# 13.0
# HYDROLOGY AND WATER QUALITY

# 13.0 HYDROLOGY AND WATER QUALITY

This section of the Draft Environmental Impact Report ("Draft EIR"; "DEIR") identifies and describes the existing hydrologic resources, drainage conditions, flooding hazards, and surface and groundwater quality at, and in the vicinity of, the Project site. This section also evaluates the potential impacts of implementing the proposed Project with respect to erosion/sedimentation and water quality, drainage, flooding and dam failure inundation hazards, and groundwater recharge and depletion, and identifies appropriate mitigation measures to lessen the identified impacts, where necessary. The information provided in this section is based on state and regional studies on water quality, local studies and plans on water supply and infrastructure, and data from the Federal Emergency Management Agency (FEMA). See Section 14.0, Public Services and Utilities, for a discussion of the Project's potential impacts related to water supply infrastructure and the provision of water to the proposed Project. See Section 6.0, Biological Resources, for a discussion of wetlands and vernal pools.

## 13.1 EXISTING SETTING

### 13.1.1 Climate and Precipitation

The climate of the Placer County and the Project site is generally characterized by warm summers and mild winters. Monthly averages of daily extreme temperatures range from 39 degrees Fahrenheit minimum to 52 degrees Fahrenheit maximum in January and from 58 degrees Fahrenheit to 90 degrees Fahrenheit in July. The annual rate of precipitation averages 25 inches. Approximately 90 percent of average annual rainfall occurs in the six-month period extending from November to April. The area does experience ground fog during winter months (Placer County, 1989).

### 13.1.2 Surface Water Resources

Surface watersheds are those land areas that catch rain or snow and drain to specific marshes, streams, rivers, lakes, or the groundwater table. The Project site is located within the Sacramento River watershed, which covers approximately 27,210 square miles and includes the entire area drained by the Sacramento River. The principal streams in the basin are the Sacramento River and its larger tributaries: the Pit, Feather, Yuba, Bear, and American rivers to the east, and Cottonwood, Stony, Cache, and Putah creeks to the west. Major reservoirs and lakes include Shasta, Oroville, Folsom, Clear Lake, and Lake Berryessa (CVRWQCB, 2007).

The Sacramento River watershed is made up of many smaller, local watersheds and sub-watersheds. On the local level, the Project site is located within the Dry Creek watershed, which generally includes the communities of Granite Bay and Loomis and the eastern portions of the cities of Rocklin and Roseville as well as portions of northern Sacramento County (see **Figure 13-1**). The Dry Creek watershed is one of the fastest-urbanizing areas in California. The resulting development has stressed the natural environment through the loss of riparian vegetation, stream bank erosion, and sedimentation of streams resulting in the perceived decline of water quality in Dry Creek and its tributaries (Placer and Sacramento Counties, 2003).

The Project site is located in southeastern Placer County just west of Folsom Lake. The topography of the Project site ranges from flat to slopes of up to 35 percent. The site drains to the south, toward an unnamed tributary of Miners Ravine. Topographic features include a man-made pond (with a surrounding dam) located near the center of the site, with a watershed area of approximately 44 acres. The pond's dam is approximately 17 feet high and 300 feet long. The

volume of the pond is estimated at 6 acre-feet. Immediately northwest of the site is an existing water reservoir operated by the San Juan Water District (King Engineering, 2011). Major surface hydrologic features in the vicinity of the Project site are the American River, including Folsom Lake and Lake Natoma, and several small creeks and irrigation canals.

### Lower American River

The lower American River is the main hydrologic feature in the Project area. It flows from the Sierra Nevada foothills east of the Project site into the rolling upland plain of the Sacramento Valley. The plain gradually flattens as it meets the alluvial floodplain of the Sacramento River. The floodplain of the lower American River is bordered by high bluffs in its upper reaches and by levees in its lower reaches (Sacramento County, 2006).

### Folsom Lake

Folsom Lake was created in 1955 when Folsom Dam, a concrete dam flanked by earth wing dams and dikes with a total length of about 9 miles, was constructed on the lower American River. The lake has a surface area of about 10,000 acres when full and has 75 miles of shoreline. It extends about 15 miles up the north fork and about 10½ miles up the south fork of the American River. The lake level normally varies from 466 feet elevation in early summer to a low of 426 feet in early winter (California Department of Parks and Recreation, 2009).

### Lake Natoma

Lake Natoma was created by the construction of the Nimbus Dam and acts as an afterbay or regulating reservoir for Folsom Dam. The dam is located 7 miles downstream from Folsom Dam and is a straight concrete gravity structure, 87 feet high and 1,093 feet long. The lake stores releases from Folsom Dam and re-regulates them to a steady flow downstream in the American River. It also serves as a diversion dam to direct water into Folsom South Canal. Two 6,750-kilowatt generators produce power from Nimbus Dam water releases (California Department of Parks and Recreation, 2009).

### Dry Creek

Dry Creek is a perennial stream, approximately 17.6 miles long, that originates at the confluence of Secret Ravine and Miners Ravine near the intersection of Taylor Road and Eureka Road just east of Interstate 80 in the City of Roseville. Dry Creek flows year-round. Summer base flows are sustained by irrigation runoff, groundwater discharge, and treated sewage effluent from water treatment plant facilities. Dry Creek ultimately drains into Steelhead Creek (a.k.a. the Natomas East Main Drain) within the Ueda Parkway in the community of Rio Linda. In 2001, the creek's metered flow at the Vernon Street Bridge in Roseville ranged from a low of 14.3 cubic feet per second (cfs) in August to a high of 378 cfs in February. The average annual watershed runoff is approximately 16,400 acre-feet, with about 95 percent of this runoff occurring between December and May. The low summer flows comprise primarily groundwater seepage and wastewater flow from the Dry Creek Roseville Wastewater Treatment Plant in Roseville. Tributaries to Dry Creek include Miners Ravine, Secret Ravine, Antelope Creek, Strap Ravine, Linda Creek, and Cirby Creek (Placer and Sacramento Counties, 2003).

### Miners Ravine

Miners Ravine is a perennial tributary of Dry Creek. The main channel is approximately 15.2 miles long and drains approximately 20.1 square miles of mixed-use land. The upper reaches are composed of intermittent drainages and the lower reaches are primarily intermittent with some perennial reaches. The upland areas surrounding the ravine are characterized by gently rolling hills separated by broad flat valleys. The valley floor is a flat floodplain that varies from 100 to 300 feet in width; however, the stream channel itself is only 12 to 30 feet wide and 4 to 12 feet deep.

Flow through Miners Ravine is flashy,[1] due to the shallow depth to bedrock, limited soil permeability, and limited water holding capacity. Additionally, the natural channel is small relative to the floodplain area; therefore, flooding occurs fairly often. Summer flow is often less than one cfs, whereas flood flows have been estimated at as high as 8,428 cfs at the confluence with Dry Creek and Antelope Creek during the winter wet weather season (October through April). Summer flows are generally composed of spring flows and components or urban runoff including ponds, landscape water, and historically, sewage flows.

Miners Ravine is still known to support anadromous fish, including fall-run Chinook salmon and steelhead. In addition to streams and creeks, Miners Ravine includes other water features such as Oak Lake, Cottonwood Lake, Pine Lake, Laurel Lake, Mamouth Reservoir, another unnamed reservoir, and more than approximately 20 small, unnamed ponds (Placer and Sacramento Counties, 2003).

### Secret Ravine

Secret Ravine is a 7.8-mile-long perennial stream that originates in the northeastern-most portion of the Dry Creek watershed and flows southwest in a narrow valley nearly parallel to Interstate 80 before draining into Dry Creek. The upper reaches of Secret Ravine are all intermittent drainageways while the lower reaches are intermittent and perennial. The main channel is typically 6 to 8 feet deep with a flat bottom and a median width of 12 feet. Anadromous fish, including fall-run Chinook salmon and steelhead, have been found in Secret Ravine.

Typical flows in Secret Ravine have been measured and estimated in previous studies which indicate that flows could be as low as 0.5 cfs during early fall, while wet weather (February) flows were approximately 25 cfs in the lower reaches and 5 to 10 cfs in the upper reaches. Ten-year peak flows have been modeled at approximately 1,729 cfs. Dry weather flows are primarily due to urban inputs, such as lawn irrigation and excess drainage, sewage effluent, unknown amounts of tailwater delivered by the Placer County Water Agency's irrigation releases, and other releases such as small amounts of freshwater seeps (Placer and Sacramento Counties, 2003).

### Irrigation Facilities

Within the Dry Creek watershed there also numerous canals, aqueducts, siphons, reservoirs, ponds, dams, pipelines, and other non-natural water features that significantly influence local hydrology. There is little readily available information about these features or about water use/withdrawals and their resulting impact on the local/regional hydrology (Placer and

[1] A flashy stream is one that exhibits significantly increased flows immediately following the onset of a precipitation event and a rapid return to pre-rain conditions shortly after the end of the precipitation.

Sacramento Counties, 2003). Major facilities within the vicinity of the Project site include the Baughman Canal and the Placer County Water Agency's Boardman Canal.

#### Project Site Pond and Dam

There is a man-made pond with a volume of approximately 6 acre-feet located near the center of the Project site. The pond is impounded by a dam approximately 17 feet high and 300 feet long and has a watershed area of about 44 acres. The precise age of the pond is unknown; however, based on review of aerial photos and historical USGS topographic maps, the pond appears to have been constructed between 1968 and 1971. The pond has a grass-lined earthen spillway with a trapezoidal-shaped cross section and is approximately 14 feet wide at its bottom (King Engineering, 2011). The pond has a bottom outlet slide gate valve of unknown size that is normally closed. The pond and dam are too small to be under the jurisdiction of the California Division of Safety of Dams. In addition, there is an existing water well on the Project site near the man-made pond. The well served a previous residence that is no longer in existence. The well is not currently being used and will be abandoned as part of the proposed Project.

