

## 3.12 HYDROLOGY AND WATER QUALITY

This section identifies the regulatory context and policies related to hydrology and water quality, describes the existing hydrologic conditions at the project site, and evaluates potential hydrology, drainage, and receiving water-quality impacts of the proposed project. Potential effects related to water supply and sewer/wastewater facilities are addressed in Section 3.11, "Utilities and Service Systems."

Several comment letters regarding hydrology and water quality were received in response to the notice of preparation (see Appendix A). The Central Valley Regional Water Quality Control Board (RWQCB) expressed concerns about the regulatory context that would apply to the project. Placer County recommended that the EIR evaluate potential impacts related to groundwater recharge as a result of increased impervious surfaces, feasibility and benefits of implementing bioretention swales or other features, feasibility and benefits of utilizing recycled water, and potential impacts related to groundwater quality and quantity. Additionally, comments were received from members of the public regarding potential impacts related to Folsom Dam failure, potential flood hazards, capacity of the modified retention system, and infrastructure and downstream effects. These comments are addressed in this section.

### 3.12.1 Regulatory Setting

#### FEDERAL

##### Clean Water Act

The US 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. Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by CWA, 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 the environment and 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 the discussion of 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 below).

### **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 according to their potential for flooding, as delineated on FIRMs. Special Flood Hazard Areas are the areas identified as having a 1 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 SWRCB and each of the nine RWQCBs power to protect water quality and is the primary vehicle for implementation of California’s responsibilities under the CWA. The applicable RWQCB for the proposed project is the Central Valley RWQCB. The SWRCB 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, freshwater 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, 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 General Permit**

The SWRCB adopted the statewide NPDES General Permit in August 1999. The state requires that projects disturbing more than 1 acre of land during construction file a Notice of Intent with the RWQCB to be covered under the 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 practices (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 that eventually drain untreated into a local waterbody.

As a Phase II community, the City is currently required to operate under an NPDES Municipal Stormwater Permit administered by the state. The City's Stormwater Management Plan was adopted and approved by the RWQCB, and the City received a Phase II Stormwater Permit in 2004. The SWRCB is currently updating the General Phase II permit requirements, which are expected to be more in line with the current Phase I requirements. Upon the adoption of the updated General Phase II Permit by the state, the City will update its Stormwater Permit to comply with the new requirements.

## **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 (CWC), 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 (CWC 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 (CWC 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 (CWC Section 10723). West Placer Groundwater Sustainability Agency (WPGSA) consists of the cities of Roseville and Lincoln, Placer County Water Agency, Nevada Irrigation District, and Placer County. The WPGSA is one of a group of five GSAs formed within the North American Subbasin that consist of the West Placer, Sacramento, South Sutter Water District, Sutter County, and Recreation District 1001 GSAs.

The SGMA also requires DWR to categorize each groundwater basin in the state as high, medium, low, or very low priority to ensure the sustainability of groundwater resources (CWC Sections 10720.7, 10722.4). On December 15, 2014, DWR announced its official "initial prioritization" of the state's groundwater basins for purposes of complying

with the SGMA, and this priority list became effective on January 1, 2015 (DWR 2022a). DWR has ranked the North American Subbasin as “high priority.” The Groundwater Sustainability Plan for the North American Subbasin was published in 2021 (RD 1001 et al. 2021).

## 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. 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), which the CVFPB adopted on June 29, 2012. The Central Valley Flood Protection Act calls for updates to the CVFPP every five years. The 2022 CVFPP Update, adopted in December 2022, serves as California’s strategic and financial blueprint to improve flood risk management in the Central Valley and focuses on flood system climate resiliency; accountability and adaptation through performance tracking; and strategic alignment with other state water management planning efforts (DWR 2022b).

The CVFPB authority and procedures are derived from the California Water Code and Title 23 of the California Code of Regulations (CCR). These regulations provide guidance when determining if a permit is needed for any project that may encroach upon, improve, alter or affect adopted plans of flood control (including federal/State flood control systems, regulated streams and designated floodways under CVFPB’s jurisdiction). An encroachment permit is required for any proposed work that is located:

- ▶ between or in the vicinity of any Federal Project Levees within a State Plan of Flood Control;
- ▶ within 100-foot proximity of a non-leveed Regulated Stream listed in California Code of Regulations, Title 23, Waters, Division 1, Article 8, Table 8.1;
- ▶ within a Designated Floodway that has been adopted by the CVFPB; or
- ▶ within a Sacramento San Joaquin Drainage District (SSJDD) Easement.

The project is not located in the vicinity of any Federal Project Levees. Pleasant Grove Creek, which flows through the project site, is identified in Table 8-1 of Title 23 as a Regulated Stream. The CVFPB has not adopted Pleasant Grove Creek as a Designated Floodway and the project site is not located within a SSJDD easement. However, because the project includes activities within 100 feet of Pleasant Grove Creek (which is a Regulated Stream), including a new bridge across the creek, an encroachment permit from the CVFPB would be required for bridge construction.

## LOCAL

### City of Roseville General Plan

The Open Space and Conservation and Safety Elements of the *City of Roseville General Plan (2020a)* contain the following policies that may be applicable to the project:

- ▶ **Policy OS3.1:** Utilize cost-effective urban run-off controls, including Best Management Practices, such as low impact development and naturalized stormwater management features, to reduce the rate of stormwater runoff and limit urban pollutants from entering the watercourses.
- ▶ **Policy OS3.2:** Implement erosion control and topsoil conservation measures to limit sediments within watercourses.
- ▶ **Policy OS3.3:** Ensure a buffer area between waterways and urban development to protect water quality and riparian areas.
- ▶ **Policy SAFE2.1:** Continue to regulate, through land use, zoning, and other restrictions, all uses and development in areas subject to potential flooding and require new development to comply with the State Plan of Flood Control requirements.

