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 Preliminary Hydrologic and Hydraulic Modeling Memo, prepared by Balance Hydrologics, provided in Appendix F. Additional information was obtained through site reconnaissance, review of project plans, and review of resources, including the City of American Canyon General Plan, the California Department of Water Resources (DWR) Bulletin 118, the Clean Water Act 303(d) list, and the Western Regional Climate Center.

3.8.2 - Environmental Setting

Climate and Meteorology

The City of American Canyon is characterized by a Mediterranean climate with warm summers, mild winters, and moderate precipitation. Temperatures in American Canyon range from an average monthly low of 38.3°F (degrees Fahrenheit) in January to an average monthly high of 82.1°F in September. Average annual rainfall is 24.6 inches with the majority occurring from November to March. General meteorological data for the American Canyon area, as measured at the Napa State Hospital weather station, are presented in Table 3.8-1.

Table 3.8-1: American Canyon Meteorological Summary

Month	Temperature (°F)		Average Precipitation (inches)
	Average Low	Average High	
January	38.3	57.0	5.14
February	40.8	61.5	4.38
March	42.0	65.0	3.35
April	43.7	69.6	1.65
May	47.6	74.6	0.68
June	51.3	79.8	0.21
July	53.4	81.9	0.02
August	53.2	81.7	0.06
September	51.5	82.1	0.31
October	47.9	76.5	1.36
November	42.6	65.9	2.98
December	38.8	57.6	4.50
Annual Average	**45.9**	**71.1**	**24.66**

Month	Temperature (°F)		Average Precipitation (inches)
	Average Low	Average High	

Notes:
Averages derived from measurements taken between January 1, 1893, and June 10, 2016, at Napa State Hospital (WRCC ID# 046074).
Source: Western Regional Climate Center 2021.

Regional Hydrology

The project site is located within the 426-square-mile Napa River Watershed. The Napa River drains 47 tributaries along its 55-mile length from the headwaters of Mount St. Helena in the Mayacamas Mountain Range at approximately 3,700 feet above mean sea level to San Pablo Bay, part of San Francisco Bay.

Within the large Napa River Watershed, major land cover types are forest (35 percent), grassland/rangeland (23 percent), and agriculture (19 percent). The San Francisco Bay Regional Water Quality Control Board (RWQCB) indicates that two-thirds of the agricultural land is vineyards, and urban development covers approximately 8 percent of the watershed. The majority of streams in the Napa Valley have been altered by urbanization, agriculture, and grazing. Since the 1800s, large sections of the Napa River have been straightened, the banks hardened, flows redirected, and several levees constructed.

At a more local scale, the project site has a contributing watershed area of 650 acres, measured where No Name Creek leaves the northwest corner of the site. Site drainage and the watershed boundary have been heavily influenced by the construction of ditches, roadway embankments, and other development. It is plausible that an additional area east of State Route 29 (SR-29) contributes runoff to the project site; however, this area does not affect the hydrology of the development footprint because it is either (1) routed through the drainage channel along Airport Road (which will not be affected by the project), or (2) routed through the undeveloped land to the south of the project site (also unaffected by the project). The watershed is not part of one of the larger, regional watersheds used for stormwater master planning.

Storm Drainage

The project site is undeveloped and does not have any existing storm drainage facilities. Runoff either ponds on-site and percolates into the soil or sheet flows into the municipal storm drainage facilities within Green Island Road.

Surface Water Quality

The Napa River is listed as impaired on the Clean Water Act 303(d) list for pathogens and sediment/siltation. These pollutants are a result of agriculture, urban runoff, and storm sewers; land development; and construction. The Napa River was previously listed on the Clean Water Act 303(d) list for nutrients; however, the RWQCB de-listed the Napa River for this pollutant in 2014 (Resolution Number R2-2014-0006).

Groundwater

The project site is located within the 40,500-acre Napa-Sonoma Lowlands Groundwater Subbasin. The subbasin consists primarily of alluvium and alluvial fans that were deposited at and near the mouths of the Napa River and Sonoma Creek adjacent to San Pablo Bay. To a lesser extent, portions of the City are underlain by sandstone and mudstone/shale, of which the former comprises some of the more productive water-bearing units within the region. The City of American Canyon does not maintain any municipal groundwater wells; however, as many as 41 private wells have been identified that draw from the subbasin within and near the City. Nearly all of these wells reported relatively low-flow rates, ranging from 0.5 gallon per minute (gpm) to 45 gpm.

Groundwater Quality

Groundwater quality in the Napa-Sonoma Lowlands Subbasin is generally suitable for municipal and agricultural uses. Primary constituents of concern are high total dissolved solids (TDS), nitrate, boron, and organic compounds. High TDS are typically found in wells in areas closest to the San Francisco Bay. The DWR indicates that the Napa-Sonoma Lowlands Subbasin shows a TDS range of 50 to 300 milligrams per liter (mg/L) with an average of 185 mg/L.