In addition, there is a water storage reservoir operated by the San Juan Irrigation District located immediately northeast of the Project site (see **Figure 4-1**).

### 13.1.3 Drainage and Flooding

#### Soils

The Natural Resources Conservation Service (NRCS) has defined the following four Soil Group designations:

*Group A:* *Low runoff potential* soils having high infiltration rates even when thoroughly wetted and consisting chiefly of deep, well-drained sands or gravels. These soils have a high rate of water transmission.

*Group B:* Soils having *moderate infiltration* rates when thoroughly wetted and consisting chiefly of moderately deep to deep, moderately well to well-drained sandy-loam with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission.

*Group C:* Soils having a *low infiltration* rate when thoroughly wetted and consisting chiefly of silt-loam soils with a layer that impedes downward movement of water, or soils with moderately fine to fine texture. These soils have a slow rate of water transmission.

*Group D:* *High runoff potential* soils having very slow infiltration rates when thoroughly wetted and consisting chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a clay pan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have slow rate of water transmission.

The Soil Survey of Placer County (USDA Soil Conservation Service, 1980) shows the on-site soil series to comprise Andregg, Exchequer, and Inks Xerofluvent soils. These soils are classified as hydrologic groups C and D (King Engineering, 2011).

### Topography and Drainage

Ground slopes within the Project site range from flat to 35 percent. As described above, topographic features on the site include a man-made pond located near the center of the site, having a watershed area of about 44 acres (King Engineering, 2011).

**Figure 13-2**, located near the end of this section, illustrates the pre-development drainage conditions on the site and designates the locations where drainage discharges across the subdivision boundary (at points A and B). As shown on this figure, the Project site generally drains to the south, toward an unnamed tributary to Miners Ravine. Runoff drains from the site at four locations as described below.

1) Point A and downstream: This is an unnamed intermittent drainage course flowing downstream to the south with a 32-acre watershed area. At Point A, this drainage course is grass lined with some blackberry bushes and surrounding oaks. The flow line is stable with only minor erosion. The drainage course leaves the Project site under a wire fence and continues south to a gravel driveway.

2) Point B and downstream: This is an unnamed intermittent drainage course flowing downstream to the south with a 55-acre watershed area. At Point B, this drainage course has thick grass and no erosion. The drainage course leaves the Project site under a split rail fence and continues south through a broad V-shaped riprap swale approximately 10 feet wide to a concrete driveway with two 15-inch diameter culverts. No downstream erosion is apparent.

3) Point C and downstream: This is the south road gutter of Sierra College Boulevard which flows west and has a watershed area of 1.5 acres.

4) Area D and downstream: Drainage runoff from Area D leaves the west property line as sheet flow with no defined drainage course and eventually combines with Area C flow in the Sierra College Boulevard gutter (King Engineering, 2011).

### Flooding

The FEMA Flood Insurance Rate Map for Placer County (Community-Panel No. 06061 C0481G) shows that the Project site is in Flood Zone X, indicating that the area is outside the 1 percent annual chance floodplain and is considered to be at minimal risk of flooding (FEMA, 2001; FEMA, 2009). Wetlands and vernal pools have been mapped on the site. See Section 6.0, Biological Resources, for further discussion of wetlands and vernal pools.

### Dam Failure Inundation

Dam failure flooding can occur as the result of partial or complete collapse of an impoundment. Dam failures often result from prolonged rainfall and flooding. The primary danger associated with any potential dam failure is the high velocity flooding of those properties downstream of such a dam. The Placer County Multi-Hazard Mitigation Plan (2005) identifies dams that could potentially impact Placer County, including both dams within the county and dams that may lie in neighboring counties that drain into Placer County. There are 90 dams rated as “high” or “significant” hazard that could potentially impact Placer County should a failure occur. The areas at risk are located within the American River, Upper Bear River, North Tahoe, and Truckee River watersheds. The Project site is located west of the American River watershed within the Dry

Creek watershed. As such, the Project site is not considered to be at risk of flooding resulting from a dam failure (Placer County, 2005).

### 13.1.4 Groundwater Resources

The Great Central Valley of California contains the largest basin-fill aquifer system in the state. The valley is in a structural trough about 400 miles long and ranges from 20 to 70 miles wide, extending over more than 20,000 square miles. The trough is filled to great depths by marine and continental sediments, which are the result of millions of years of inundation by the ocean and erosion of the rocks that form the surrounding mountains. Sand and gravel beds in this basin-fill material form an important aquifer system.

The Department of Water Resources (DWR) divides this aquifer system into two groundwater basins, the Sacramento Valley Groundwater Basin and the San Joaquin Valley Groundwater Basin. It further divides the Sacramento Valley Groundwater Basin into subbasins including the North American Subbasin which underlies the Project site (DWR, 2006).

The North American Subbasin (DWR Basin No. 5-21.64) is located in the eastern central portion of the Sacramento Valley Groundwater Basin. The surface area of the subbasin is approximately 548 square miles and is generally bounded by the Bear River to the north, the Feather River to the west, and the Sacramento River to the south. The eastern boundary is a north–south line extending from the Bear River south to Folsom Lake, which passes about 2 miles east of the City of Lincoln (DWR, 2006). The Project site lies along this eastern boundary.

DWR estimates the total storage capacity of the subbasin at approximately 4.9 million acre-feet; however, there are no published reports on the actual amount of groundwater in storage in the subbasin (DWR, 2006).

#### Groundwater Levels and Recharge

Groundwater levels in southwestern Placer County and northern Sacramento County have generally decreased, with many wells experiencing declines at a rate of about 1½ feet per year for the last 40 years or more. Some of the largest decreases have occurred in the area of the former McClellan Air Force Base (DWR, 2006). According to DWR well data, groundwater levels in the vicinity of the Project site range from 100 to over 160 feet below ground surface (DWR, 2009).

### 13.1.5 Water Quality

#### Surface Water Quality

The California Clean Water Act Section 303(d) list identifies water bodies with impaired water quality. Neither the American River nor any of the other minor streams in the vicinity of the Project site are on the most recent (2006) 303(d) list. As such, none of these waterways are subject to a Total Maximum Daily Load (TMDL).

According to the U.S. Environmental Protection Agency's (USEPA) 2000 National Water Quality Report to Congress, the water quality of Dry Creek is slightly impaired due to unknown toxicity, pesticides, and priority organics. The sources of these impairments are unknown (Placer and Sacramento Counties, 2003).

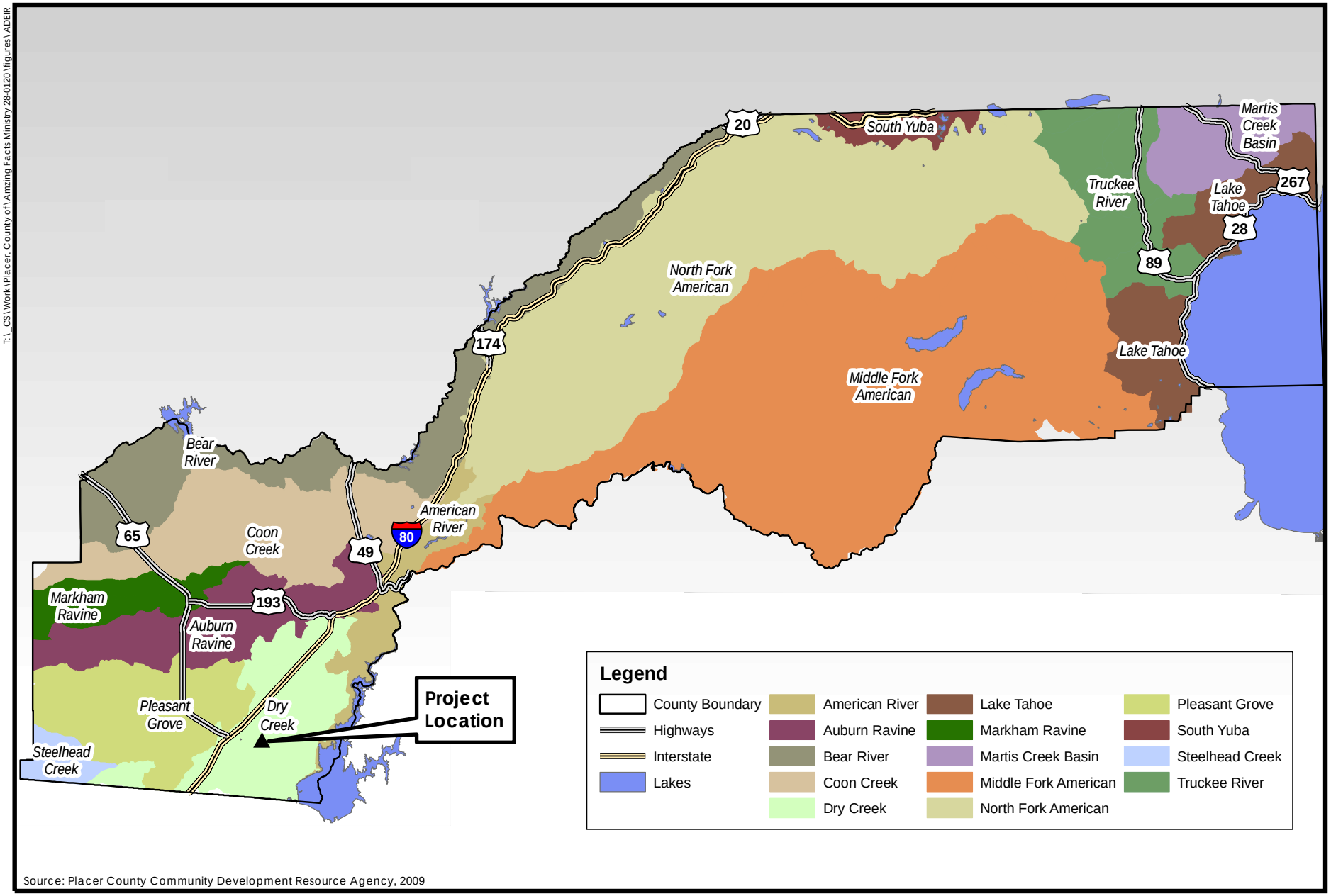


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**Figure 13-1**
Watersheds in Placer County