- ▶ **Policy SAFE2.5:** Minimize the potential for flood damage to public and emergency facilities, utilities, roadways, and other infrastructure.
- ▶ **Policy SAFE2.6:** Require new developments to evaluate potential flood hazards, and provide mitigation to ensure that the cumulative rate of peak run-off is maintained at pre-development levels.
- ▶ **Policy SAFE2.9:** Where feasible, maintain natural stream courses and adjacent habitat and combine flood control, recreation, water quality, and open space functions

### Placer County Flood Control and Water Conservation District

The Placer County Flood Control and Water Conservation District (PCFCWCD) was established by SB 1312, effective August 23, 1984. The PCFCWCD develops regional strategies for flood control management. In 1990, the PCFCWCD published the Stormwater Management Manual (SWMM) that contains specifications and policies for the design of storm drain facilities. The SWMM criteria are referenced in Section 10 of the City's Improvement Standards.

### City of Roseville Improvement Standards

Section 10 of the City's Improvement Standards establish requirements for stormwater drainage systems in the City of Roseville to ensure public safety, prevent flooding, and protect water quality (City of Roseville 2025).

### City of Roseville Stormwater Management Program

The City's Stormwater Management Program (SWMP) contains policies, activities, and strategies that comprise the City's minimum control measures and BMPs that address NPDES requirements for the Phase II Stormwater Permit. The six minimum control measures required under the NPDES permit are public outreach, public involvement, illicit discharge detection and elimination, construction site runoff, new development and redevelopment, and municipal operations. Some specific control measures described in the SWMP include storm drain labeling, development of a storm sewer system map, establishing a stormwater ordinance, site inspections to identify illicit connections and non-stormwater discharges to the storm sewer, and structural controls (such as detention ponds, vegetative areas, and runoff pretreatment) and non-structural controls (such as alternative construction methods, site design, and zoning) (City of Roseville 2004).

The City adopted the "Urban Stormwater Quality Management and Discharge Control Ordinance" in 2006 to establish a regulatory framework to implement construction and post-construction stormwater controls and regulate illicit discharges and connections to the City's stormwater conveyance system from both residential and business sources. The City has adopted the *Stormwater Quality BMP Guidance Manual for Construction* (City of Roseville 2011) and the *West Placer Storm Water Quality Design Manual* (Placer County 2022). The City has the authority during plan checks and site inspections to enforce the SWMP. Additionally, prior to final approval, the owner of any stormwater control structure is required to submit an operations and maintenance manual and a proposed maintenance schedule.

### Grading Ordinance

Section 16.20.040 of the Roseville Municipal Code regulates stockpiling and grading and addresses conditions under which permits and grading plans are required. Section 16.20.070 identifies grading plan performance standards. Both Minor and Major grading plans are required by the City. A Major grading plan is required for any project that would result in the placement of fill in a channel or tributary that carries flow of 200 cubic feet/second or more during a 10-year storm event. Major grading plans must be reviewed and approved by the Planning Commission. All grading plans must comply with the following criteria:

- A. Fill or cut slopes with a height exceeding five feet shall not exceed a slope of 4:1.
- B. When grading around native oak trees:
  1. Cut or fill slopes exceeding two feet in height shall not be permitted within a distance of 1.5 times the radius of the tree's protected zone,
  2. the grade shall not be raised or lowered around more than 50 percent of the protected zone, and

3. the grading shall not change the drainage pattern within a distance of 1.5 times the radius of the tree's protected zone.

Section 16.20.020 requires that all grading be performed in accordance with either City Improvement Standards or Chapter 16 of the Zoning Ordinance, whichever is more restrictive. A project applicant must have an Improvement and/or Grading Plan along with a site-specific SWPPP prior to the start of grading activities. Slopes or banks along creek channels must be designed with proper slope protection to prevent soil erosion and channel-bank undercutting.

Improvements associated with the project would be exempt from the grading ordinance, which states in the Grading Plan Exemptions subsection that a grading plan is not required for:

1. Grading authorized as a condition of a separate discretionary approval involving, but not limited to, a subdivision map, conditional use permit, design review permit or a tree permit.

### **Flood Damage Prevention Ordinance**

Section 9.80 of the Roseville Municipal Code is the Flood Damage Prevention ordinance. Land uses and development within the City's regulatory floodplain are restricted to protect residents and structures from risks associated with flooding. Railroads, streets, bridges, utility transmission lines, pipelines, and other similar uses of a primarily open space nature may be permitted in the floodplain with the approval of a flood encroachment permit. All uses permitted within the floodplain must comply with Section 19.80.040 of the municipal code that prohibits any development from increasing peak flows; adversely affecting the stream channel, increasing flood heights, or having an adverse effect on a proposed use. An adverse effect on base flood elevations occurs when the cumulative effect of the proposed development will increase the base flood elevations by one-tenth of one foot or more at any point outside of the property controlled by the developer (Section 9.80.040). Within the floodway, all new development is prohibited unless a certified professional engineer certifies that the encroachment will not result in any increase in flood levels (Section 9.80.210). In addition, the following conditions apply:

- ▶ Any fill placed in the floodplain must be shown to serve some beneficial purpose, must be limited to the minimum amount necessary to meet its purpose, and any fill or excavation must be protected against erosion by rip-rap, vegetative cover, or bulkheading.
- ▶ Storage or processing of materials that are buoyant, flammable, toxic, explosive, or could be injurious to animal or plant life in time of flooding is prohibited. Storage of other materials may be allowed if it will not be damaged by floods and is readily removable from the area within the time available after flood warning. All materials stored in the floodplain must be anchored or be readily removable during flood season.
- ▶ The City Council may grant a variance from these ordinances for a project, taking into consideration public safety, project engineering, and the public service provided by the project (Section 9.80.310).