Geology and Soils

Napa County lies within the Coast Range of California, formed at and near the boundary of two major tectonic plates—the North American and Pacific plates. The lower Napa Valley can generally be considered a down-warped basin, the depth of which has been accentuated by additional down-faulting. The oldest rocks in the area, exposed along the flanks of the valley, are the sedimentary units of the Cretaceous-period Great Valley sequence. These units were originally part of the intact, overriding (North American) plate that were uplifted after the plate margin changed from a subduction zone to a transform fault, approximately 25 million years ago. The Great Valley sequence, in turn, is overlain by shales, sandstones, and siltstones of early to mid-Tertiary period. These sedimentary units were deformed and, in some places, moderately metamorphosed as a result of the uplift of the region. Thick deposits of late-Tertiary-period volcanic material, primarily tuff and rhyolite, cover the sedimentary units throughout much of the valley, as far south as Suscol Canyon. The Napa Valley floor is composed of Quaternary-period sediments, deposited on the Napa River floodplain and in alluvial fans built-up at tributary mouths along the base of the valley flanks.

The project site is located near the southern end of the Napa Valley, at the distal end of the younger alluvial fan deposits that emanate from the hills to the east of the site. Young alluvial silt and clay floodplain and tidal deposits are also present at the site, deposited by the nearby Napa River.

The vast majority of the project site is underlain by Clear Lake clay and small areas of Haire loam, 2-9 percent slopes; and Fagan clay loam, 5-15 percent slopes. These soils are classified as hydrologic soils group D, meaning they have high runoff potential and very low infiltration rates, particularly when thoroughly wetted.

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 of 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 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 certification has 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 (with the exception of 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, municipal stormwater discharges in the City of American Canyon are regulated under the San Francisco Bay Region Municipal Regional Stormwater NPDES Permit, 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, California 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 amount of pollutants in runoff. The Municipal Regional Permit 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, 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 requires all municipal permittees to implement these requirements by June 30, 2015, to the extent allowed by applicable law. This includes projects requiring discretionary approvals that have not been deemed complete for processing and discretionary permit projects without vesting tentative maps that have 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 to 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 LID and how it relates 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. 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 "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 (TMDL) 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 Water Quality Control 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 have to 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. The RWQCB with jurisdiction over the project site is the San Francisco Bay Region.

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 (NOI), 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 project would discharge to a sediment-sensitive receiving water. The determination of the project risk level would be made when the NOI 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. Examples of BMPs include silt fencing, street sweeping, and inspection. 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. The Handbook provides detailed monitoring guidance and inspection forms, including a SWPPP Template. The Handbook addresses selection and implementation of BMPs to eliminate or to reduce the discharge of pollutants and control or reduce impacts to the hydrologic cycle associated with development and redevelopment activities.

The California Department of Transportation (Caltrans) also has published a Stormwater Quality Handbook Construction Site Best Management Practices Manual that provides similar guidance for transportation projects.

Local

City of American Canyon

General Plan

The City of American Canyon General Plan sets forth the following guiding and implementing policies relevant to hydrology and water quality:

Goal 10 Protect the lives and property of American Canyon's residents and visitors from flood hazards.

Objective 10.1 Design both new development and redevelopment projects in a manner that minimizes hazards associated with flooding.

Policies

Policy 10.1.1 Retain and enhance natural watercourses, including perennial and intermittent streams, as the City's primary flood control channels whenever feasible.

Policy 10.1.4 Ensure that stormwater drainage is designed for peak flow conditions.

Policy 10.1.5 Prohibit the development of structures designed for human occupancy within the 100-year floodplain, unless flood hazards are adequately mitigated. Mitigation can be accomplished by building foundations a minimum of one (1) foot above the 100-year flood elevation, or by other means approved by the City Engineer.

Policy 10.1.12 Require that proposed developments within the 100-year floodplain submit information regarding the flood hazard prepared by a qualified Civil Engineer or Hydrologist.

Policy 10.1.13 Require that proposed developments within the 100-year floodplain submit plans to adequately mitigate flood hazards and demonstrate that such improvements will not create or increase downstream or upstream flood hazards.

Stormwater Management

As required under State Water Board Order No. 2013-001 DWQ, the City of American Canyon maintains a Storm Water Management Plan (SWMP) (NPDES Permit No. CAS 612007). As one element of that Program, the City requires regulated projects to address post-construction stormwater quality. The City of American Canyon requires regulated projects, such as this one, to prepare a Stormwater Control Plan in accordance with the Bay Area Stormwater Management Agencies Association–Post Construction Manual. The Stormwater Control Plan must include post-construction stormwater treatment measures such as bioretention facilities and source control BMPs. The SWMP must also address ongoing maintenances of those facilities.

A Stormwater Control Plan and a Stormwater BMP Operations and Maintenance Plan will be required for the proposed project in accordance with the Bay Area Stormwater Management Agencies Association–Post Construction Manual. The proposed project would also incorporate LID design strategies including bioretention and inlet markings.