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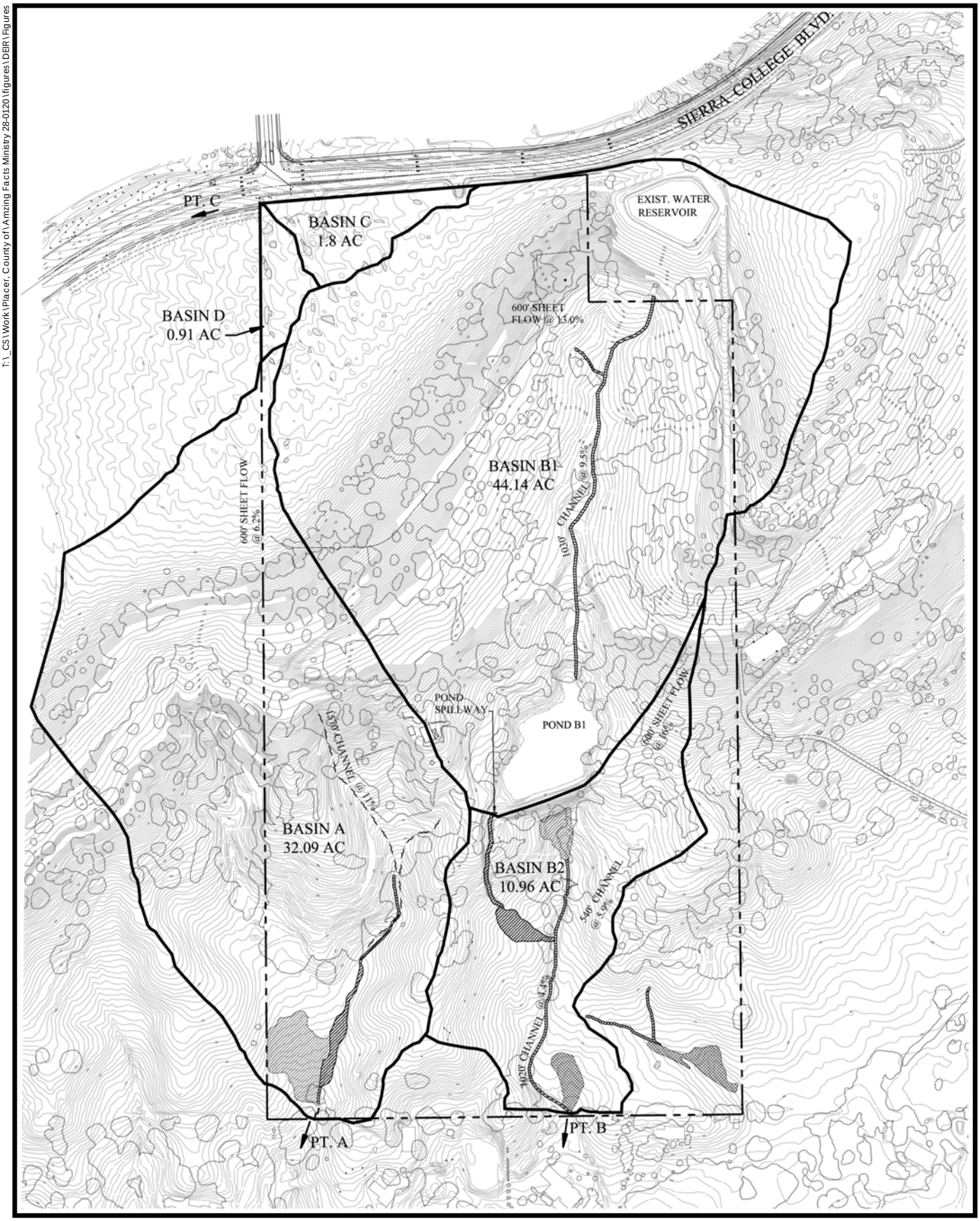


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**Figure 13-2**

Pre-development Drainage Conditions

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However, flows in this creek below the Roseville Wastewater Treatment Plant (WWTP) are dominated by effluent which greatly influences downstream water quality characteristics. In addition, flows in Miners Ravine, a tributary to Dry Creek, are partially derived from effluent from the Placer WWTP located near Dick Cook Road. Wastewater treatment plants are generally required to monitor the water quality of their discharge and receiving water body to comply with the terms of their National Pollutant Discharge Elimination System (NPDES) permits. According to monitoring conducted at the Placer WWTP discharge point, Miners Ravine experiences dissolved oxygen impairment during the summer and temperature impairment most of the year, both of which appear to be unrelated to WWTP discharges. In addition, the ravine experiences higher conductivity (but within standards) and lower turbidity (but still exceeding standards) as a result of WWTP discharges. According to monitoring conducted at the Roseville WWTP discharge point, Dry Creek experiences dissolved oxygen impairment for cold water fish support during the summer, temperature impairment from June through September, turbidity impairment November through May, and intermittent pH impairment, all of which appear to be unrelated to discharges from the WWTP. In addition, the creek experiences higher conductivity (but within standards), lower turbidity (within standards), lower dissolved oxygen (but no impairment), higher temperature (exceeding standards), lower pH (within standards), and unknown nutrient contributions, all associated with WWTP discharges (Placer and Sacramento Counties, 2003).

Water quality sampling within the Dry Creek watershed was also conducted by the Central Valley Regional Water Quality Control Board between fall 2000 and winter 2002 for dissolved oxygen, turbidity, conductivity, temperature, and pH. According to the sampling results, dissolved oxygen values were generally within standards except some summer samples likely due to the lower solubility of oxygen in warmer waters. Temperature measurements were similar to those of the Roseville WWTP, with lower values upstream of the plant and lower values downstream. During the summer months of June through August, in-stream temperatures may impair water quality for aquatic life support based on established temperature standards for the nearby American River. Turbidity values were highly variable, with 67 to 92 percent of samples exceeding standards. Conductivity was within standards during all sampling events, and all samples met pH standards with few exceptions (Placer and Sacramento Counties, 2003).

#### Groundwater Quality

Many areas of good quality groundwater exist in the North American subbasin. In some portions of the subbasin, groundwater quality is marginal. Elevated levels of total dissolved solids (TDS), chloride, sodium, bicarbonate, boron, fluoride, nitrate, iron, manganese, and arsenic may be of concern in some locations within the subbasin (DWR, 2006).

There are three sites within the subbasin with significant groundwater contamination issues: the former McClellan Air Force Base, the Union Pacific Railroad Rail Yard in Roseville, and the Aerojet Superfund site. Although the Aerojet site lies south of the subbasin, a contaminant plume extends north from Aerojet, under the American River, and into the subbasin. Other localized areas of contamination exist throughout the subbasin and are generally smaller in scope and extent of contamination (DWR, 2006).

### 13.1.6 Municipal Water Service

Municipal water service would be provided to the Project site by the Placer County Water Agency (PCWA). PCWA provides water to approximately 220,000 people in Placer County, including the cities of Auburn, Colfax, Loomis, and Rocklin, and to most of the small communities in unincorporated western Placer County along the Interstate 80 corridor below

Alta. The site is located within PCWA's Zone 1, which extends from Auburn south to the northern boundary of Roseville. Sources of water for this zone are surface water from Pacific Gas & Electric's (PG&E) Wise/South Canal, PCWA's Boardman Canal, and the American River. American River water is pumped to the Auburn Tunnel, a 3-mile-long tunnel which connects the American River canyon with Auburn Ravine near Ophir. Water is also supplied to PG&E's South Canal by pumps that intercept the Auburn Tunnel and pump water to the surface and into the South Canal. PCWA also plans in the future to pump water from the Sacramento River to serve Zone 1 (PCWA, 2006). See Section 14.0, Public Services and Utilities, for a discussion of the Project's potential impacts related to water supply infrastructure and the provision of water to the proposed Project.

## 13.2 REGULATORY FRAMEWORK

### 13.2.1 Federal

#### Clean Water Act

The Clean Water Act (CWA) regulates the water quality of all discharges into waters of the United States including wetlands and perennial and intermittent stream channels. Section 401, Title 33, Section 1341 of the CWA sets forth water quality certification requirements for "any applicant applying for a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters." Section 404, Title 33, Section 1344 of the CWA in part authorizes the U.S. Army Corps of Engineers to:

- Set requirements and standards pertaining to such discharges: subparagraph (e);
- Issue permits "for the discharge of dredged or fill material into the navigable waters at specified disposal sites": subparagraph (a);
- Specify the disposal sites for such permits: subparagraph (b);
- Deny or restrict the use of specified disposal sites if "the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies and fishery areas": subparagraph (c);
- Specify type of and conditions for non-prohibited discharges: subparagraph (f);
- Provide for individual state or interstate compact administration of general permit programs: subparagraphs (g), (h), and (j);
- Withdraw approval of such state or interstate permit programs: subparagraph (i);
- Ensure public availability of permits and permit applications: subparagraph (o);
- Exempt certain federal or state projects from regulation under this Section: subparagraph (r); and
- Determine conditions and penalties for violation of permit conditions or limitations: subparagraph (s).