## **3.12.2 Environmental Setting**

### **HYDROLOGY AND DRAINAGE**

#### **Regional Hydrology**

The Pleasant Grove Creek watershed totals approximately 30,000 acres with several tributaries, including South Branch Pleasant Grove Creek, Kaseburg Creek, Coyote Creek, and University Creek. The watershed's tributaries were historically dry or very nearly dry in the summer months but are now mostly perennial due to urban development and rice farming. Pleasant Grove Creek receives the treated effluent from the City of Roseville's Pleasant Grove Wastewater Treatment Plant (City of Roseville 2020b).

Pleasant Grove Creek discharges into the Pleasant Grove Creek Canal west of the project site in Sutter County, which flows into the Natomas Cross Canal and then into the Sacramento River near Verona. The Natomas Cross Canal watershed is within the Sacramento River Basin. The Sacramento River Basin covers approximately 26,500 square

miles and is bounded by the Sierra Nevada to the east, the Coast Ranges to the west, the Cascade Range and Trinity Mountains to the north, and the Delta-Central Sierra area to the south. The average runoff from the Basin is estimated to be 21.3 million acre-feet per year (City of Roseville 2020b).

The Basin Plan designates the following beneficial uses for the Sacramento River: municipal and domestic supply, agricultural irrigation, contact and non-contact recreation, warm and cold freshwater habitat, warm and cold migration, warm and cold spawning, wildlife habitat, and navigation (Central Valley RWQCB 2019). Applying the Central Valley RWQCB's "tributary rule," the beneficial uses of any specifically identified water body generally also apply to all its tributaries.

## Local Hydrology

Pleasant Grove Creek and the Pleasant Grove Creek Bypass Channel traverse the project site in an east-west direction, bisecting the site into a north and south parcel. Previous farming activities at the project site have modified the original hydrology/drainage of the site over 70+ years. The north and south parcels of the project site drain toward Pleasant Grove Creek and the Pleasant Grove Creek bypass channel, respectively. The southern portion of the site was used more recently for flood control purposes (a constructed channel). Of the 241-acre project site, 16 acres comprise the Pleasant Grove Creek Floodplain and a retention basin bypass channel.

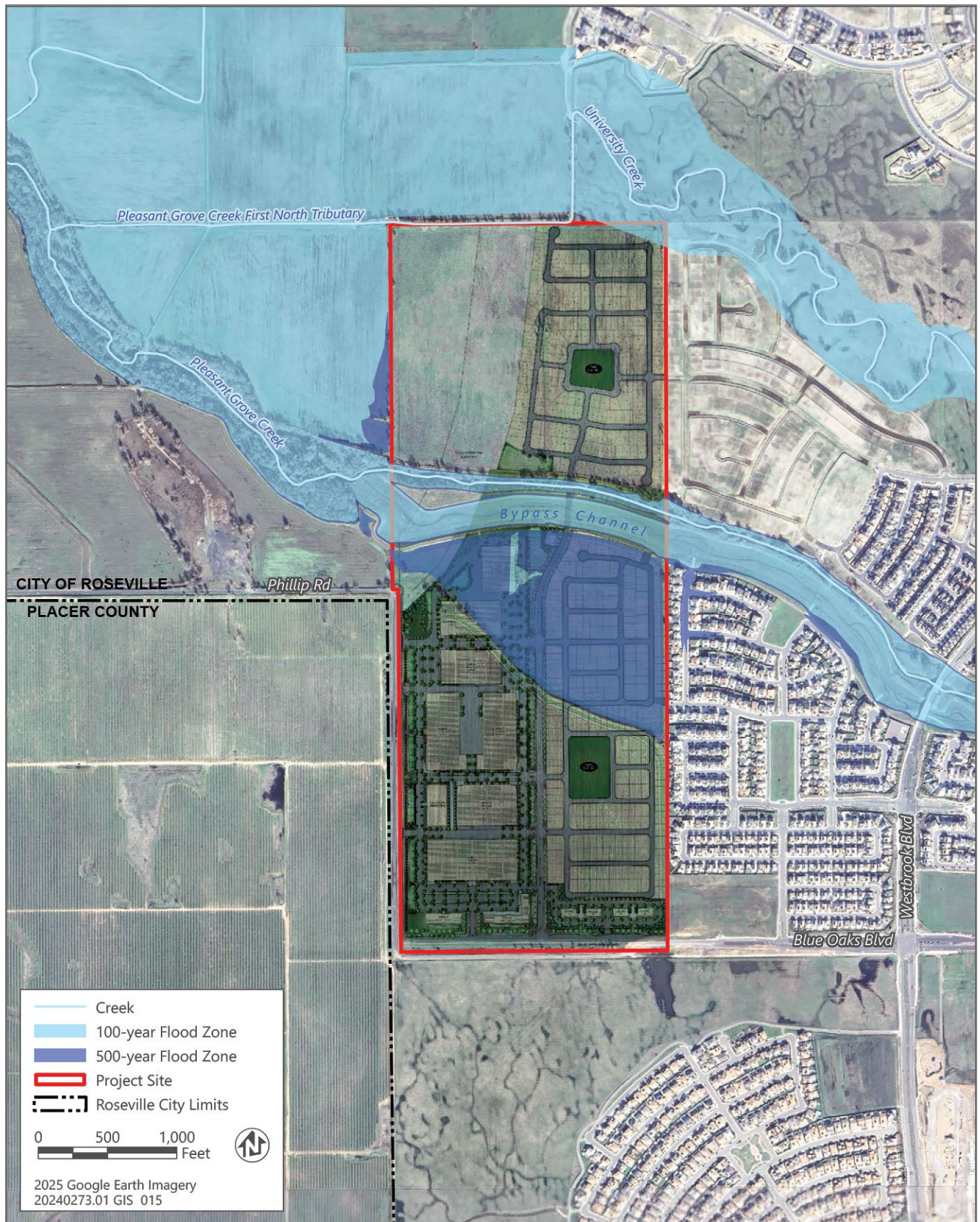
Additionally, a channelized, intermittent tributary to Pleasant Grove Creek, known as Pleasant Grove Creek First North Tributary (University Creek), extends east to west along the northern boundary of the project site.

