

3.9 HYDROLOGY AND WATER QUALITY

This section describes the existing hydrologic and water quality setting for the project site, including climate, hydrology, groundwater, flooding, and water quality. Applicable regulations and policies regarding hydrology and water quality are discussed, and impacts that may result from project implementation are identified. Mitigation measures are recommended to reduce potential impacts, where appropriate. Water supply and its relationship with groundwater is addressed in Section 3.12, *Utilities and Service Systems*.

A comment letter was received in response to the notice of preparation from the Central Valley Regional Water Quality Control Board (CVRWQCB) in regards to routine information CVRWQCB needs to see in an environmental analysis.

3.9.1 Environmental Setting

HYDROLOGY AND DRAINAGE

Regional Hydrology

The Sacramento River Basin encompasses approximately 26,500 square miles and is bounded by the Sierra Nevada Mountains to the east, the Coast Ranges to the west, the Cascade Ranch and Trinity Mountains to the north, and the Delta Central Sierra area to the south. The American River watershed, which encompasses the project site, is a subbasin of the Sacramento River watershed (Exhibit 3.9-1). The American River originates in the Tahoe and Eldorado National Forests and flows into Folsom Lake reservoir, which holds approximately 1 million-acre feet of water (Sacramento County 2010).

Local Hydrology

Topography on the site is gently sloping, and the only surface water feature within the site is a minor drainage swale. The project site is within the Buffalo Creek Watershed, which is a tributary to the larger American River watershed described above.

Stormwater Drainage

The Sacramento Regional County Sanitation District transmits, treats, and disposes or reuses the wastewater, including stormwater, generated in the City of Folsom. The wastewater collected is transported to the Sacramento Regional Wastewater Treatment Plant (SRWTP) in Elk Grove. This plant serves the entire Sacramento metropolitan area including the unincorporated county areas adjacent to the Cities of Sacramento, Citrus Heights, Elk Grove, Rancho Cordova, and the City of Folsom.

Flood Conditions

The Federal Emergency Management Agency (FEMA) oversees federal floodplain management policies and runs the National Flood Insurance Program (NFIP) adopted under the National Flood Insurance Act of 1968. FEMA prepares Flood Insurance Rate Maps (FIRMs) that delineate the regulatory floodplain to assist local governments with land use planning and floodplain management decisions to meet the requirements of the NFIP. Floodplains are divided into flood hazard areas, which are areas designated according to their potential for flooding, as delineated on FIRMs. Special Flood Hazard Areas (SFHAs) are the areas identified as having a 1 percent chance of flooding in a given year (otherwise known as the 100-year flood). The project site is not within a SFHA (100-year flood plain) or a 200-year flood plain (Exhibit 3.9-2).