Section 401 certification is required prior to final issuance of Section 404 permits from the U.S. Army Corps of Engineers.

#### Federal Emergency Management Agency

Placer County is a participant in the National Flood Insurance Program (NFIP), a federal program administered by the Federal Emergency Management Agency (FEMA). Participants in the NFIP must satisfy certain mandated floodplain management criteria. The National Flood Insurance Act of 1968 has adopted as a desired level of protection, an expectation that developments should be protected from floodwater damage of the Intermediate Regional Flood (IRF). The IRF is defined as a flood that has an average frequency of occurrence on the order of once in 100 years, although such a flood may occur in any given year. The County is occasionally audited by the DWR to ensure the proper implementation of FEMA floodplain management regulations.

### 13.2.2 State and Regional

#### Senate Bill (SB) 610 and Assembly Bill (AB) 901

During the 2001 regular session of the State Legislature, SB 610 and AB 910 – Water Supply Planning, were signed and became effective January 1, 2002. SB 610 amends Public Resources Code Section 21151.9, requiring any environmental impact report, negative declaration, or mitigated negative declaration for a qualifying project to include consultation with affected water supply agencies (current law applies only to notices of preparation). SB 610 also amends the following: Water Code Sections 10656 and 10657 to restrict state funding for agencies that fail to submit their urban water management plan to the Department of Water Resources; and Water Code Section 10910 to describe the water supply assessment that must be undertaken for projects referred under PRC Section 21151.9, including an analysis of groundwater supplies. Water agencies would be given 90 days from the start of consultation in which to provide a water supply assessment of the CEQA lead agency; Water Code Section 10910 would also specify the circumstances under which a project for which a water supply assessment was once prepared would be required to obtain another assessment. AB 910 amends Water Code Section 10631, expanding the contents of the urban water management plans to include further information on future water supply projects and programs and groundwater supplies.

#### Senate Bill 221

SB 221 adds Government Code Section 66455.3, requiring that the local water agency be sent a copy of any proposed residential subdivision of more than 500 dwelling units within five days of the subdivision application being accepted as complete for processing by the city or county. It adds Government Code Section 66473.7 with detailed requirements for establishing whether a “sufficient water supply” exists to support any proposed residential subdivisions of more than 500 dwellings, including any such subdivision involving a development agreement. When approving a qualifying subdivision tentative map, the city or county must include a condition requiring a sufficient water supply to be available. Proof of availability must be requested of and provided by the applicable public water system. If there is no public water system, the city or county must undertake the analysis described in Section 66473.7. The analysis must include consideration of effects on other users of water and groundwater.

### Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act governs the coordination and control of water quality in the state and includes provisions relating to non-point source pollution. The California Coastal Commission, pursuant to the coastal act, specified duties regarding the federally approved California Coastal Management Program. This law requires that the State Water Resources Control Board, along with the California Coastal Commission, regional boards, and other appropriate state agencies and advisory groups, prepare a detailed program to implement the state's non-point source management plan on or before February 1, 2001. The law also requires that the state board, in consultation with the Commission and other agencies, submit copies of prescribed state and regional board reports containing information related to non-point source pollution, on or before August 1 of each year.

### Regional Water Quality Control Board, Central Valley Region

The Regional Water Quality Control Board, Central Valley Region (CVRWQCB) provides planning, monitoring, and enforcement techniques for surface and groundwater quality in the Central Valley region. A basin plan provides more specific information for specific waterways within the region, in terms of establishing monitoring techniques to control pollutant levels within the waterways. The CVRWQCB also monitors stormwater quality from construction activities through a National Pollutant Discharge Elimination System (NPDES) permitting process.

### Central Valley Regional Water Quality Control Plan (Basin Plan)

The Central Valley Regional Water Quality Control Plan covers all the drainage basin areas for the Sacramento and San Joaquin rivers, extending approximately 400 miles from the California-Oregon border to the headwaters of the San Joaquin River. The plan describes the beneficial uses to be protected in these waterways, water quality objectives to protect those uses, and implementation measures to make sure those objectives are achieved.

### National Pollutant Discharge Elimination System (NPDES)

The National Pollutant Discharge Elimination System (NPDES) permit system was established in the Clean Water Act to regulate municipal and industrial discharge to surface waters of the U.S. Each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Permits require the municipal authority to evaluate the quality of its stormwater discharge and receiving waters, identify areas of pollutant loading, and implement a program of best management practices (BMPs) to control pollutant discharges to the maximum extent practicable. It is within the existing authority of the CVRWQCB to issue a NPDES permit for any stormwater outfall that discharges to the waters in the region.

#### *Municipal Stormwater Permitting Program*

Discharges from municipal separate storm sewer systems ("MS4s") are regulated because of concern over the high concentration of pollutants found in those discharges. MS4 permits were issued by the various RWQCBs in two phases.

Under Phase I, which started in 1990, the RWQCBs have adopted NPDES General Permit stormwater permits for medium (serving between 100,000 and 250,000 people) and large (serving 250,000 people) municipalities. Most of these permits are issued to a group of co-permittees encompassing an entire metropolitan area. These permits are reissued as the permits expire.

As part of Phase II, the SWRCB adopted a General Permit for the Discharge of Storm Water from Small MS4s (WQ Order No. 2003-0005-DWQ) to provide permit coverage for smaller municipalities, including non-traditional Small MS4s, which are governmental facilities such as military bases, public campuses, and prison and hospital complexes.

The MS4 permits require the discharger to develop and implement a storm water management plan/program with the goal of reducing the discharge of pollutants to the maximum extent practicable (MEP). MEP is the performance standard specified in Section 402(p) of the Clean Water Act. The management programs specify what best management practices will be used to address certain program areas. The program areas include public education and outreach, illicit discharge detection and elimination, construction and post-construction, and good housekeeping for municipal operations. In general, medium and large municipalities are required to conduct chemical monitoring, though small municipalities are not.

Placer County has prepared a Stormwater Management Plan for the western portion of the county, including the Project site, and has obtained coverage under the SWRCB's General Permit for Small MS4s (WQ Order No. 2003-0005-DWQ).

### *General Construction Activity Storm Water Permits and Stormwater Pollution Prevention Plans*

In accordance with NPDES regulations, the State requires that any construction activity affecting 1 acre or more obtain a General Construction Activity Storm Water Permit (General Permit) to minimize the potential effects of construction runoff on receiving water quality. Performance standards for obtaining and complying with the General Permit are described in NPDES General Permit No. CAS000002, Waste Discharge Requirements, Order No. 2009-0009-DWQ adopted September 2, 2009, and effective as of July 1, 2010.

General Permit applicants are required to submit to the appropriate regional board Permit Registration Documents (PRDs) for the project, which include a Notice of Intent (NOI), Risk Assessment, Site Map, Signed Certification Statement, an annual fee, and a stormwater pollution prevention plan (SWPPP). The permit program is risk based, wherein a project's risk is based on the project's potential to cause sedimentation and the risk of such sedimentation on the receiving waters. A project's risk determines its water quality control requirements ranging from Risk Level 1, which consists of only narrative effluent standards, implementation of best management practices, and visual monitoring, to Risk Level 3, which consists of numeric effluent limitations, additional sediment control measures, and receiving water monitoring. Additional requirements include compliance with post construction standards focusing on Low Impact Development (LID), preparation of Rain Event Action Plans, increased reporting requirements, and specific certification requirements for certain project personnel.

The SWPPP must include implementing BMPs to reduce construction effects on receiving water quality by implementing erosion control measures and reducing or eliminating non-stormwater discharges. Examples of typical construction BMPs included in SWPPPs include, but are not limited to, using temporary mulching, seeding, or other suitable stabilization measures to protect uncovered soils; storing materials and equipment to ensure that spills or leaks cannot enter the storm drain system or surface water; developing and implementing a spill prevention and cleanup plan; and installing sediment control devices such as gravel bags, inlet filters, fiber rolls, or silt fences to reduce or eliminate sediment and other pollutants from discharging to the county's drainage system or receiving waters.

### 13.2.3 Local

#### Placer County General Plan

The Placer County General Plan Policy Document was adopted by the Placer County Board of Supervisors in 1994. **Table 13-1** lists the General Plan policies that relate to hydrology and water quality and the proposed Project and provides an analysis of the Project's consistency with these goals and policies. While this Draft EIR analyzes the Project's consistency with the Placer County General Plan pursuant to State CEQA Guidelines Section 15125(d), the determination of the Project's consistency with this General Plan rests with the Placer County Board of Supervisors. Environmental impacts associated with any inconsistency with General Plan policies are addressed under the impact discussions of this EIR.