## Flood Conditions

The Pleasant Grove Creek and Pleasant Grove Creek Bypass Channel are covered by a FEMA Zone AE special flood hazard area, as shown on the currently effective FIRM panel 06061C0920H Letter of Map Revision (20-09-0505P), dated November 23, 2020. The Zone AE of the creek and bypass channel is also designated as a Regulatory Floodway within the project site. On the south overbank area of the bypass channel, a relatively small area of Zone AE has been designated. A small area of the northeast corner of the project site lies within a Zone A special flood hazard area of a small creek (University Creek). The 100-year and 500-year flood zones as they relate to the project site and the surrounding area are shown in Figure 3.12-1.

SB 5 (2007) enacted the Central Valley Flood Protection Act of 2008 to provide additional protection for urban areas within the 200-year floodplain (0.5 percent annual exceedance probability) that meet five specific locational criteria: within the Sacramento-San Joaquin Valley, within an urban area of more than 10,000 people, within a FEMA flood hazard zone, within an area of potential flood depth exceeding 3 feet, and in a watershed of more than 10 square miles. Within the City, the SB 5 requirements apply to Pleasant Grove Creek (the mainstem and the North Branch) (City of Roseville 2020b).

Placer County and the cities of Roseville, Rocklin, Lincoln, and Auburn participated in the *Auburn Ravine, Coon, and Pleasant Grove Creeks Flood Mitigation* (PCFCWCD 1993) to address concerns related to flooding related to regional development. The study found that the unmitigated peak flow increases would have the potential to increase flows in the Natomas Cross Canal by less than 3.6 inches along tributary streams, and increased runoff volumes would have the potential to increase flooding by approximately 1.2 inches in the ponding area upstream of the Natomas Cross Canal (PCFCWCD 1993). While shallow, these increases would inundate several hundred additional acres in Sutter County during a major flood. The study recommended a combination of regional and local detention and retention basins, adoption of a regional floodplain management plan, and adoption of grading ordinances and policies to remediate ongoing and prevent future flood hazards. Subsequently, the City has established a fee program to construct a regional retention basin to address the increase in runoff from development within the city.



Source: Data downloaded from FEMA in 2025; adapted by Ascent in 2025.

Figure 3.12-1 Flood Zones

The project site is part of the City-owned property known as Reason Farms, which totals approximately 1,700 acres. The City purchased the property in 2003 for the retention basin project. The project was originally known as the Reason Farms Retention Basin Facility and was later renamed to the Pleasant Grove Stormwater Retention Basin Facility. The City is the project proponent for that facility, which was preliminarily designed and had an approved EIR, but was never constructed. The EIR (State Clearinghouse [SCH] # 2002072084) for the retention facility was certified in 2003. As of the writing of this EIR, the City is in the process of designing the retention basin, and preparation of a Subsequent EIR is underway; public release of the Draft EIR is planned for fall 2026. The project site is in an area that is no longer needed for the retention basin project (which would be located within the 1,700-acre Al Johnson Wildlife Area [formerly part of Reason Farms] to the west of the project site). The preferred alternative for the retention basin project has not been selected as of the writing of this EIR. The volume stored by the project is expected to total between 2,070 af and 3,330 af, within storage areas in a south basin, north basin, and in-channel storage. The northern basin site includes a proposed earthen embankment which would run parallel to and south of University Creek and tie-in to high ground within the Phillip Road Project site's northern boundary. The City is currently collecting drainage impact fees from new development projects to fund construction of this project, which will be constructed as funds are made available, estimated in 2028.

## Groundwater Hydrology

The City of Roseville is located within the approximately 350,000-acre North American River groundwater subbasin, which is a groundwater basin that extends beneath western Placer County, southern Sutter County, and northern Sacramento County, and is a subbasin of the broader Sacramento Groundwater Basin (DWR 2006). The subbasin is bounded by the Bear River on the north, the Feather and Sacramento Rivers on the west, the American River on the south, and a north/south line extending from the Bear River to Folsom Lake that passes about 2 miles east of the City of Lincoln. DWR estimates that the storage capacity of the North American subbasin is approximately 4.9 million af and is not in overdraft (City of Roseville 2020b).

The North American subbasin hydrogeology is characterized by an upper groundwater system and a lower groundwater system. The upper groundwater system exists in the deep Quaternary alluvial deposits. The lower groundwater system is largely confined and exhibits recharge characteristics that indicate that it is somewhat hydraulically isolated from the upper system. Water-bearing features in the upper system are generally limited to loose unconsolidated sediments, with water flowing intermittently. The vadose zone is relatively deep and becoming deeper over time due to groundwater withdrawal for agricultural use (DWR 2006).