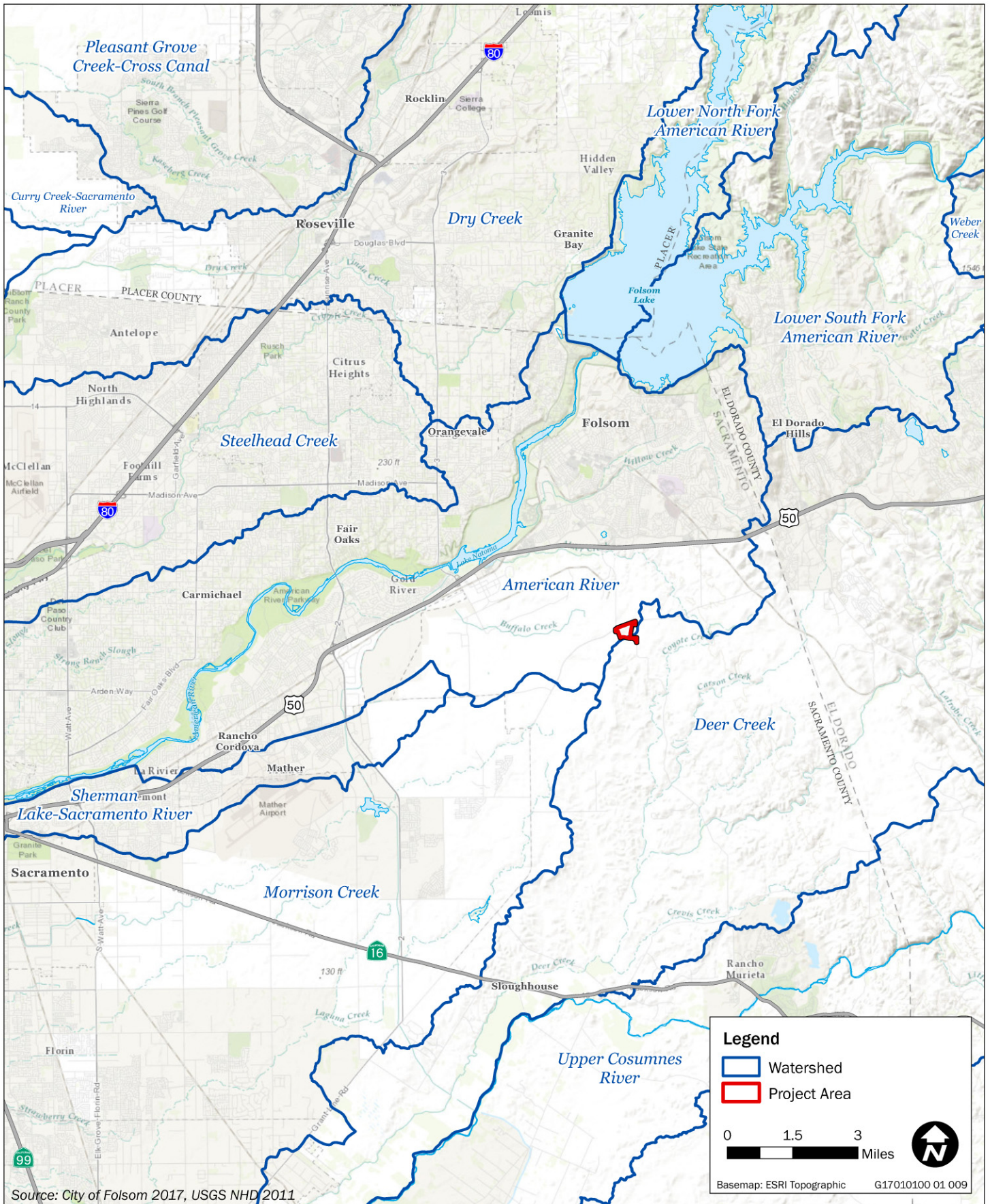
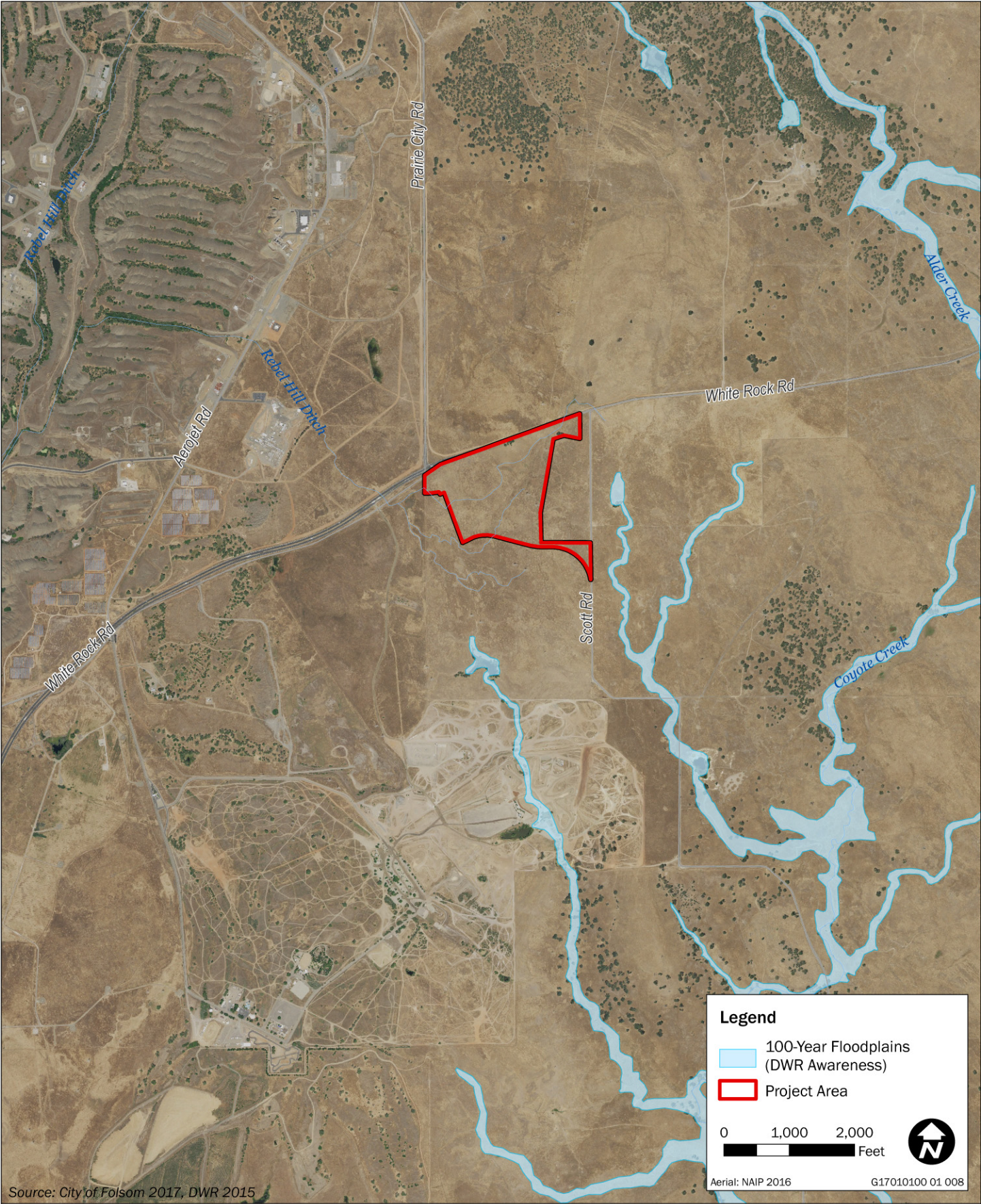


Exhibit 3.9-1

Watershed Map





Source: City of Folsom 2017, DWR 2015

Exhibit 3.9-2

Floodplain Map



Dam Failure

Dam failure is caused by various impacts to the structure, including earthquake, erosion, structural failure, or foundation leakage. The American River Flood Control System consists of Folsom Dam, Nimbus Dam, an auxiliary dam at Mormon Island, auxiliary spillway, eight earth-filled dikes, and 4 miles of levees along the north bank of the American River from Howe Avenue to Arden Way (Sacramento County 2010). Failure of Folsom Dam (including the earth-filled dikes) could affect the City of Folsom and the surrounding unincorporated area. However, the project site is not within the inundation area for Folsom Dam (Sacramento County 2016).