**TABLE 13-1**
**GENERAL PLAN CONSISTENCY ANALYSIS – HYDROLOGY AND WATER QUALITY**

| General Plan Policies | Consistency Determination | Analysis |
|---|---|---|
| **Public Facilities and Services Section** | | |
| **Policy 4.C.5:** The County shall require that new development adjacent to bodies of water used as domestic water sources adequately mitigate potential water quality impacts on these water bodies. | Consistent | The Project site is located adjacent to a San Juan Water District water reservoir. However, due to the topography of the Project site and its natural and planned drainage courses, no runoff would drain to this reservoir and there would be no impact to its water quality (see Figure 13-2 and Impact 13.3). |
| **Policy 4.C.11:** The County shall protect the watersheds of all bodies of water associated with the storage and delivery of domestic water by limiting grading, construction of impervious surfaces, application of fertilizers, and development of septic systems within these watersheds. | Consistent | Grading associated with construction of the proposed Project would comply with all local regulations, would not be performed during the rainy season, and would comply with an approved stormwater pollution prevention plan (SWPPP) to protect water quality.<br>The Project would result in the construction of about 11.9 acres of impervious surfaces. However, this represents only about 16 percent of the total site and the remaining area to the south of the proposed house of worship facilities is not currently proposed for development. In addition, the Project includes an adequate drainage system with BMPs to manage runoff and protect water quality.<br>No septic systems are proposed as part of the Project. |

| General Plan Policies | Consistency Determination | Analysis |
|---|---|---|
| **Policy 4.E.1:** The County shall encourage the use of natural stormwater drainage systems to preserve and enhance natural features. | Consistent | The existing drainage pattern and watershed boundaries of the Project site are proposed to remain essentially the same with no significant areas being diverted to other drainage watersheds as over 80 percent of the site is not currently proposed for development. |
| **Policy 4.E.4:** The County shall ensure that new storm drainage systems are designed in conformance with the Placer County Flood Control and Water Conservation District's Stormwater Management Manual and the County Land Development Manual. | Consistent | The proposed drainage system would be designed and constructed in accordance with the Placer County Flood Control and Water Conservation District's Stormwater Management Manual and the County's Land Development Manual. |
| **Policy 4.E.5:** The County shall continue to implement and enforce its Grading Ordinance and Flood Damage Prevention Ordinance. | Consistent | The proposed Project would comply with the County's Grading Ordinance and Flood Damage Prevention Ordinance as applicable. |
| **Policy 4.E.7:** The County shall prohibit the use of underground storm drain systems in rural and agricultural areas, unless no other feasible alternatives are available for conveyance of stormwater from new development or when necessary to mitigate flood hazards. | Consistent | Underground storm drain systems would be utilized only within the proposed parking areas and along proposed buildings. The existing drainage pattern and watershed boundaries of the Project site are proposed to remain essentially the same, with no significant areas being diverted to other drainage watersheds. |
| **Policy 4.E.10:** The County shall strive to improve the quality of runoff from urban and suburban development through use of appropriate and feasible mitigation measures including, but not limited to, artificial wetlands, grassy swales, infiltration/sedimentation basins, riparian setbacks, oil/grit separators, and other best management practices (BMPs). | Consistent | The proposed drainage system includes the use of both temporary and permanent BMPs to minimize sediment and pollutant content of site runoff. |
| **Policy 4.E.11:** The County shall require new development to adequately mitigate increases in stormwater peak flows and/or volume. Mitigation measures should take into consideration impacts on adjoining lands in the unincorporated area and on properties in jurisdictions within and immediately adjacent to Placer County. | Consistent | As discussed under Impact 13.3, the peak flows and volumes of Project drainage would remain the same or be reduced with implementation of the Project and proposed drainage improvements. |
| **Policy 4.E.12:** The County shall encourage project designs that minimize drainage concentrations and impervious coverage and maintain, to the extent feasible, natural site drainage conditions. | Consistent | The Project would result in the construction of about 11.9 acres of impervious surfaces. However, this represents only about 16 percent of the total site and the remaining area is not currently proposed for development. The existing drainage pattern and watershed boundaries of the Project site are proposed to remain essentially the same, with no significant areas being diverted to other drainage watersheds. |

| General Plan Policies | Consistency Determination | Analysis |
|---|---|---|
| **Policy 4.E.13:** The County shall require that new development conforms with the applicable programs, policies, recommendations, and plans of the Placer County Flood Control and Water Conservation District. | Consistent | The proposed Project would be designed and constructed in accordance with all Placer County regulations including those of the Placer County Flood Control and Water Conservation District. |
| **Policy 4.E.14:** The County shall require projects that have significant impacts on the quantity and quality of surface water runoff to allocate land as necessary for the purpose of detaining post-project flows and/or for the incorporation of mitigation measures for water quality impacts related to urban runoff. | Consistent | All Project site runoff would be detained on-site in the existing pond/detention basin. The Project would not have significant impacts on the quantity or quality of surface water runoff (see Impacts 13.1, 13.2, and 13.3 below). |
| **Policy 4.E.16:** The County shall strive to protect domestic water supply canal systems from contamination resulting from spillage or runoff. | Consistent | There are no domestic water supply canal systems on the Project site. Runoff from the site would be routed through BMPs to minimize its sediment and pollutant content to protect downstream water quality. |
| **Policy 4.F.1:** The County shall require that arterial roadways and expressways, residences, commercial and industrial uses and emergency facilities be protected, at a minimum, from a 100-year storm event. | Consistent | The Project site and surrounding roadways are located outside the 100-year flood zone. |
| **Policy 4.F.4:** The County shall require evaluation of potential flood hazards prior to approval of development projects. The County shall require proponents of new development to submit accurate topographic and flow characteristics information and depiction of the 100-year floodplain boundaries under fully-developed, unmitigated runoff conditions. | Consistent | The potential flood hazards associated with the proposed Project are evaluated under Impact 13.7 below. The Project site is not located within a flood hazard zone as determined by FEMA and would not result in on- or off-site flooding conditions due to increased stormwater runoff (see Impact 13.3). |
| **Natural Resources Section** | | |
| **Policy 6.A.5:** The County shall continue to require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and urban runoff and to encourage the use of BMPs for agricultural activities. | Consistent | The proposed drainage system includes the use of temporary and permanent BMPs on the Project site in order to protect water quality. |
| Policy 6.A.7: The County shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat. | Consistent | In accordance with this policy, Policy 36 from the Granite Bay Community Plan, and the County's Erosion and Sediment Control Ordinance (Section 15.48.630 of the County Code), grading activities would not be permitted during the rainy season. |
| **Policy 6.A.10:** The County shall protect groundwater resources from contamination and further overdraft by pursuing the following efforts:<br>a. Identifying and controlling sources of potential contamination;<br>b. Protecting important groundwater recharge areas;<br>c. Encouraging the use of surface water to supply major municipal and industrial consumptive demands;<br>d. Encouraging the use of treated wastewater for | Consistent | The proposed Project would incorporate BMPs during construction and post construction to protect surface water and groundwater quality. The Project would not be served by groundwater supplies and would not affect groundwater levels. |

| General Plan Policies | Consistency Determination | Analysis |
|---|---|---|
| groundwater recharge; and<br>e. Supporting major consumptive use of groundwater aquifer(s) in the western part of the County only where it can be demonstrated that this use does not exceed safe yield and is appropriately balanced with surface water supply to the same area. | | |
| **Policy 6.B.3:** The County shall discourage direct runoff of pollutants and siltation into wetland areas from outfalls serving nearby urban development. Development shall be designed in such a manner that pollutants and siltation will not significantly adversely affect the value or function of wetlands. | Consistent | A portion of Project site runoff would be directed to on-site vernal pools for storage/percolation. However, all runoff would be routed through BMPs to minimize sediment and pollutant levels and protect water quality. |
| **Health and Safety Section** | | |
| **Policy 8.B.4:** The County shall require that the design and location of dams and levees be in accordance with all applicable design standards and specifications and accepted state-of-the-art design and construction practices. | Consistent | The existing pond and dam on the Project site would be improved for use as a detention basin and to comply with all applicable standards. |
| **Policy 8.B.5:** The County shall coordinate with neighboring jurisdictions to mitigate the impacts of new development in Placer County that could increase or potentially affect runoff onto parcels downstream in a neighboring jurisdiction. | Consistent | As discussed under Impact 13.3 below, peak runoff flows and volumes leaving the Project site would be the same or less than under current conditions and there would be no impact to downstream parcels within or outside Placer County. |

### Granite Bay Community Plan

**Table 13-2** lists the Community Plan goals and policies that relate to hydrology and water quality and the proposed Project and provides an analysis of the Project's consistency with these goals and policies. While this EIR analyzes the Project's consistency with the Community Plan pursuant to State CEQA Guidelines Section 15125(d), the Placer County Board of Supervisors ultimately determines consistency with the General Plan.