Under natural conditions, groundwater recharge results from infiltration of precipitation (rain and snow). The rate and quantity of water reaching the aquifer depends on factors that include the amount and duration of precipitation, soil type, vertical permeability, clay content, slope, land cover, and the presence of a cemented hardpan or bedrock. Most soils can be categorized into hydrologic soil groups based on runoff-producing characteristics. Soils containing hardpan occupy more than half of the valley on the east side of the Sacramento River and these hardpans severely restrict downward movement of water.

The project site is located within the Central Area of the North American subbasin. Currently the groundwater levels are between 0 and 15 feet below ground surface near the American and Bear Rivers. Over time, groundwater levels have risen in response to decreased groundwater use but levels still vary in response to climatic conditions when surface water availability decreases and groundwater pumping increases. Groundwater levels declined noticeably during the 2012 to 2016 drought but began to recover following the end of that drought. However, they have not generally fully recovered to pre-drought levels (RD 1001 et al. 2021).

The City is a member of the WPGSA, which is the Groundwater Sustainability Agency tasked with complying with the SGMA in Roseville. Currently, the City operates six groundwater well facilities. As part of the City's groundwater program, it has invested in Aquifer Storage and Recovery, which provides the capability to supplement the groundwater basin through direct injection of drinking water into the groundwater basin that can be later recovered for drinking water use during dry periods (City of Roseville 2020a).

## Stormwater Drainage

The City manages the stormwater infrastructure and flows within the city. In the city, the stormwater drainage system consists of surface runoff to streets, subsurface storm drainage pipelines, canals, and retention basins. As noted above, the Pleasant Grove Stormwater Retention Basin Project is located within a 1,700-acre parcel to the west of the project site and would mitigate increased volumetric runoff from Roseville's existing and future development within the watershed. There are no existing stormwater drainage facilities on the project site.

## WATER QUALITY

### Surface Water Quality

Treated tertiary effluent from the City's Pleasant Grove Wastewater Treatment Plant is discharged directly to Pleasant Grove Creek southeast of the project site. In accordance with state requirements, surface water quality samples are collected on a weekly basis and analyzed for a variety of constituents to ensure that the discharge does not adversely affect water quality in Pleasant Grove Creek or the Sacramento River (City of Roseville 2020b).

Pleasant Grove Creek is a 303(d) listed waterbody for pyrethroids, dissolved oxygen, toxicity, cypermethrin, and bifenthrin (SWRCB 2021).

### Groundwater Quality

Nitrate concentrations in the Central Area of the North American subbasin are typically below the maximum contaminant levels for drinking water; however, nitrate concentrations are trending upward in most of the subbasin. Elevated iron and manganese levels may also be encountered in the Central Area. In the WPGSA area, total dissolved solid levels are generally stable or decreasing. Groundwater wells in the project vicinity had slightly elevated levels of arsenic, but low levels of nitrate, total dissolved solids, boron, iron, and manganese (RD 1001 et al. 2021).

## 3.12.3 Environmental Impacts and Mitigation Measures

### METHODOLOGY

Evaluation of potential hydrologic and water quality impacts is based on a review of existing documents and studies that address water resources in the vicinity of 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. This analysis incorporates the findings of the *Phillip Road Site Potable Water Master Plan* (Laugenour and Meikle 2025a). The analysis also incorporates the findings of the *Preliminary Drainage Study for the Phillip Road Site* (Laugenour and Meikle 2025b). Both of these reports are included in Appendix E. 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

Thresholds of significance are based on Appendix G of the State CEQA Guidelines. The project would have a significant impact related to hydrology and water quality if it would:

- ▶ violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
- ▶ substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- ▶ substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would

- result in substantial erosion or siltation on- or off-site;
  - 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;
  - impede or redirect flood flows
- ▶ result in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or
- ▶ conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

## ISSUES NOT DISCUSSED FURTHER

The project site is located inland with no large water bodies located in the vicinity, and there is no known history of mud flow in the vicinity. The project would not subject people or structures to a significant risk of inundation from sea level rise, tsunami, seiche, or mudflow. Therefore, there would be no impact, and this issue is not discussed further.

## ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

### Impact 3.12-1: Violate Water Quality Standards or Waste Discharge Requirements, Otherwise Degrade Water Quality, or Interfere with Implementation of a Water Quality Control Plan

Project construction activities such as grading, excavation, trenching, and spoil pile storage could result in erosion and sedimentation, and discharge of other nonpoint source pollutants. In addition, operation of the proposed mixed-use development has the potential to generate polluted runoff associated with storage of chemicals and vehicle/equipment leaks. To avoid or minimize the potential for adverse construction- and operation-related effects on water quality, the project applicant would be required to develop and implement a SWPPP and BMPs and comply with the City's Urban Stormwater Quality Management and Discharge Control Ordinance, West Placer Storm Water Quality Design Manual, PCFCWCD's Stormwater Management Manual, and Section 16.20.040 of the Roseville Municipal Code that include measures to control, prevent, remove, or reduce pollution. Therefore, short- and long-term impacts on surface and groundwater quality would be **less than significant**.

#### Short-Term Construction Impacts

All earth-disturbing activities during construction would be subject to the NPDES. The NPDES Permit Program, administered by the Central Valley RWQCB, helps to control pollution in stormwater by regulating sources of pollution at construction sites that would result in the discharge of pollutants into stormwater and downstream receiving waters during both construction and operational activities. As required by the NPDES, the project would be required to obtain coverage under the General Permit for discharges associated with construction activity (Construction General Permit Order 2022-0057-DWQ). The NPDES General Permit identifies limits on discharge, monitoring and reporting requirements, and other provisions to ensure that the discharge does not adversely affect water quality or human health. Construction activities subject to the NPDES General Permit include clearing, grading, and other ground-disturbing activities such as stockpiling or excavation. The NPDES General Permit requires development and implementation of a SWPPP and BMPs such as maintaining or creating drainages to convey and direct surface runoff away from bare areas, and installing physical barriers such as berms, silt fencing, wattles, straw bales, and gabions. Because the project applicant would be required to comply with the provisions of the NPDES General Permit, including preparation of a SWPPP and implementation of all identified BMPs, short-term construction impacts associated with water quality standards and waste discharge requirements would be minimized.