Groundwater Hydrology

The project site is located within the Sacramento Valley Groundwater Basin, South American Subbasin, which covers approximately 248,000 acres (388 square miles). The subbasin is bounded by the Sierra Nevada to the east, Sacramento River to the west, American River to the north, and the Cosumnes and Mokelumne Rivers to the south (DWR 2004). Most of the South American Subbasin is located within the Central Sacramento County Groundwater Basin (Central Basin). Intensive use of groundwater over the past 60 years has resulted in lower groundwater elevations in the Central Basin. Over time, isolated groundwater depressions have grown and coalesced into a single cone of depression that is centered in the southwestern portion of the Central Basin, approximately 17 miles southwest of the project site. The Central Sacramento County Groundwater Forum determined the long-term average annual sustainable yield of groundwater from the Central Basin to be 273,000 acre-feet per year (SCGA 2006).

WATER QUALITY

Surface Water Quality

Water quality conditions in surface waters are affected by conditions in the watersheds, including weather and temperature, groundwater inputs, atmospheric deposition, animal wastes, urban contaminants and emissions, seasonal rainwater runoff and climatic patterns (e.g., droughts). The principal sources of potential contaminant discharges to surface waters in the surrounding area are associated with human-related activities and include urban stormwater runoff, agricultural runoff, and municipal wastewater treatment plant discharges. Buffalo Creek does not have any beneficial uses attributed to it in the Basin Plan; therefore, it is regulated for the existing designated uses for its receiving waters, which is the American River. The segment of the American River that is a receiving water for Buffalo Creek is on the 303(d) list for mercury and unknown toxicity (CVRWQCB 2012).

Groundwater Quality

Groundwater quality can be affected by many things, but the chief controls on the characteristics of groundwater quality are the source and chemical composition of recharge water, properties of the host sediment, and history of discharge or leakage of pollutants. The project site was formerly owned by Aerojet General Corporation, and several sub areas of the Aerojet Superfund Project with plumes of contaminated groundwater surround the project site.

3.9.2 Regulatory Framework

FEDERAL

Clean Water Act

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

CWA Water Quality Criteria/Standards

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

CWA Section 303(d) Impaired Waters List

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

National Pollutant Discharge Elimination System

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

“Nonpoint source” pollution originates over a wide area rather than from a definable point. Nonpoint source pollution often enters receiving water in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances. Two types of nonpoint source discharges are controlled by the NPDES program: discharges caused by general construction activities and the general quality of stormwater in municipal stormwater systems. The goal of the NPDES nonpoint source regulations is to improve the quality of stormwater discharged to receiving waters to the maximum extent practicable. The RWQCBs in California are responsible for implementing the NPDES permit system (see the discussion of State Plans, Policies, Regulations, and Laws section below).

National Toxics Rule and California Toxics Rule

In 1992, EPA issued the National Toxics Rule (NTR) (40 CFR 131.36) under the CWA to establish numeric criteria for priority toxic pollutants in 14 states and jurisdictions, including California, to protect human health and aquatic life. The NTR established water quality standards for 42 pollutants for which water quality criteria exist under CWA Section 304(a) but for which the respective states had not adopted adequate numeric criteria. EPA issued the California Toxics Rule (CTR) in May 2000. The CTR establishes numeric water quality criteria for 130 priority pollutants for which EPA has issued Section 304(a) numeric criteria that were not included in the NTR.

National Flood Insurance Act

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

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

STATE

California Porter-Cologne Act

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

Under the Porter-Cologne Act, each RWQCB must formulate and adopt a water quality control plan (known as a "Basin Plan") for its region. The Basin Plan for the Central Valley Region includes a comprehensive list of waterbodies within the region and detailed language about the components of applicable Water Quality Objectives (WQOs). The Basin Plan recognizes natural water quality, existing and potential beneficial uses, and water quality problems associated with human activities throughout the Sacramento and San Joaquin River Basins. Through the Basin Plan, the Central Valley RWQCB executes its regulatory authority to enforce the implementation of TMDLs, and to ensure compliance with surface WQOs. The Basin Plan includes both narrative, and numerical WQOs designed to provide protection for all designated and potential beneficial uses in all its principal streams and tributaries. Applicable beneficial uses include municipal and domestic water supply, irrigation, non-contact and contact water recreation, groundwater recharge, fresh water replenishment, hydroelectric power generation, and preservation and enhancement of wildlife, fish, and other aquatic resources.

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

NPDES Construction General Permit for Stormwater Discharges Associated with Construction Activity

The State Water Board adopted the statewide NPDES General Permit in August 1999. The state requires that projects disturbing more than one acre of land during construction file a Notice of Intent with the RWQCB to be covered under this permit. Construction activities subject to the General Permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non stormwater discharges to storm sewer systems and other waters. A stormwater pollution prevention plan (SWPPP) must be developed and implemented for each site covered by the permit. The SWPPP must include best management plans (BMPs) designed to prevent construction pollutants from contacting stormwater and keep products of erosion from moving off-site into receiving waters throughout the construction and life of the project; the BMPs must address source control and, if necessary, pollutant control.