**TABLE 13-2**
**COMMUNITY PLAN CONSISTENCY ANALYSIS – HYDROLOGY AND WATER QUALITY**

| Community Plan Policies | Consistency Determination | Analysis |
|---|---|---|
| *Resources* | | |
| **Policy 15:** Retain in their natural condition all stream influence areas, including floodplains and riparian vegetation areas, while allowing for limited stream crossings for public roads, trail, and utilities. | Consistent | The existing drainage pattern and watershed boundaries of the Project site are proposed to remain essentially the same, with no significant areas being diverted to other drainage watersheds. There are no streams on the Project site. |

| Community Plan Policies | Consistency Determination | Analysis |
|---|---|---|
| **Policy 26:** Review proposed projects for their potential adverse affect on air and water quality. | Consistent | The Project's potential adverse effects on water quality are discussed under Impacts 13.1 and 13.2 below. The reader is referred to Section 10.0 for a discussion of the Project's potential effects on air quality. |
| **Policy 27:** Encourage application of measures to mitigate erosion and water pollution from earth disturbing activities such as land development and road construction. | Consistent | The Project's proposed drainage system includes the use of both temporary and permanent BMPs to protect water quality during and post construction. The Project would also be subject to the state's NPDES permit program and the County's Stormwater Management Plan. |
| **Policy 36:** Grading activities shall be prohibited during the rainy season. | Consistent | In accordance with this policy, Policy 6.A.7 of the Placer County General Plan, and the County's Erosion and Sediment Control Ordinance (Section 15.48.630 of the County Code), grading activities would not be permitted during the rainy season. |

### Placer County Stormwater Management Plan

Placer County has prepared the Placer County Stormwater Management Plan 2003–2008 (SWMP) in compliance with NPDES Phase II regulations. The Placer County SWMP is a comprehensive program designed to reduce pollution in stormwater runoff in the western portions of the county. The SWMP was submitted to the CVRWQCB as part of an application package and permitting requirements set forth under the state's jurisdiction of the NPDES Phase II program. Thereby, the County was granted a permit under the state's General NPDES Phase II program, and the final version of the SWMP was published in March 2004. The SWMP will help the County to reduce pollutants in local waterways by reducing pollutants in stormwater runoff through the following control measures:

- Public education and outreach on stormwater impact
- Public involvement/participation
- Illicit discharge detection and elimination
- Construction site stormwater runoff control
- Post-construction stormwater management in new development and redevelopment
- Pollution prevention/good housekeeping for municipal operations

In addition to these measures, the SWMP imposes discharge prohibitions, effluent limitation, receiving water limitations, new development design standards, and additional evaluation and reporting requirements. The SWMP also includes specific BMPs that support the program's main control measures.

### Dry Creek Watershed Coordinated Resource Management Plan

In 2003, Placer and Sacramento counties prepared a Resource Management Plan for the Dry Creek watershed that compiles available data regarding the watershed's resources and identifies management goals and implementation strategies that address issues related to water quality, floodplain management, habitat restoration, recreational opportunities, water supply, and public education (Placer and Sacramento Counties, 2003).

### Placer County Code

Chapter 15.48 of the Placer County Code contains ordinances that regulate grading and erosion. The ordinances under this chapter were enacted to regulate grading on property within unincorporated areas of Placer County to:

> *…safeguard life, limb, health, property and public welfare; to avoid pollution of watercourses with hazardous materials, nutrients, sediments, or other earthen materials generated on or caused by surface runoff on or across the permit area; and to ensure that the intended use of a graded site is consistent with the Placer County General Plan, and specific plans adopted thereto and applicable chapters of the California Building Ordinance (Chapter 18 Placer County Code) and applicable chapters of the California Building Code.*

### Section 15.48.050 Water obstruction

No person shall do or permit to be done any grading which may obstruct, impede or interfere with the natural flow of stormwaters, in such manner as to cause flooding where it would not otherwise occur, aggravate any existing flooding condition or cause accelerated erosion. This section applies whether such waters are unconfined upon the surface of the land or confined within land depressions or natural drainage ways, unimproved channels or watercourses, or improved ditches, channels or conduits.

### Section 15.48.570 Drainage–General

Any drainage structure(s) or device(s) carrying surface water runoff required by this article shall be designed and constructed in accordance with standards herein, the current Placer County flood control and water conservation district stormwater management manual and criteria authorized by the agency director.

### Section 15.48.580 Drainage discharge requirements

All drainage facilities shall be designed and engineered to carry surface and subsurface waters to the nearest adequate street, storm drain, natural watercourse, or other juncture.

### Section 15.48.590 Drainage—Water accumulation

All areas shall be graded and drained so that drainage will not cause erosion or endanger the stability of any cut or fill slope or any building or structure.

### Section 15.48.600 Drainage protection of adjoining property

When surface drainage is discharged onto any adjoining property, it shall be discharged in such a manner that it will not cause erosion or endanger any cut or fill slope or any building or structure.

### Section 15.48.630 Erosion and sediment control

The following shall apply to the control of erosion and sediment from grading operations:

a) Grading plans shall be designed with long-term erosion and sediment control as a primary consideration. Erosion prevention and source control are to be emphasized over sediment controls and treatment.

b) Grading operations during the rainy season shall provide erosion and sediment control measures except upon a clear demonstration, to the satisfaction of the community development resource agency that at no stage of the work will there by any substantial risk of increased sediment discharge form the site. Temporary mulch, revegetation, or other stabilization methods shall be applied to areas where permanent revegetation or landscaping cannot be immediately implemented. Unless otherwise exempted in this article, grading activity must be scheduled to ensure completion or winterization by October 15$^{th}$ of each year.

c) Grading activity shall be conducted such that the smallest practicable area of erodible land is exposed at any one time during grading operations and the time of exposure is minimized. Land disturbance shall be limited to the minimum area necessary for construction.

d) Natural features, including vegetation, terrain, watercourses and similar resources shall be protected and preserved wherever possible. Units of grading shall be clearly defined and marked to prevent damage by construction equipment.

e) Permanent vegetation and structures for erosion and sediment control shall be installed as soon as possible.

f) Adequate provision shall be made for effective maintenance of temporary and permanent erosion and sediment control structures and vegetation. Sediment and other construction-related wastes shall be retained and properly managed on the site or properly disposed of off-site.

g) No topsoil shall be removed from the site unless otherwise directed or approved by the community development resource agency. Topsoil overburden shall be stockpiled and redistributed where appropriate within the graded area after rough grading to provide a suitable base for seeding and planting. Runoff from the stockpiled area shall be controlled to prevent erosion and resultant sedimentation of receiving water.

h) Runoff shall not be discharged from the site in quantities or at velocities substantially above those which occurred before grading except into drainage facilities, whose design has been specifically approved by the community development resource agency.

i) The permittee shall take reasonable precautions to ensure that vehicles do not track or spill earth materials into public streets and shall immediately remove such materials if this occurs.

j) All cut and fill slopes shall be adequately stabilized to prevent erosion and failure through temporary and permanent means.

k) Control measures shall be employed to prevent transport of dust off the project site or into any drainage course or water body.

### Section 15.48.670 Vehicular ways–Drainage

Vehicular ways shall be graded and drained in such a manner that will not allow erosion or endanger the stability of any adjacent slope. Surface discharge onto adjoining property shall be controlled in such a manner that it does not cause erosion or endanger existing improvements. Bridges and culverts installed in watercourses may be reviewed by the Placer County Flood Control and Water Conservation District and must be approved by the Public Works Director, and any other required permitting agency. (Ord. 5056-B (part), 2000)

Ordinances in this chapter describe in detail standards for levees, obstructing natural flows of stormwater, drainage discharge requirements, water storage areas, drainage protection of adjacent properties, terraced drainage, subsurface drainage, erosion and sediment control plan requirements, and drainage of roads. The County also enacted the Flood Damage Prevention Ordinance, which limits construction in areas within the 100-year flood zone to prevent damage to property and limit the effect of development on loss of floodplain storage and flood water elevations. This ordinance uses the following methods to reduce flood losses:

### Section 15.52.040 Methods of reducing flood losses

In order to accomplish its purpose, this article includes methods and provisions for:

a) Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increase in erosion or flood heights or velocities;

b) Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;

c) Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters;

d) Controlling fill, grading, dredging, and other development which may increase flood damage; and

e) Preventing or regulating the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.

### Placer County Flood Control and Water Conservation District

The Placer County Flood Control and Water Conservation District (PCFCWCD) was formed by Senate Bill 1312, effective August 23, 1984. PCFCWCD formulates regional strategies for flood control management. In 1990, PCFCWCD developed a Stormwater Management Manual (SWMM) that presents policy, guidelines, and specific criteria for evaluating hydrologic and

hydraulic conditions associated with new development within the context of regional stormwater issues. The manual was revised in 1992, 1994, and 1997.

#### Placer County Land Development Manual

Section 5 of the Placer County Land Development Manual (1996) provides supplemental design considerations for drainage facilities and includes specific criteria used for preparation of drainage reports identical to those in the SWMM (as described above under Placer County Flood Control and Water Conservation District). The Land Development Manual states that in case of conflict with the SWMM, the most stringent requirement shall apply. The Land Development Manual also contains general information with regard to erosion control and BMPs for stormwater drainage.

## 13.3 IMPACTS

### 13.3.1 Standards of Significance

Based on Appendix G of the CEQA Guidelines and Placer County's established significance criteria, the proposed Project would result in a significant impact to hydrology or water quality if it would:

1) Violate any water quality standards or waste discharge requirements.

2) 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 level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

3) Alter the direction or rate of flow of groundwater.

4) 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 which would result in substantial erosion or siltation on- or off-site.

5) 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 which would result in flooding on- or off-site.

6) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

7) Otherwise substantially degrade water quality.

8) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary of Flood Insurance Rate Map or other flood hazard delineation map.

9) Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

10) 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.

11) Inundation by seiche, tsunami, or mudflow.

12) Impact the watershed of important surface water resources, including but not limited to Lake Tahoe, Folsom Lake, Hell Hole Reservoir, Rock Creek Reservoir, Sugar Pine Reservoir, French Meadows Reservoir, Combie Lake, and Rollins Lake.