A bridge would be also constructed across Pleasant Grove Creek and Pleasant Grove Creek Bypass Channel to connect the north and south parcels. Bridge construction would include installation of 24-inch diameter bridge supports within the Pleasant Grove Creek channel and the Pleasant Grove Creek Bypass Channel. Permitting would be required for

construction of the bridge as the abutments and a pier would be located within the Pleasant Grove Creek and adjacent Pleasant Grove Creek Bypass Channel. As noted above, the bridge would be needed to connect the north and south parcels; therefore, bridge construction would not occur until development of the north parcel occurs.

In addition, the project would be required to comply with the City's Urban Stormwater Quality Management and Discharge Control Ordinance including implementing measures from the Stormwater BMP Guidance Manual for Construction and the West Placer Storm Water Quality Design Manual (Placer County 2022). The City has the authority during plan checks and site inspections to enforce the City's SWMP.

### **Long-Term Operational Impacts**

The project includes development of a mix of uses, including residential, medical, retail, innovation, parks, and open space, on land that is currently undeveloped. This development would result in an increase of new impervious surfaces and a permanent bridge over Pleasant Grove Creek and Pleasant Grove Creek Bypass Channel. The project also has the potential to generate polluted runoff associated with storage of chemicals and vehicle/equipment leaks. However, the project would be designed to minimize impacts to water quality including providing landscape setbacks that would serve as a buffer along streets and Pleasant Grove Creek.

The City operates under an NPDES Municipal Stormwater Permit administered by the state. The City's Stormwater Management Plan was adopted and approved by the Central Valley RWQCB and the City received a Phase II Stormwater Permit in 2004. The waste discharge requirements contained in the NPDES Municipal Stormwater Permit have been designed to be consistent with the water quality standards and goals established in the Central Valley RWQCB's Basin Plan. In compliance with City's Urban Stormwater Quality Management and Discharge Control Ordinance including implementing measures from the Stormwater BMP Guidance Manual for Construction, PCFCWCD's Stormwater Management Manual, and the West Placer Storm Water Quality Design Manual, potential long-term water quality impacts from the project would be minimized.

The project would include implementation of design measures, including stormwater detention basins described in Chapter 2, "Project Description," to minimize impacts to Pleasant Grove Creek and Pleasant Grove Creek Bypass Channel by limiting runoff from the site and managing it in a manner that is consistent with applicable regulations and historic discharge levels. Additionally, the project would be required to comply with the City's Phase II Stormwater Permit, Urban Stormwater Quality Management and Discharge Control Ordinance, West Placer Storm Water Quality Design Manual, and Section 16.20.040 of the Roseville Municipal Code that include measures to control, prevent, remove, or reduce pollution. Thus, short- and long-term impacts on surface and groundwater quality would be **less than significant**.

### **Mitigation Measures**

No mitigation is required.

### **Impact 3.12-2: Substantially Decrease Groundwater Supplies, Interfere with Groundwater Recharge, or Interfere with Implementation of a Sustainable Groundwater Management Plan**

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The proposed project would not directly use groundwater as a water supply source and no wells are proposed as part of the project. However, the project would receive its water supply from the City of Roseville Environmental Utilities, which relies on surface water and groundwater supplies. The project site is undeveloped land and implementation of the project would add additional impervious surface to the site; however, only 176 acres are being considered for development, which would account for less than 0.1 percent of the surface area of the North American River subbasin. Therefore, the project would not substantially decrease groundwater levels nor interfere with groundwater recharge. This impact would be **less than significant**.

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The project would receive its water supply from the City of Roseville Environmental Utilities via a the potable water system transmission lines designed to serve the project, extended from surrounding development. The project would connect to this existing infrastructure via the project's main transmission line at three locations. The first connection is at the intersection of Blue Oaks Boulevard and Westbrook Drive, where a new 24-inch pipe which will either replace

or run parallel to the existing 12-inch pipe in Blue Oaks Boulevard and a new 16-inch pipe continuing north on Phillip Road. The second connection is at the west end of Grasscreek Drive. The third connection will be in the future at Benchmark Drive, when the project begins to develop north of Pleasant Grove Creek. The project is anticipated to require 368 acre-feet per year (afy) of potable water and 575 afy of recycled water, resulting in a total water demand for the project of 943 afy (Laugenour and Meikle 2025a). The proposed project would not directly use groundwater as a water supply source and no wells are proposed as part of the project.

The City relies on surface and groundwater supplies. Groundwater makes up approximately 6 percent of the City's total water supply and is available for use as part of the City's water supply portfolio in all year types including normal, single dry, or multiple dry year scenarios (see Section 3.11, "Utilities and Service Systems," for a detailed discussion of water supplies). However, the City's groundwater wells are primarily used for backup water supply and to improve water supply reliability during drought and emergency conditions. As part of the City's groundwater program, it has invested in Aquifer Storage and Recovery, which provides the capability to supplement the groundwater basin through direct injection of drinking water into the groundwater basin that can be later recovered for drinking water use during dry periods (City of Roseville 2020a). Implementation of the project is not expected to substantially deplete groundwater supplies or interfere with sustainable management of the groundwater basin.