NPDES Stormwater Permit for Discharges from Small Municipal Separate Storm Sewer Systems

The Municipal Stormwater Permitting Program regulates stormwater discharges from municipal separate storm sewer systems (MS4s). Stormwater is runoff from rain or snow melt that runs off surfaces such as rooftops, paved streets, highways or parking lots and can carry with it pollutants such as oil, pesticides,

herbicides, sediment, trash, bacteria and metals. The runoff can then drain directly into a local stream, lake or bay. Often, the runoff drains into storm drains which eventually drain untreated into a local waterbody.

Sacramento County and the Cities of Sacramento, Galt, Rancho Cordova, Elk Grove, Folsom, and Citrus Heights are co-permittees under a single NPDES Municipal Stormwater Permit for stormwater discharges to their separate municipal storm sewer systems (Central Valley RWQCB Order No. R5-2015-0023, NPDES No. CAS082597). This stormwater discharge NPDES permit is renewed every 5 years, most recently in April 2015. The six jurisdictions formed the Sacramento Stormwater Quality Partnership to cooperatively implement a Stormwater Quality Improvement Plan (SQIP) which was last updated in 2009 (2009 SQIP) (Sacramento Stormwater Quality Partnership 2009). The stormwater discharge NPDES permit requires ground disturbing projects and activities to implement BMPs that avoid or reduce stormwater runoff, soil erosion, and the discharge of pollutants to surface waters to the “maximum extent practicable,” which is the performance standard specified in the CWA Section 402(p).

The 2009 SQIP describes the cooperatively implemented stormwater management actions of the Sacramento Stormwater Quality Partnership, as well as the individual stormwater agency programs. Sacramento Stormwater Quality Partnership agencies implement construction site management program BMPs that avoid or minimize the amount of erosion, pollutant discharges, and urban runoff and offsite sedimentation resulting from individual development-project construction sites, which helps protect the water quality. Construction management is typically accomplished by each NPDES permittee through code enforcement at the planning and design review stages, ensuring project construction site compliance with the SWRCB’s statewide NPDES Construction General Permit, and local enforcement of construction activities.

Stormwater quality design standards were first developed by the Sacramento Stormwater Quality Partnership in 2007, and most recently updated in 2017 “Stormwater Quality Design Manual” (Sacramento Stormwater Quality Partnership 2017), which addresses stormwater runoff system hydrology and water quality design requirements for development and significant redevelopment projects.

Pursuant to their stormwater discharge NPDES permit, the Sacramento Stormwater Quality Partnership also developed a Hydromodification Management Plan in 2011 and updated the Hydromodification Management Plan in February 2013, which will be integrated into each NPDES permittee’s development standards following approval by the Central Valley RWQCB. Hydromodification is defined in the NPDES permit as the “change in the natural watershed hydrologic processes and stormwater runoff characteristics (i.e., interception, infiltration, overland flow, interflow, and groundwater flow) caused by urbanization or other land use changes that result in increased stream flows and sediment transport.” In terms of the regulatory responsibility of the NPDES permit, hydromodification is primarily concerned with the increases in the magnitude, frequency, volume, and duration of stormwater runoff as a result of urban development that typically increases the amount of impervious surfaces that prevent infiltration of rainfall into the soil and increases amounts of stormwater runoff. The Hydromodification Management Plan outlines stormwater facility design approaches to minimize the changes in stormwater runoff, which in turn better protects receiving streams from increased potential for erosion and other adverse impacts.

California Water Code

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

Groundwater Management

Groundwater Management is outlined in the California Water Code, Division 6, Part 2.75, Chapters 1-5, Sections 10750 through 10755.4. The Groundwater Management Act was first introduced in 1992 as Assembly Bill (AB) 3030, and has since been modified by Senate Bill (SB) 1938 in 2002, AB 359 in 2011, and the Sustainable Groundwater Management Act (SB 1168, SB 1319, and AB 1739) in 2014. The intent

of the Acts is to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions and to provide a methodology for developing a Groundwater Management Plan.

The Sustainable Groundwater Management Act of 2014 (SGMA) became law on January 1, 2015, and applies to all groundwater basins in the state (Water Code Section 10720.3). By enacting the SGMA, the legislature intended to provide local agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdiction (Water Code Section 10720.1).

Pursuant to the SGMA, any local agency that has water supply, water management, or land use responsibilities within a groundwater basin may elect to be a “groundwater sustainability agency” for that basin (Water Code Section 10723). The Sacramento Central Groundwater Authority has notified DWR that it has elected to become a GSA pursuant to Water Code Section 10723.8; and intends to undertake sustainable groundwater management in area roughly coincident with the Sacramento Valley Groundwater Basin, South American Subbasin.

Central Valley Flood Protection Act

The Central Valley Flood Protection Act of 2008 establishes the 200-year flood event as the minimum level of protection for urban and urbanizing areas. As part of the state’s FloodSAFE program, those urban and urbanizing areas protected by flood control project levees must receive protection from the 200-year flood event level by 2025. The DWR and Central Valley Flood Protection Board (CVFPB) collaborated with local governments and planning agencies to prepare the 2012 Central Valley Flood Protection Plan (CVFPP) (DWR 2012), which the CVFPB adopted on June 29, 2012. The objective of the 2012 CVFPP is to create a system-wide approach to flood management and protection improvements for the Central Valley and San Joaquin Valley. The Central Valley Flood Protection Act calls for updates to the CVFPP every 5-years. At the time of preparation of this Draft EIR, the 2017 Update to the Central Valley Flood Protection Plan was in preparation but had not been adopted.