### 13.3.2 Methodology

The hydrology and water quality analysis presented below is based on a review of published information, reports and plans regarding regional and local hydrology, climate, topography, and geology obtained from private and governmental agencies as well as from Internet websites. Primary sources include the Preliminary Drainage Study (2008, updated 2011) prepared to address the proposed Project by King Engineering, Inc. (see **Appendix 13.0-1**), CVRWQCB's Water Quality Control Plan for the Sacramento and San Joaquin River Basins (2007), the Dry Creek Watershed Coordinated Resource Management Plan (2003), FEMA Flood Insurance Rate Maps (FIRMS), and the Department of Water Resources Bulletin 118 for the North American Groundwater Subbasin. Agencies consulted include Placer County, the Department of Water Resources, the Central Valley Regional Water Quality Control Board, FEMA, and the Placer County Water Agency.

### 13.3.3 Project-Level Impacts and Mitigation Measures

**IMPACT 13.1: Degrade Surface Water Quality – Construction**

Construction of the proposed Project would introduce sediments and other contaminants typically associated with construction into stormwater runoff, potentially resulting in the degradation of downstream surface water quality. Stormwater flowing over the Project site during construction could carry various pollutants downstream such as sediment, nutrients, bacteria and viruses, oil and grease, heavy metals, organics, pesticides, gross pollutants, and miscellaneous waste. These pollutants could originate from soil disturbances, construction equipment, building materials, and workers (CSQA, 2003). The proposed Project has the potential to result in the generation of new dry weather runoff containing these pollutants and also has the potential to increase the concentration and/or total load of the pollutants in wet weather stormwater runoff. Erosion potential and water quality impacts are always present during construction and occur when protective vegetative cover is removed and soils are disturbed. In this case, it is primarily the grading associated with the site improvements, utilities, driveways, and building pads that could contribute to erosion and water quality degradation. This impact is **potentially significant**.

The State Water Resources Control Board (SWRCB) is responsible for implementing the Clean Water Act and has issued a statewide General Permit (Water Quality Order 2009-0009-DWQ) for construction activities within the state. The Construction General Permit (CGP) is implemented and enforced by the Regional Water Quality Control Boards (RWQCBs). The CGP applies to construction activities that disturb 1 acre or more and requires the preparation and implementation of a stormwater pollution prevention plan (SWPPP) that identifies best management practices (BMPs) to minimize pollutants from discharging from the construction site to the maximum extent practicable (MEP).

The BMPs that must be implemented can be grouped into two major categories: (1) erosion and sediment control BMPs and (2) non-stormwater management and materials management BMPs. Erosion and sediment control BMPs fall into four main subcategories:

- Erosion controls
- Sediment controls
- Wind erosion controls
- Tracking controls

Erosion controls include practices to stabilize soil, to protect the soil in its existing location, and to prevent soil particles from migrating. Examples of erosion control BMPs are preserving existing vegetation, mulching, and hydroseeding. Sediment controls are practices to collect soil particles after they have migrated, but before the sediment leaves the site. Examples of sediment control BMPs are street sweeping, fiber rolls, silt fencing, gravel bags, sand bags, storm drain inlet protection, sediment traps, and detention basins. Wind erosion controls prevent soil particles from leaving the site in the air. Examples of wind erosion control BMPs include applying water or other dust suppressants to exposed soils on the site. Tracking controls prevent sediment from being tracked off-site via vehicles leaving the site to the extent practicable. A stabilized construction entrance not only limits the access points to the construction site, but also functions to partially remove sediment from vehicles prior to leaving the site.

Non-stormwater management and material management controls reduce non-sediment-related pollutants from potentially leaving the construction site to the extent practicable. The CGP prohibits the discharge of materials other than stormwater and authorized non-stormwater discharges (such as irrigation and pipe flushing and testing). Non-stormwater BMPs tend to be management practices with the purpose of preventing stormwater from coming into contact with potential pollutants. Examples of non-stormwater BMPs include preventing illicit discharges and implementing good practices for vehicle and equipment maintenance, cleaning and fueling operations, such as using drip pans under vehicles. Waste and materials management BMPs include implementing practices and procedures to prevent pollution from materials used on construction sites. Examples of materials management BMPs include:

- Good housekeeping activities such as storing of materials covered and elevated off the ground, in a central location.
- Securely locating portable toilets away from the storm drainage system and performing routine maintenance.
- Providing a central location for concrete washout and performing routine maintenance.
- Providing several dumpsters and trash cans throughout the construction site for litter/floatable management.
- Covering and/or containing stockpiled materials and overall good housekeeping on the site.

In accordance with mitigation measure **MM 12-3d** in Section 12.0 of this Draft EIR, prior to construction of the proposed Project, a SWPPP must be developed and submitted to the County that identifies the specific BMPs to be implemented and maintained on the site. A Notice of

Intent must also be filed with CVRWQCB. The CGP also requires that construction sites be inspected before and after storm events and every 24 hours during extended storm events. The purpose of the inspections is to identify maintenance requirements for the BMPs and to determine the effectiveness of the BMPs that are being implemented. The SWPPP is a "living document" and as such can be modified as construction activities progress.

The SWRCB has also issued a statewide General Permit (Water Quality Order R5-2008-0081, NPDES No. CAG995001) for dewatering and other low-threat discharges to surface waters within the state. Should construction of the proposed Project require dewatering, the Project applicant would be required to submit a Notice of Intent, as well as a Best Management Practices Plan, to comply with the General Permit. The BMP Plan would include disposal practices to ensure compliance with the General Permit such as the use of sediment basins or traps, dewatering tanks, or gravity or pressurized bag filters. Monitoring and reporting would also be performed to ensure compliance with the permit (CVRWQCB, 2008; CSQA, 2003).

### Mitigation Measure 13-1 Implement Best Management Practices During Construction

The applicant shall implement temporary BMPs to include minimum erosion control measures such as straw logs, silt fence, water bars, or diversion berms directing stormwater to flow spreaders, gravel bags, straw mulch, and inlet filters. The Project shall utilize a gravel construction entry which would reduce tracked mud onto Sierra College Boulevard. Sediment traps shall be installed to protect the existing on-site wetlands.

**SIGNIFICANCE AFTER MITIGATION**

Compliance with the SWRCB's statewide General Permits for construction and dewatering, the Placer County Land Development Manual and Chapter 15.48 of the Placer County Code as described above and required by mitigation measures **MM 12-3a** through **12-3h**, and adherence to mitigation measure **13-1** would minimize the potential degradation of stormwater quality and downstream surface water associated with construction of the proposed Project. Compliance would reduce this impact to a **less than significant** level.

**IMPACT 13.2: Degrade Groundwater Quality – Construction**

As described under Impact 13.1 above, construction of the proposed Project could introduce sediments and other contaminants typically associated with construction into stormwater runoff. This contaminated stormwater runoff could reach the underlying aquifer, potentially resulting in the degradation of groundwater quality. Stormwater flowing over the Project site during construction could carry various pollutants downstream such as sediment, nutrients, bacteria and viruses, oil and grease, heavy metals, organics, pesticides, gross pollutants, and miscellaneous waste. These pollutants could originate from soil disturbances, construction equipment, building materials, and workers (CSQA, 2003). The proposed Project has the potential to result in the generation of new dry weather runoff containing these pollutants and also has the potential to increase the concentration and/or total load of the pollutants in wet weather stormwater runoff. Erosion potential and water quality impacts are always present during construction and occur when protective vegetative cover is removed and soils are disturbed. In this case, it is primarily the grading associated with the site improvements, utilities, driveways, and building pads that could contribute to erosion and water quality degradation.

The stormwater drainage flowing over the Project site will be detained in the existing on-site detention pond before being released to downstream waterways. As such, drainage will be allowed to partially infiltrate into the underlying soils. Infiltration is an effective mechanism for pollutant control. As runoff infiltrates into the ground, particulates and attached contaminants such as metals and nutrients are removed as they become attached to soil particles. Dissolved constituents are also absorbed by soil particles (USEPA, 1999). The depth to groundwater on the Project site exceeds 100 feet below ground surface, providing ample opportunity for infiltration before drainage reaches the aquifer. However, as described in subsection 13.1.3 above, Project site soils have slow to very slow infiltration rates and high runoff potential.

In addition, a review of Placer County Environmental Health Services records shows an existing well served the house which was located near the stock pond on the Project site. This well could serve as a conduit to the water table and has the potential to violate potable water quality standards by acts of vandalism or by mismanagement of the water well. This impact is **potentially significant**.

The proposed Project would be required to comply with the provisions of the SWRCB's statewide General Permit (Water Quality Order 2009-0009-DWQ) for construction activities as described in Impact 13.1 above. The Project applicant would be required to submit a Notice of Intent to obtain coverage under the General Permit as well as a risk assessment determining the Project's risk level and associated water quality control requirements. Depending on the Project's risk level, these requirements would include, at a minimum, preparation of a SWPPP that identifies best management practices (BMPs) to minimize pollutants from discharging from the construction site to the maximum extent practicable (MEP). As described above, these BMPs would include erosion and sediment control measures and non-stormwater management and materials management measures. Implementation of these measures would be required in order to comply with narrative effluent standards and would be visually monitored. If the Project's risk level is determined to be greater (Levels 2 or 3), it would be subject to specific numeric effluent standards, additional sediment control measures, and more detailed monitoring at the receiving waters.

Furthermore, groundwater may be encountered during certain construction activities, such as drilling and excavating for building footings and foundations and trenching for infrastructure. As a result, dewatering may be required of both the construction site and any saturated material removed during construction. Dewatering refers to the removal of non-stormwater (such as groundwater encountered during drilling or excavations) and accumulated precipitation from a construction site so that construction work may be accomplished (CSQA, 2003). Although such water is generally considered to be relatively pollutant-free, it would likely contain sediments, particularly remnants of mud from drilling and excavations. Discharge of these sediments and the release of pollutants associated with the sediments could reach the underlying groundwater aquifer, potentially violating water quality standards.

