish. An underdrain will be installed to facilitate infiltration as the local soils have low infiltration potential. Bioretention basins have been configured to drain within 48 hours to prevent vector concerns.

MM HYD-1b is proposed requiring (1) that the Stormwater Control Plan be reviewed and verified by the City of Suisun City to ensure the proposed stormwater controls are adequate pursuant to the requirements Order No. R2-2015-0049 (or more recent permit), and (2) that an operation and maintenance program is in place to ensure the long-term functionality of the stormwater controls. The various RWQCBs have evaluated the effectiveness of the types of BMPs required by MM HYD-1b and have determined that BMPs are known to be effective in protecting receiving waters.[3] Impacts would be less than significant with mitigation.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM HYD-1a Prior to issuance of grading permits for the proposed project, Suisun City shall verify that the applicant has prepared a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the requirements of the Statewide Construction General Permit. The SWPPP shall be designed to ensure that: (1) all pollutants and their sources, including sources of sediment associated with construction, construction site erosion, and all other activities associated with construction activity will be controlled; (2) where not otherwise required to be under a Regional Water Quality Control Board (RWQCB) permit, all non-stormwater discharges are identified and will be either eliminated, controlled, or treated; (3) site Best Management Practices (BMPs) will be effective and will result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity; and (4) stabilization BMPs will be installed to reduce or eliminate pollutants after construction is completed. The SWPPP shall be prepared by a qualified SWPPP developer. The SWPPP shall include the minimum BMPs required for the identified Risk Level. BMP implementation shall be consistent with the BMP requirements in the most recent version of the California Stormwater Quality Association (CASQA) Stormwater Best Management Handbook–Construction or the Caltrans Stormwater Quality Handbook Construction Site BMPs Manual. The SWPPP shall be implemented during construction.

MM HYD-1b Prior to the issuance of building permits, the project applicant shall submit a Stormwater Control Plan to the City of Suisun City for review and approval. The plan shall be developed using the California Stormwater Quality Association (CASQA) "New Development and Redevelopment Handbook" and reflect the applicable

[3] California State Water Resources Control Board (State Water Board) 2022. Storm Water Program. Best Management Practices (BMP) Databases. Website: https://www.waterboards.ca.gov/water_issues/programa/stormwater/bmp_database.html. Accessed March 17, 2022.

provisions of Section C.3 of the San Francisco Bay Regional Water Quality Control Board (RWQCB) Municipal Regional Permit (MRP) (Order No. R2-2015-0049, National Pollutant Discharge Elimination System [NPDES] Permit No. CAS612008) (or more recent permit). The Stormwater Control Plan shall identify pollution prevention measures and Best Management Practices (BMPs) necessary to control stormwater pollution from operational activities and facilities and provide for appropriate maintenance over time. The Stormwater Control Plan shall include Low Impact Development (LID) design concepts, as well as concepts that are intended to accomplish a "first flush" objective that would remove contaminants from the first 2 inches of stormwater before it enters area waterways. The project applicant shall also prepare for City approval and enter into an Operations and Maintenance Agreement with the City identifying procedures to ensure that stormwater quality control measures work properly during operations.

Level of Significance After Mitigation

Less than significant impact.

Groundwater

Impact HYD-2: The proposed project would not deplete groundwater supplies or interfere substantially with groundwater recharge.

Impact Analysis

This analysis assesses the potential for the proposed project to deplete groundwater supplies or interfere substantially with groundwater recharge (Checklist question b).

Groundwater Overdraft

Groundwater overdraft refers to pumping more than the safe yield of aquifer. Groundwater overdraft has not been documented in the project vicinity because (1) surface water is the primary municipal water source and (2) the absence of cultivated agricultural uses, which are typically large groundwater producers.

The proposed project would be primarily served with potable water service provided by Suisun-Solano Water Authority (SSWA). Although it is not necessary to meet the project's water needs, there is an existing groundwater well on-site. Groundwater levels exhibit stable long-term trends.[4] Therefore, the proposed project would not exacerbate groundwater overdraft (to the extent that it exists) or conflict with the provisions of a sustainable groundwater management plan. Impacts would be less than significant.

Groundwater Recharge

Groundwater recharge is the process by which water percolates into the aquifer. The proposed project would result in an increase in additional impervious surfaces. However, the project site is at a relatively low elevation and is near Suisun Marsh; thus, groundwater levels tend to be high and soils

[4] Solano County and Solano Subbasin A Groundwater Sustainability Annual Report - Water Year 2023. Website: https://www.solanogsp.com/wp-content/uploads/2024/04/5-022.66_WY_2023_Compressed.pdf. Accessed May 30, 2024

in the lowest portions of the site are often saturated. Accordingly, the groundwater recharge potential of the project site is limited. For these reasons, impacts to groundwater recharge would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Drainage

Impact HYD-3:	**The proposed project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems.**

Impact Analysis

This impact assesses the potential for the proposed project to create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or cause flooding on- or off-site (Checklist questions d and e). This analysis is based on the Hydrology Report provided in Appendix G.