State Plan of Flood Control

Section 9110(f) of the California Water Code defines the SPFC as follows, “‘State Plan of Flood Control’ means the state and federal flood control works, lands, programs, plans, policies, conditions, and mode of maintenance and operations of the Sacramento River Flood Control Project described in Section 8350, and of flood control projects in the Sacramento River and San Joaquin River watersheds authorized pursuant to Article 2 (commencing with Section 12648) of Chapter 2 of Part 6 of Division 6 for which the board or the department has provided the assurances of nonfederal cooperation to the United States, and those facilities identified in Section 8361.”

The SPFC encompasses a wide network of facilities, which range from major structures such as levees, drainage pumping plants, drop structures, dams and reservoirs, and major channel improvements, to minor components such as stream gauges, pipes, and bridges.

LOCAL

The project site lies within the jurisdictional boundaries of Sacramento County; therefore, the County’s policies, as well as the Sacramento LAFCo’s policies, would apply. Furthermore, if the SOIA is approved, the site would be in the jurisdiction of the City of Folsom. Thus, applicable policies of the City of Folsom’s General Plan are described below.

Central Sacramento County Groundwater Management Plan

The Central Sacramento County Groundwater Management Plan (CSCGMP) represents an established framework for maintaining sustainable groundwater resources for the various users overlying the basin in Sacramento County between the American and Cosumnes Rivers (SCGA 2006). It includes specific goals, objectives, and an action plan to provide a “road map” for the governance body as the steps necessary to manage the basin are taken in coordination with various stakeholders. The CSCGMP is intended to be adaptive to changing conditions within the groundwater basin and is updated and refined as needed to

reflect progress made in achieving the CSCGMP's objectives. A goal of the CSCGMP is to ensure a viable groundwater resource for beneficial uses, including water for purveyors, agricultural, agricultural residential, industrial, and municipal supplies while maintaining and enhancing flows in the Cosumnes River. It is used as a tool to help ensure a long-term reliable water supply for rural domestic, agricultural, urban, business/industrial, environmental, and development uses in the region. The California Water Code requires that a groundwater management plan contain numerous technical provisions, which are briefly summarized as follows:

- ▲ An inventory of water supplies and a description of water uses within a given region. This information is summarized in a water balance showing overall water demands and available water supplies.
- ▲ Basin Management Objectives that are designed to protect and enhance the groundwater basin.
- ▲ Monitoring and management programs that ensure the Basin Management Objectives are being met.
- ▲ Description of stakeholder involvement and public information plan and programs for the groundwater basin.

The Water Forum estimated that the long-term average annual sustainable yield of the Central Basin was 273,000 afy, while extractions were estimated at 250,000 afy. The CSCGMP identifies provisions to maintain groundwater pumping levels within the sustainable yield, including reducing demand, conjunctive use, and aquifer storage and recovery projects.

Sacramento Central Groundwater Authority Alternative Submittal

SGMA established a process for local agencies (LAFCo is not subject to this process) to develop an Alternative submittal in lieu of a groundwater sustainability plan, if the Alternative satisfies the objectives of SGMA via a similar level of groundwater management through the agencies' existing groundwater management plan, and/or by providing sufficient factual evidence demonstrating the subbasin has operated within its locally established sustainable yield for at least 10 years. According to the groundwater sustainability plan regulations, Alternatives will be evaluated by the same criteria that will be used to assess groundwater sustainability plans.

The Sacramento Central Groundwater Authority prepared and submitted a final draft of the Alternative Submittal to DWR on December 14, 2016. The Alternative Submittal provides a similar level of detail as required in a groundwater sustainability plan and shows groundwater management would continue to occur consistent with the existing CSCGMP. The Alternative Submittal demonstrates subbasin operations between 2005 to 2015 did not exceed the sustainable yield conditions set forth by the Water Forum Agreement of 273,000 afy. If approved, the 273,000 afy sustainable yield set forth by the Water Forum Agreement will be incorporated into the Alternative Submittal and will be the base year for measuring the long-term sustainability of groundwater in the subbasin. DWR's timetable for approval and adoption of the Alternative submittal is not known at this time.

Sacramento LAFCo Policies, Standards, and Procedures

The following Sacramento LAFCo policies, standards, and procedures relate to hydrology and water quality.

Chapter IV, General Standard

Section F. Application of the California Environmental Quality Act to Changes of Organization or Reorganization and Spheres of Influence.

- ▲ **Standard F.4.** In preparing an Initial Study for the project subject to LAFCo review, the LAFCo will generally consider the project to have the potential to significantly affect the environment if one or more of the following situations exists:

- If buildout of the project may result in the capacity of any public service or facility being exceeded or substantially affected. For the purposes of this provision, public facilities or services include, but are not limited to: sewage disposal, water service, flood control facilities, drainage facilities, law enforcement, fire protection, school, parks, libraries, gas and electric service, and solid waste disposal. A public service or facility shall be considered “substantially affected” if the additional demand generated by the project would result in the facility or service exceeding 110 percent of its design capacity, or 120 percent of the available capacity.
- If the project has substantial growth-inducing potential because it would result in:
 - providing or requiring flood control or other public facility which will protect the public safety so as to permit new development in an area substantially larger than the proposed project;

Sacramento County General Plan

The following policies of the *Sacramento County 2030 General Plan* (Sacramento County 2011) are applicable to the project:

Conservation Element

- ▲ **Policy CO-7:** Support the Water Forum Agreement Groundwater Management Element. Prior to approving any new development water supply plan shall be approved that demonstrates consistency with an adopted groundwater management plan.
- ▲ **Policy CO-8:** Applicants proposing developments in areas with significant groundwater recharge characteristics shall evaluate the impact of said development on groundwater recharge and quality. This evaluation should recognize criteria defined in any broader County-wide determination and/or evaluation of groundwater recharge areas.
- ▲ **Policy CO-24:** Comply with the Sacramento Areawide NPDES Municipal Permit or subsequent permits, issued by the Central Valley Regional Water Quality Control Board (Regional Board) to the County, and the Cities of Sacramento, Elk Grove, Citrus Heights, Folsom, Rancho Cordova, and Galt (collectively known as the Sacramento Stormwater Quality Partnership [SSQP]).
- ▲ **Policy CO-26:** Protect areas susceptible to erosion, natural water bodies, and natural drainage systems.
- ▲ **Policy CO-27:** Support surface water quality monitoring programs that identify and address causes of water quality degradation.
- ▲ **Policy CO-28:** Comply with other water quality regulations and NPDES permits as they apply to County projects or activities, such as the State’s Construction General Permit and Aquatic Pesticides Permit.
- ▲ **Policy CO-30:** Require development projects to comply with the County’s stormwater development/design standards, including hydromodification management and low impact development standards, established pursuant to the NPDES Municipal Permit.
- ▲ **Policy CO-31:** Require property owners to maintain all required stormwater measures to ensure proper performance for the life of the project.

Safety Element

- ▲ **Policy SA-8:** Maintain the structural and operational integrity of essential public facilities during flooding.
- ▲ **Policy SA-13:** Where new upstream development in Sacramento County will increase or potentially impact runoff onto parcels downstream in a neighboring jurisdiction, such as the City of Sacramento, Sacramento County will coordinate with the appropriate neighboring jurisdiction to mitigate such impacts.

- ▲ **Policy SA-14:** The County shall require, when deemed to be physically or ecologically necessary, all new urban development and redevelopment projects to incorporate runoff control measures to minimize peak flows of runoff and/or assist in financing or otherwise implementing Comprehensive Drainage Plans.
- ▲ **Policy SA-15:** The County shall regulate, through zoning and other ordinances, land use and development in all areas subject to potential flooding and prohibit urban uses on unprotected flood land.

City of Folsom General Plan

The following policies of the City of Folsom General Plan (1993) are applicable to the project:

Conservation

- ▲ **Policy 25.1:** The surface and groundwater quality of Folsom shall not be degraded from City standards.
- ▲ **Policy 28.2:** The quality and quantity of surface water runoff from a property shall not exceed existing flows or existing quality or shall comply with City standards for offsite drainage. The City shall implement a surface-runoff water quality monitoring program to insure compliance with City standards.

3.9.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

While approval of the SOIA and annexation, along with changes to land use and zoning designations, would not result in physical changes to the site, approval of the SOIA/annexation would remove barriers to the development of a future corporation yard at this site. Therefore, this analysis considers the potential environmental impacts of the development of a future corporation yard.

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

THRESHOLDS OF SIGNIFICANCE

An impact on hydrology or water quality is considered significant if implementation of the project would do any of the following:

- ▲ violate any water-quality standards or waste-discharge requirements;
- ▲ substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table;
- ▲ substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on-site or off site;
- ▲ substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on site or off site;
- ▲ create or contribute runoff water that would exceed the capacity of existing or planned stormwater-drainage systems or provide substantial additional sources of polluted runoff;

- ▲ otherwise substantially degrade water quality;
- ▲ place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or FIRM or other flood hazard delineation map;
- ▲ place within a 100-year flood hazard area structures that would impede or redirect flood flows; or
- ▲ expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam, or inundation by seiche, tsunami, or mudflow.

ISSUES NOT DISCUSSED FURTHER

As described in Chapter 2, *Project Description*, the project has three potential access options. The evaluation of hydrology and water quality would not be affected by these options. Therefore, this is not discussed further in this section.

Although detailed plans for stormwater facilities have not been developed, it is anticipated that a pipeline collection system would convey storm runoff to a hydro-modification/detention basin located near the southwest corner of the project site. The hydro-modification/detention basin would provide water quality treatment and hydro-modification for storm runoff up to the 10-year 24-hour storm and detention up to the 100-year 24-hour storm. The hydro-modification/detention basin would discharge through a culvert into an existing water course at the project boundary (MacKay & Soms 2017). The discharge would be limited to pre-development conditions, and drainage improvements would be limited to onsite improvements. The development of the project site (including drainage improvements) is addressed in the technical sections of this EIR.

The project site is not within a SFHA, which are the areas identified as having a 1 percent chance of flooding in a given year (otherwise known as the 100-year flood). In addition, the project site is not within a 200-year flood plain or a dam inundation zone, as discussed above. Furthermore, although the project would allow for the future use of the site as a corporation yard, the project does not include any housing. Therefore, the project would have no impact related to flood hazards and this issue is not evaluated further.

Because of the distance from the nearest open waterbody, the Pacific Ocean (more than 100 miles west of the project site), the project would not be affected by inundation as a result of a tsunami. In addition, the project site is relatively flat, with no steep areas that would have the potential to generate mudflows during operation. Folsom Reservoir could be subject to a seiche; however, the reservoir is more than 5.5 miles from the site. Therefore, there would be no impact related to tsunami, seiche, or mudflow and these issues are not addressed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.9-1: Short-term construction-related and operational water quality degradation

Development of the project site as a future corporation yard could result in water quality degradation from construction activities, as well as from operational sources of water pollutants. This impact would be **potentially significant**.