In addition, the City requires that a Preliminary Hydrology and Hydraulics Study be prepared to determine whether there are significant impacts. Storm drain design is required to conform to Section 4 of the City's Engineering Standard Plans and Specifications for Public Improvements. Those standards require, among other things, that post-development runoff be no greater than 90 percent of pre-development runoff.

3.8.4 - Methodology

Balance Hydrologics prepared a Preliminary Hydrologic and Hydraulic Modeling Memo that assessed and outlined how the changes in existing and proposed land cover, along with the proposed construction of Devlin Road, will impact the hydrology and hydraulics of the creek directly downstream of the project area and along the reach to its confluence with the Napa River. The memo is provided in Appendix F.

Additional information was provided by site reconnaissance, review of project plans, and review of resources including the City of American Canyon General Plan, the DWR Bulletin 118, the CWA 303(d) list, and the Western Regional Climate Center.

3.8.5 - Thresholds of Significance

Appendix G to the CEQA Guidelines is a sample Initial Study Checklist that includes questions for determining whether impacts related to utilities and service systems are significant. These questions reflect the input of planning and environmental professionals at the Governor's Office of Planning and Research and the California Natural Resources Agency, based on input from stakeholder groups and experts in various other governmental agencies, nonprofits, and leading environmental consulting firms. As a result, many lead agencies derive their significance criteria from the questions posed in Appendix G. The City has chosen to do so for this project. Thus, the proposed project would have a significant effect if it 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; or

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 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

Phases 1 and 2

This analysis assesses the potential for the proposed project to degrade surface water quality in downstream water bodies.

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 the Napa River. 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 163 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 Best Management Practices [BMPs]) during construction activities to prevent pollutants from entering downstream waterways. 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 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 project would implement the following source control BMPs: mark "No Dumping! Flows to River" on storm drain inlets; plumb interior floor drains to sanitary sewer; carefully manage pesticide use for landscaped areas; post "Do Not Dump Hazardous Materials Here" on refuse areas; utilize enclosed trash compactors; grade loading docks to minimize run-on and contain spills; and drain 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 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.

Additionally, the wetland preserve would facilitate the natural sequestration of pollutants of stormwater leaving the project site.

MM HYD-1b is proposed requiring (1) that the Stormwater Control Plan be reviewed and verified by the City of American Canyon 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. Thus, there is a high degree of certainty that the proposed project would not exacerbate the existing water quality status of the Napa River. 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, the applicant shall submit to the City of American Canyon for review and approval a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the requirements of the statewide Construction General Permit. The SWPPP shall be designed to address the following objectives: (1) all pollutants and their sources (e.g., runoff), including sources of sediment associated with construction, construction site erosion, and all other activities associated with construction activity, are controlled; (2) where not otherwise required to be under a Regional Water Quality Control Board (RWQCB) permit, all non-stormwater discharges are identified and either eliminated, controlled, or treated; (3) site Best Management Practices (BMPs) (e.g., silt fencing,

street sweeping, routine inspection, etc.) are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity; and (4) stabilization BMPs are installed to reduce or eliminate pollutants after construction are 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 California Department of Transportation (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 American Canyon for review and approval. The plan shall be developed using the California Stormwater Quality Association (CASQA) "New Development and Redevelopment Handbook" and include the applicable provisions of Section C.3 of the San Francisco Bay Regional Water Quality Control Board (RWQCB) Municipal Regional Permit (Order No. R2-2015-0049, NPDES Permit No. CAS612008 (or more recent permit). The Stormwater Control Plan shall identify pollution prevention measures and Best Management Practices (BMPs) to control stormwater pollution from operational activities and facilities and provide maintenance in perpetuity. The Stormwater Control Plan shall include Low Impact Development (LID) design concepts, as well as concepts that 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 and submit an Operations and Maintenance Agreement to the City, identifying procedures to ensure 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

Phases 1 and 2

This analysis assesses the potential for the proposed project to deplete groundwater supplies or interfere substantially with groundwater recharge.

Groundwater Overdraft

The proposed project would be served with potable water service provided by the City of American Canyon; the proposed project would not rely groundwater wells as a water supply source. 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

The proposed project would result in an increase in additional pervious surfaces. However, the project site is at a relatively low elevation and is near the Napa River; thus, groundwater levels tend to be high and soils in the lowest portions of the site are often saturated. Accordingly, the groundwater water recharge potential of the project site would be 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

Phases 1 and 2

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.

The proposed project would result in the development of 2.4 million square feet of new industrial development and infrastructure on 163 acres of the project site. The remaining 45 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. 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 110,766 square feet (2.6 acres) of stormwater retention.

In accordance with applicable provisions of Section C.3 of the San Francisco Bay RWQCB Municipal Regional Permit (Order No. R2-2015-0049, NPDES Permit No. CAS612008 (or more recent permit) as required under MM HYD-1b, 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.