The project site is currently undeveloped land and approximately 176 acres of the project site are being considered for development. Implementation of the project would add additional impervious surface to the site. However, the proposed drainage system, further discussed below (Impact 3.12-3), would allow for drainage to Pleasant Grove Creek and a retention basin bypass channel would continue to allow for infiltration. The addition of 176 acres of development on the project site would add additional impervious surfaces to the site; however, this would account for less than 0.1 percent of the surface area of the North American River subbasin; therefore, this addition of impervious surfaces would not substantially impede groundwater recharge. Impacts related to groundwater levels and recharge would be **less than significant**.

### Mitigation Measures

No mitigation is required.

### Impact 3.12-3: Substantially Alter the Existing Drainage Pattern of the Site Resulting in Substantial Flooding, Additional Sources of Polluted Runoff, or Exceedance of Existing Stormwater Infrastructure Capacity

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Development of the project site and the addition of impervious surfaces would alter the existing drainage rate and pattern of the site. This would result in increased runoff. In addition, portions of the project site are designated as 100-year floodplain and 500-year floodplain for Pleasant Grove Creek. A bridge would be also constructed across Pleasant Grove Creek and the Pleasant Grove Creek Bypass Channel, which would result in a permanent structure within the FEMA regulatory floodway that could affect drainage. As a result, proposed development of the site could increase the potential for flooding. The project would be required to comply with the City's Stormwater Quality Design Manual and PCFCWCD's Stormwater Management Manual that require stormwater drainage facilities be designed with adequate capacity for stormwater flows from the project site. Additionally, the project applicant would contribute funding toward construction of the Pleasant Grove Stormwater Retention Basin Project, which is a planned, regional stormwater retention facility that has been designed to accommodate the City's stormwater needs, including stormwater from the project site. The project would also be required to obtain a Letter of Map Revision from FEMA and the bridge would be designed and maintained such that it would not impede floodflows within Pleasant Grove Creek or Pleasant Grove Creek Bypass Channel. Notwithstanding implementation of these measures, this impact would be **potentially significant** because development of the project site could increase the potential for flooding and exceedance of stormwater drainage systems.

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The volume and rate of stormwater runoff generated from an area is affected by development through conversion of vegetated or pervious surfaces to impervious surfaces and by the development of drainage systems that connect these impervious surfaces to streams or other water bodies. In this way, development can increase the rate of runoff

and eliminate storage, detention, and infiltration that would naturally occur along drainage paths. As water runs off the land surface, it can become concentrated, overwhelming existing storm drain systems, causing flooding in lower watershed areas.

The project would require the addition of impervious surfaces with the proposed buildings and paved parking lots, which would increase runoff and could increase the potential for flooding. In addition, there is an isolated, relatively small portion of 100-year floodplain on the southern overbank area of the bypass channel within the project site and the southern overbank area of the bypass is designated as 500-year floodplain (Figure 3.12-1). A bridge would be also constructed across Pleasant Grove Creek and Pleasant Grove Creek Bypass Channel to connect the northern and southern portions of the project site, which would result in a permanent structure within the FEMA regulatory floodway that could affect drainage of these waterways.

Plans for drainage facilities would be designed and facilities would be constructed in conformance with the City's Stormwater Quality Design Manual, PCFCWCD's Stormwater Management Manual, and other permit criteria applicable at the time of development and would provide flood protection up to the 100-year storm event. BMPs for the southern and northern residential areas would include disconnected impervious surfaces that would drain to pervious areas first for runoff reduction. The southern residential area would also include a BMP, a vegetated swale, at the outfall of its storm drain system, and the northern residential area would also include a BMP, a bioretention facility, at the outfall of its storm drain system. The Innovation Center area BMPs would include on-site bioretention facilities. The Blue Oaks Boulevard extension BMPs would include bioretention facilities within the public right-of-way. The Phillip Road BMP would include a vegetated swale at the outfall of its storm drain system. The drainage system design would be developed to have adequate capacity to serve flows from the project site, minimize future maintenance, and ensure proper flow of storm water within the constructed storm drains. Furthermore, all disturbance associated with construction of the stormwater drainage facilities would occur within the disturbance area of the project.

As described in the *Preliminary Drainage Study for the Phillip Road Site* (Laugenour and Meikle 2025b), runoff would generally drain towards Pleasant Grove Creek and the Pleasant Grove Creek Bypass Channel, on both the north and south sides of the creek and bypass channel. Imperviousness in the project area would increase, which would increase runoff. Storm drain systems would convey runoff and discharge it to the creek and bypass channel. The drainage system would include post-construction stormwater quality measures, including bioretention and vegetated swales. Cross drainage would be provided by a bridge over the creek and bypass channel.

For the residential areas north and south of the creek, runoff would be conveyed to the creek by storm drains within the roadways/public rights-of-way, with each system having an outlet discharging into the creek. The storm drains within the proposed collector road (Street "A" on the Tentative Map) down the middle of the southern area and the storm drain system of the Blue Oaks Boulevard extension would be connected to the southern residential storm drain system. The Innovation Center on the southern side of the creek would have a private storm drain system that would discharge into the creek and bypass channel at a separate outfall. The improvements to the west side of Phillip Road would include a storm drain system that would discharge to the creek at a separate outfall. (Laugenour and Meikle 2025b)

Post-construction stormwater quality of runoff would be managed using site design measures and treatment measures. In residential areas, roof runoff would be disconnected, that is, would drain over pervious land cover before reaching the storm drain system. Runoff from roadway pavement and other impervious areas in the residential areas, including Street "A" in the southern area, that would drain directly to the storm drain system would be treated by end-of-pipe treatments, vegetated swales, at the storm drain outlets. Phillip Road (west of the project site) would also be treated by an end-of-pipe treatment, a vegetated swale. Runoff from the remaining area, the Innovation Center and Blue Oaks Boulevard, would be routed to bioretention facilities for treatment. Higher flows bypassing bioretention would enter the storm drain systems (that discharge to the creek, as described above). (Laugenour and Meikle 2025b)