Storm drainage within the project site occurs naturally via ditches. While the project itself would not include any development or construction that would affect water quality or waste discharge requirements, approval of the SOIA/annexation area would remove barriers for the project site to be developed as corporation yard in the future. Construction and operation of such development could result in activities with the potential to degrade water quality.

Project construction activities may involve ground-disturbance, trenching, facility construction, and vegetation removal. These activities would create the potential for soil erosion and sedimentation of stormwater drainage systems, both within and downstream of the project site. The construction process may also result in accidental release of other pollutants to surface waters, including oil and gas, chemical substances used during construction, waste concrete, and wash water. Many construction-related waste products have the potential to degrade existing water quality 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.

The Section 402 NPDES Construction General permits require project proponents to incorporate general site design control measures into project design. These control measures may include conserving natural areas, protecting slopes and channels, and minimizing impervious areas. Treatment control measures may include use of vegetated swales and buffers, grass median strips, detention basins, wet ponds, or constructed wetlands, infiltration basins, and other measures. Filtration systems may be either mechanical (e.g., oil/water separators) or natural (e.g., bioswales and settlement ponds). Selection and implementation of these measures would occur on a project-by-project basis depending on project size and stormwater treatment needs. NPDES MS4 permittees (e.g., City of Folsom) are also required to develop and enforce ordinances and regulations to reduce the discharge of sediments and other pollutants in runoff, and must verify compliance. NPDES Construction General permittees are required to develop a SWPPP for each site, which include BMPs to reduce potential construction impacts. New development that would introduce 10,000 or more square feet of new impervious surfaces would be required under Provision C.3 of the NPDES program to incorporate LID strategies such as stormwater reuse, onsite infiltration, and evapotranspiration.

In addition, any future development within the project site would have to adhere to City of Folsom NPDES permit requirements and City of Folsom Municipal Code requirements related to Stormwater Management and Discharge Control (Folsom Municipal Code 8.70). Projects that disturb 1 acre or more would be required to comply with the City's NPDES Municipal Stormwater Permit for stormwater discharges (Central Valley RWQCB Order No. R5-2015-0023, NPDES No. CAS082597) prior to commencing construction activities. Permit requirements include development and implementation of a SWPPP prior to disturbing a site. The SWPPP must include a site-specific listing of the potential sources of stormwater pollution, anticipated stormwater discharge locations, BMPs for construction waste handling and disposal, and non-stormwater management, among other items.

Development within the project site would increase impervious surfaces, which could result in additional stormwater runoff. Common urban pollutants (e.g., petroleum hydrocarbons, lubricants, herbicides and pesticides, sediments, and metals [generated by the wear of automobile parts]) could be transported in runoff, washed by rainwater from rooftops and landscaped areas into onsite and local drainage networks, and potentially adversely affect the quality of receiving surface waters or groundwater. Infiltration of stormwater runoff into the soil would also likely decrease because of an increase in impermeable surfaces. As part of a future development, a stormwater drainage system would be required to collect and convey stormwater runoff from developed areas. Future stormwater drainage systems could include open channels and multi-use stormwater quality/detention facilities.

According to the 2017 "Stormwater Quality Design Manual" (Sacramento Stormwater Quality Partnership 2017), LID must be incorporated into future development projects in the City, based on the requirements of the City's NPDES stormwater permit. LID emphasizes the use of onsite natural features integrated with engineered hydrologic controls distributed throughout a watershed that promote infiltration, filtration, storage, and evaporation of runoff close to the source to manage stormwater. The City employs a full-time Stormwater Inspector to inspect construction projects for compliance with the City's stormwater regulations, conduct enforcement as necessary, and respond to incidents involving illegal discharges to the City's storm drain system or local creeks and rivers.

Typical BMPs used to meet regulatory standards include:

Construction

- ▲ Limit excavation and grading activities to the dry season (April 15 to October 15) to the extent possible to reduce the chance of severe erosion from intense rainfall and surface runoff, as well as the potential for soil saturation in swale areas.
- ▲ Cover stockpiles of loose material; diverting runoff away from exposed soil material; locating and operating sediment basin/traps to minimize the amount of offsite sediment transport and dissipate energy; and removing any trapped sediment from the basin/trap for placement at a suitable location on site, away from concentrated flows, or removal to an approved disposal site.
- ▲ Provide erosion protection on all exposed soils either by revegetation or placement of impervious surfaces after completion of grading.
- ▲ Store hazardous materials such as fuels and solvents used on the construction sites in covered containers that are protected from rainfall, runoff, and vandalism.

Operation

- ▲ Design roadway and parking lot drainage to run through grass median strips that are contoured to provide adequate storage capacity and to provide overland flow, detention, and infiltration before runoff reaches culverts or detention basins. Oil and sediment separators or absorbent filter systems may also be installed within the storm drainage system to provide filtration of stormwater before discharge to reduce the potential for water quality impacts.
- ▲ Use integrated pest management techniques (i.e., methods that minimize the use of potentially hazardous chemicals) in landscaped areas.
- ▲ Handle, store, and apply potentially hazardous chemicals in accordance with all applicable laws and regulations.
- ▲ Implement an erosion control and revegetation program designed to allow re-establishment of native vegetation on slopes in undeveloped areas as part of the long-term sediment control plan.
- ▲ Use alternative discharge options to protect sensitive fish and wildlife populations in areas where habitat for fish and other wildlife would be threatened by facility discharge.

While the above provisions would apply to future development upon annexation, there are no proposed stormwater management plans for the project to demonstrate compliance. Thus, this impact would be **potentially significant**.

Mitigation Measure 3.9-1: Development of a drainage master plan for the project site.