The proposed project would result in the development of 2.1 million square feet of new industrial development and infrastructure on 120 acres of the project site. The remaining 47 acres would be preserved as open space. Thus, the proposed project would increase the amount of impervious surface coverage on the project site and would create the potential for increased runoff leaving the project site that may create potential flooding conditions in downstream waterways.

The proposed project would install a storm drainage system designed for a 15-year storm event, in accordance with City design standards. Inlets would capture surface runoff, where it would enter an underground piping system that would convey stormwater to one of four basins. The basins would provide 323,280 square feet (7.6 acres) of stormwater retention.

The two existing drainage channels that cross the project site would be abandoned. A new drainage channel would divert runoff from the west channel culvert at Petersen Road to a new east channel that would connect to the existing east culvert under SR-12. Table 3.8-3 summarizes the pre- and post-project flow rates at the SR-12 culvert. As shown in the table, the post-project flow rates would less than the pre-project flow rates during a 2-year storm event and 25-year storm event; they would only be slightly higher than the pre-project flow rates during a 100-year storm event. Thus, the existing culvert would not need to be upsized to accommodate the project's runoff.

Table 3.8-3: Peak Flow Summary

Storm Event	Inflow to State Route 12 Culvert (Cubic Feet per Second)	
	Pre-Project	Post-Project
2-year	263.4	241.2
25-year	531.7	516.3
100-year	660.2	660.7
Source: Balance Hydrologics. 2022.		

In accordance with applicable provisions of Section C.3 of the San Francisco Bay RWQCB MRP (Order No. R2-2015-0049, NPDES Permit No. CAS612008) (or more recent permit) as required under MM HYD-1b and pursuant to provisions of the Fairfield-Suisun Urban Runoff Management Program, the proposed project would implement LID stormwater management methods into the on-site storm drainage system consisting of rainwater harvesting and use, infiltration, evapotranspiration, or biotreatment.

Collectively, these measures would serve to slow, reduce, and meter the volume of runoff leaving the project site and ensure that downstream storm drainage facilities are not inundated with project-related stormwater. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

100-year Flood Hazard Areas

Impact HYD-4: **The proposed project would not place housing or structures within a 100-year flood hazard area.**

Impact Analysis

FEMA flood hazard areas are present within the lowest lying parts of the project site near SR-12. The proposed project would preserve 47 acres of the project site as open space, which would coincide with the 100-year flood hazard areas. Therefore, the proposed project would not place structures within a 100-year flood hazard area. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Levee or Dam Failure

Impact HYD-5: The proposed project would not be susceptible to inundation from dam failure.

Impact Analysis

Solano County General Plan Figure HS-3 indicates that the southern portion of the project site is within the hypothetical dam failure inundation area of Lake Curry in Napa County. Lake Curry is impounded by an earthen dam constructed in 1926 and the reservoir has a maximum storage capacity of 10,700 acre-feet. The reservoir is not currently used for municipal purposes; water from Lake Curry is discharged into Suisun Creek for instream flow.

The California Department of Water Resources Division of Safety of Dams oversees dam safety and requires local dam operators to maintain records concerning maintenance, operation, staffing, and engineering and geologic investigations that pertain to their facilities. Division of Safety of Dams personnel have the ability to inspect dams for safety and require operators to implement corrective measures if deficiencies are found. Additionally, the Division of Safety of Dams oversees alteration and repair of dams. The City of Vallejo is responsible for compliance with State laws that pertain to the safety of the Lake Curry Dam.

Furthermore, the dam has been operational for more than 90 years without any documented incidents of dam failure. Additionally, there are no restrictions on Lake Curry (such as maximum water elevation) that are intended to abate any concerns about the structural integrity of the dam. This indicates that the likelihood of catastrophic dam failure is remote and unlikely to occur.

Lastly, in the unlikely event of dam failure, the inundation area coincides with the 47 acres of the project site proposed as open space. No structures would be affected under this scenario. Impacts would be less than significant.

Notwithstanding all of the above, this particular category impact is outside the scope of CEQA, as it is concerned with the potential of existing environmental hazards to adversely affect future project users. In *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369, 377 ("*CBIA*"), the California Supreme Court held that "agencies subject to CEQA generally are *not* required to analyze the impact of existing environmental conditions on a project's future users or residents." (Italics added.) The court did not hold that CEQA never requires consideration of the effects of existing environmental conditions on the future occupants or users of a proposed project. But the circumstances in which such conditions may be considered are narrow: "when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. In those specific instances, it is the project's impact on the environment—and not the environment's

impact on the project—that compels an evaluation of how future residents or users could be affected by exacerbated conditions." (*Id*. at pp. 377-378, italics added).

In light of the *CBIA* decision, the City is not required by CEQA to address the extent to which existing risks associated with the dam at Lake Curry could affect future occupants or users of lands that might be developed in the future. Future development under the proposed project does not create any risk of exacerbating whatever risks exist with respect to the dam at Lake Curry. Thus, readers should treat the discussion of this impact on future project residents and users as being beyond the scope of CEQA. The discussion has been provided to the public on a voluntary basis in the interests of full disclosure.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

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