In addition, the project applicant would be required to contribute toward construction of the Pleasant Grove Stormwater Retention Basin Project through payment of the Pleasant Grove Watershed Mitigation Fee, which will cover the retention requirements of the project. As described in Chapter 2, "Project Description," payment of this fee

would be required as part of the Development Agreement as well as the conditions of project approval. This planned, regional stormwater retention facility would be located within the Pleasant Grove watershed, at the City's Reason Farms site located immediately west of the project site and has been designed to mitigate increased volumetric runoff from the City's developments within the watershed, including runoff volume from the project site. The Pleasant Grove Stormwater Retention Basin Project is an ongoing, unapproved project in the City's Capital Improvement Program. As of May 31, 2025, the City has spent \$14.8 million purchasing land, conducting environmental work, preparing alternative designs, and preparing studies regarding expected operations and maintenance costs (Anderson, pers. comm., 2025). As of June 2025, field studies including geotechnical, biological, cultural, and land survey are 80 percent complete and the alternative designs are approximately 30 percent complete. The Notice of Preparation (SCH #2024100114) was filed in October 2024, and the Draft EIR is expected to be released to the public in fall 2026. The City intends to construct the Pleasant Grove Stormwater Retention Basin Project in the next five years (Anderson, pers. comm., 2025).

The deck for the bridge across Pleasant Grove Creek and Pleasant Grove Bypass Channel would be approximately 2 feet thick, with a clearance of 3 feet from the 200-year water surface elevation to the bottom of the bridge deck. Bridge construction would include installation of 24-inch diameter bridge supports within the Pleasant Grove Creek and the Pleasant Grove Creek Bypass Channel. Permitting would be required for construction of the bridge as the abutments and piers would be located within these waterways. The bridge would be designed and maintained such that it would not impede flood flows within Pleasant Grove Creek or Pleasant Grove Creek Bypass Channel.

Because the project would place fill within portions of the FEMA-designated floodplain on the southern overbank area of the bypass channel, the project applicant has secured a Conditional Letter of Map Revision Based on Fill (CLOMR-F), which was approved by FEMA on October 26, 2023. As demonstrated by the approved CLOMR-F, FEMA confirmed that the proposed fill would remove that area from the floodplain. Following project construction, as-built plans would be submitted to FEMA in a Letter of Map Revision Based on Fill (LOMR-F), which would officially remove the floodplain in the development area south of the Pleasant Grove Creek Bypass Channel. It should be noted that FEMA currently has a moratorium on LOMR-F's with no end date cited, while FEMA revises their USFWS review protocol. However, the project has an approved CLOMR-F from FEMA, which allows the project applicant to construct the project. Once constructed, owners of buildings in the removed area may have to pay flood insurance until FEMA approves the LOMR-F.

For the creek and bypass channel, a separate application is required because the proposed bridge structure is proposed within the FEMA regulatory floodway, which is a special flood zone regulated by the NFIP. This analysis is required to demonstrate that there would be no increase in base flood elevations upstream or downstream of the project site as a result of project construction. Similar to the southern portion of the project site, the project applicant must demonstrate the project's ability to achieve the FEMA requirements. A no-rise certificate would be required to be obtained to show that the base flood elevations (BFEs) in the creek/bypass channel are not increased. The project would be designed such that building floors are elevated at least two feet above the BFEs, and all electrical, heating, ventilation ductworks, plumbing, and air conditioning equipment and other service facilities are similarly elevated above the BFE.

A small part of the project on the north lies with the City's local regulatory floodplain of University Creek. The City may realign University Creek as part of the planned Pleasant Grove Stormwater Retention Basin Facility project; however, the Retention Basin Facility project is still in the design phase. If this realignment has not occurred by the time of the development of the northern residential area or an alternative plan is selected, the grading/building design would need to account for this floodplain. The lot layout and grading would be adjusted to keep construction out of the local regulatory floodplain. (Laugenour and Meikle 2025b)

Notwithstanding implementation of these measures, implementation of the project would alter the drainage pattern of the project site such that substantial flooding or exceedance of stormwater drainage systems could occur. Therefore, this impact would be **potentially significant**.

## Mitigation Measures

### Mitigation Measure 3.12-3: Reduce Flood Hazards

The following measures, identified in the Preliminary Drainage Study prepared for the project (Laugenour and Meikle 2025b), would be implemented to reduce potential flood hazards:

- ▶ The City may realign University Creek as part of the planned Pleasant Grove Stormwater Retention Basin Facility project.
- ▶ If this realignment has not occurred by the time of development of the northern residential area, the project applicant shall revise the proposed grading/building design to account for this floodplain. Specifically, the project applicant shall adjust the lot layout and grading to keep construction out of the local regulatory floodplain, while not generating any new or substantially more severe significant impacts.
- ▶ In addition, to offset increased runoff volumes from the project site, the project applicant shall purchase retention credits in the planned Pleasant Grove Stormwater Retention Basin Facility project that would be implemented in the City of Roseville, which the City calculated as 29 acre-feet.

### Significance after Mitigation

With the implementation of Mitigation Measure 3.12-3, potential impacts associated with flooding would be **less than significant** because the City may realign University Creek, and, if University Creek is not realigned, the project's proposed grading/building design would be revised to account for this floodplain, while not generating any new or substantially more severe significant impacts. Additionally, the project's increased runoff volumes would be offset through the purchase of retention credits in the planned Pleasant Grove Stormwater Retention Basin Facility project.