Prior to final design of a future corporation yard, the City of Folsom will prepare and implement a drainage master plan for the entire project site that includes the following items and shall be consistent with the 2017 "Stormwater Quality Design Manual":

- ▲ an accurate calculation of pre-project and post-development runoff scenarios, obtained using appropriate engineering methods that accurately evaluate potential changes to runoff, including increased surface runoff;
- ▲ details on onsite detention basin and drainage channel design that are consistent with the requirements of the City of Folsom and provide enough storage to accommodate peak storm events and no increase post-development flows or flood conditions off site;

- ▲ identification of design features that avoid site development from occurring in the 200-year floodplain;
- ▲ implementation of appropriate BMPs to address construction and operational stormwater quality consistent with City requirements;
- ▲ a description of any treatments necessary to protect earthen channels from erosion, and modifications that may be needed to existing underground pipe and culvert capacities;
- ▲ a description of the proposed maintenance program for the onsite drainage system; and
- ▲ a description of the project-specific standards for installing drainage systems.

Significance after Mitigation

Implementation of Mitigation Measure 3.9-1 would require that stormwater drainage master planning be prepared for the entire project site as part of future site development. This process would require compliance with City stormwater quality requirements that are tied to its NDPEs permit requirements to protect surface water quality. Thus, implementation of Mitigation Measure 3.9-1 would mitigate this impact to a **less-than-significant** level.

Impact 3.9-2: Deplete groundwater supplies or interfere substantially with groundwater recharge

Future development would result in creation of impervious surfaces of sufficient area in relation to the size of the groundwater basin that could interfere with groundwater recharge. In addition, water supply for future development of the project site would not be from groundwater. Project groundwater impacts would be **less than significant**.

Water supply for future development of the within the project site would be served by the City of Folsom, and the City would not use groundwater to supply to project site. Therefore, the project would not directly deplete groundwater supplies. Water supply is discussed further in Section 3.12, *Utilities and Service Systems*.

Groundwater recharge occurs primarily through percolation of surface waters through the soil and into the groundwater basin. The addition of significant areas of impervious surfaces (e.g., roads, parking lots, buildings) can interfere with this natural groundwater recharge process. Upon full project buildout, most of the project site would be covered with impervious surfaces, which would limit the potential for groundwater percolation to occur on the project site. However, given the relatively large size of the groundwater basin in the Folsom area, the areas of impervious surfaces added as a result of project implementation would not substantially affect the recharge capabilities of the local groundwater basin.

As discussed above, onsite drainage plans would be designed to retain, capture, and convey increased runoff in accordance with the City design standards and State requirements such as Provision C.3 site control features. These standards and regulations generally require the use of LID features such as vegetated swales, permeable paving, use of landscaping for infiltration, and other measures that would retain runoff as much as possible and allow for onsite infiltration. Furthermore, the project is not anticipated to significantly affect groundwater quality because sufficient stormwater infrastructure would be constructed as part of project to detain and filter stormwater runoff and prevent long-term water quality degradation.

Thus, the potential for subsequent development projects in the project site to deplete groundwater resources or interfere with groundwater recharge would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.9-3: Alteration of drainage pattern or increase in rate or amount of surface runoff in a manner that would result in substantial erosion or siltation

Future development of the project site could lead to alteration of the drainage pattern of the site. This could result in increased stormwater runoff and an increase in susceptibility to downstream flooding and sediment issues. This would be a **potentially significant** impact.

The project site is currently vacant, undeveloped land. No change in land use, drainage, or rate of stormwater runoff would result from the SOIA/annexation. However, this analysis considers the potential effects on drainage if the project site is developed as a corporation yard for the City in the future.

As discussed above, development of the project site would increase the quantity of impervious surfaces, which could alter the drainage pattern, or increase the rate or amount of surface runoff. The increased runoff could also discharge at a greater rate, leading to higher peak flows during storm events that could increase the potential for stormwater to cause flood conditions and to transport urban pollutants.

Runoff from the project site currently drains naturally, which would likely be replaced by other stormwater infrastructure when the land is developed.

Additionally, projects would be required to comply with the City of Folsom's General Plan policy 28.2 regarding the quality and quantity of surface water runoff discharge rates (City of Folsom 1993). Further, NPDES Provision C.3 requirements include post-construction drainage control requirements that address the volume of offsite flows, which can be effective in reducing sedimentation effects on downstream receiving waters. The City is required to plan, design, and develop sites to: (1) protect areas that provide important water quality benefits necessary to main riparian and aquatic biota, and/or are particularly susceptible to erosion and sediment loss; (2) limit increases of impervious areas; (3) limit land disturbance activities such as clearing and grading, and cut-and-fill to reduce erosion and sediment loss; (4) limit disturbance of natural drainage features and vegetation; and (5) reduce erosion and, to the extent practicable, retain sediment on site during and after construction.

Although the local, State, and federal policies and regulations specified above would provide for preventative measures to limit or avoid substantial alteration of the existing drainage pattern of the project site, individual projects would have the potential to adversely affect surface runoff at a project-specific level because of the addition of impervious surfaces. This would be a **potentially significant** impact.

Mitigation Measures

Implement Mitigation Measure 3.9-1: Development of a drainage master plan for the project site.

Significance after Mitigation

Implementation of Mitigation Measure 3.9-1 would require that stormwater drainage master planning be prepared for the entire project site as part of future site development that would require compliance with City drainage and stormwater quality requirements. Thus, implementation of Mitigation Measure 3.9-1 would mitigate this impact to a **less-than-significant** level.