The SWRCB has also issued a statewide General Permit (Water Quality Order R5-2008-0081, NPDES No. CAG995001) for dewatering and other low-threat discharges to surface waters in the state. Should construction of the proposed Project require dewatering, the Project applicant would be required to submit a Notice of Intent, as well as a Best Management Practices Plan, to comply with the General Permit. The BMP Plan would include disposal practices to ensure compliance with the General Permit such as the use of sediment basins or traps, dewatering tanks, or gravity or pressurized bag filters. Monitoring and reporting would also be performed to ensure compliance with the permit (CVRWQCB, 2008; CSQA, 2003).

### Mitigation Measure 13-2 Properly Destroy On-Site Groundwater Well Via Permit

In order to protect the water table, the existing water well shall be properly destroyed via permit through the Placer County Environmental Health Services Department prior to approval of the Improvement Plans. Additionally, the water well location shall be shown on the Improvement and Grading Plans to prevent the well from being damaged by grading equipment.

**SIGNIFICANCE AFTER MITIGATION**

Compliance with the SWRCB's statewide General Permits for construction and dewatering, the Placer County Land Development Manual and Chapter 15.48 of the Placer County Code as described above, and adherence to mitigation measures **13-1** and **13-2** would minimize the potential degradation of stormwater quality and downstream surface water and groundwater associated with construction of the proposed Project. Compliance would assist in reducing this impact to a **less than significant** level.

**IMPACT 13.3: Degrade Surface Water Quality – Operation**

Operation of the proposed Project would introduce sediments and other contaminants typically associated with urban development into stormwater runoff, potentially resulting in the degradation of downstream surface water quality.

The proposed Project would convert approximately 17 of the site's 75 acres to urban uses. This conversion to urban uses would substantially increase the impervious surface area, which in turn would increase runoff from the introduction of driveways, parking areas, rooftops, and other surfaces and could contain oil and grease, heavy metals, chemicals, and other urban pollutants. Runoff from proposed landscape areas could also contribute chemicals from fertilizers, pesticides, and herbicides. This runoff would be collected and retained within the proposed on-site drainage system and existing detention pond (see Impact 13.5) and slowly released to downstream surface waters and on-site wetlands and swales, where it would percolate into the underlying groundwater aquifer. This impact is **potentially significant**.

The Project would be required to utilize stormwater best management practices to prevent erosion and to ease stormwater runoff and downstream drainage impacts. Though the increase in impervious surfaces has the potential to degrade water quality by introducing oils, greases, and sediments into the stormwater runoff, the proposed drainage system would include temporary BMPs as well as permanent BMPs (see **Figures 3-10a** and **3-10b** in Section 3.0, Project Description). The Project proposes the following BMPs:

- A drop inlet sump for large sediment trap upstream of the existing man-made pond (permanent).
- Grassed swales placed on contour with one gallon per second or less design velocity and 10-minute design detention time (flowed based design), rock level spreaders, and rock flow dissipaters spread flow out or reduce velocity (permanent).
- Shallow grass swales over low permeable native soils due to underlying lava rock. Treated runoff from the grassed swales will flow into the existing man-made pond to experience further detention time (permanent).

- Sediment traps at drainage inlets and sediment barrier. Wattles placed on contour or against contours to trap sediments. Sediment barriers are placed downhill of construction (temporary).

These BMPs would remove sediment and pollutants from site runoff and minimize impacts to downstream waterways. No runoff from the site would flow into the adjacent San Juan Water District water reservoir.

**Mitigation Measure 13-3 Implement Best Management Practices After Construction and During Operation of the Proposed Project**

The applicant shall implement permanent BMPs to include the minimum erosion control measures such as inlets, culverts, open clarifying basins, erosion mat-lined, rock-lined or seeded ditches, rock flow spreaders, and detention basins. Seeding, mulching, and landscaping are proposed to stabilize disturbed soils. In addition, the following measures shall be implemented:

- All storm drain inlets and catch basins within the Project area shall be permanently marked/embossed with prohibitive language such as "No Dumping! Flows to Creek" or other language as approved by the Engineering and Surveying Department (ESD) and/or graphical icons to discourage illegal dumping. Message details, placement, and locations shall be included on the Improvement Plans. ESD-approved signs and prohibitive language and/or graphical icons, which prohibit illegal dumping, shall be posted at public access points along channels and creeks within the Project area. The property owner, in this case, the Project applicant, is responsible for maintaining the legibility of stamped messages and signs.

- All stormwater runoff shall be diverted around trash storage areas to minimize contact with pollutants. Trash container areas shall be screened or walled to prevent off-site transport of trash by the forces of water or wind. Trash containers shall not be allowed to leak and must remain covered when not in use. Materials with the potential to contaminate stormwater that are to be stored outdoors shall be placed in an enclosure such as, but not limited to, a cabinet, shed, or similar structure that prevents contact with runoff or spillage to the stormwater conveyance system, or protected by secondary containment structures such as berms, dikes, or curbs. The storage area shall be paved to contain leaks and spills and shall have a roof or awning to minimize collection of stormwater within the secondary containment area.

**SIGNIFICANCE AFTER MITIGATION**

With implementation of mitigation measures **13-3** and **MM 12-3a** and **MM 12-3c**, this impact would be reduced to a **less than significant** level.

**IMPACT 13.4: Degrade Groundwater Quality – Operation**

As described in Impact 13.3 above, operation of the proposed Project would introduce sediments and other contaminants typically associated with urban development into stormwater runoff. Introduction of these contaminants could result in the degradation of the groundwater quality of the underlying aquifer. This impact is **potentially significant**.

The proposed Project would convert approximately 17 acres of the 75-acre undeveloped Project site to urban uses. This conversion to urban uses would substantially increase the impervious surface area, which in turn would increase runoff from the introduction of driveways, parking

areas, rooftops, and other surfaces and could contain oil and grease, heavy metals, chemicals, and other urban pollutants. Runoff from proposed landscape areas could also contribute chemicals from fertilizers, pesticides, and herbicides. This runoff would be collected and retained within the proposed on-site drainage system and existing detention pond (see Impact 13.5) and slowly released to downstream surface waters and on-site wetlands and swales, where it would percolate into the underlying groundwater aquifer. The Project would be required to utilize stormwater best management practices to prevent erosion and to ease stormwater runoff and downstream drainage impacts. Though the increase in impervious surfaces has the potential to degrade water quality by introducing oils, greases, and sediments into the stormwater runoff, the proposed drainage system would include permanent and temporary BMPs (see **Figures 3-10a** and **3-10b** in Section 3.0, Project Description). The Project proposes the following BMPs:

- A drop inlet sump for large sediment trap upstream of the existing man-made pond (permanent).
- Grassed swales placed on contour with one gallon per second or less design velocity and 10-minute design detention time (flowed based design), rock level spreaders, and rock flow dissipaters spread flow out or reduce velocity (permanent).
- Shallow grass swales over low permeable native soils due to underlying lava rock. Treated runoff from the grassed swales will flow into the existing man-made pond to experience further detention time (permanent).
- Sediment traps at drainage inlets and sediment barrier. Wattles placed on contour or against contours to trap sediments. Sediment barriers are placed downhill of construction (temporary).

These BMPs would remove sediment and pollutants from site runoff and minimize impacts to the underlying aquifer.

With implementation of mitigation measures **13-3** and **MM 12-3a** and **MM 12-3c**, this impact would be reduced to a **less than significant** level.

**IMPACT 13.5: Increase Stormwater Runoff**

When land is in a natural or undeveloped condition, soils, mulch, vegetation, and plant roots absorb rainwater. This absorption process is called infiltration or percolation. Much of the rainwater that falls on natural or undeveloped land slowly infiltrates into the soil and is stored either temporarily or permanently on the surface or in underground layers of soil. When the soil becomes completely saturated with water or the rate of rainfall exceeds the infiltration capacity of the soil, the rainwater begins to flow over the surface of the land to low-lying areas, ditches, channels, streams, and rivers as stormwater runoff. The natural drainage flows on the Project site are shown on **Figure 13-2,** and the three drainage outfall locations are marked as points A, B, and C.

The infiltration and runoff process is altered when a site is developed with urban uses. Buildings, roads, and parking lots introduce asphalt, concrete, and roofing materials to the landscape. These materials are relatively impervious, which means that they absorb less rainwater. Grading associated with development also eliminates many of the low-lying areas that may have been providing a degree of surface storage. In addition, construction of underground storm drains as part of urban development provides for efficient conveyance of runoff to downstream locations of discharge. As impervious surfaces are added to the ground conditions and surface and underground drainage conveyance becomes more efficient and more concentrated, the natural

infiltration and storage processes are reduced. As a result, the frequency, volume, and flow rate of stormwater runoff increases. The effect of these increases in runoff frequency, rates, and volumes would be more pronounced during storms of lower magnitude and higher frequency. This is due to reductions in initial abstraction (infiltration and surface storage) and time of concentration (travel times) that would be created by urban development. The increased frequency, volumes, and flow rates of stormwater runoff may result in increased downstream flooding and/or erosion/sedimentation processes if not properly mitigated.

Development of the proposed Project would increase stormwater runoff rates and volumes when compared with existing conditions for the reasons described above. Specifically, the Project would impact, fill, or disturb approximately 17 acres, would fill or disturb 0.21 acres of vernal pools, and would also disturb 0.03 acres of Pond B1 outlet. Additionally, the Project would add approximately 11.9 acres of impervious roof, driveway, and parking lot area.

The Project would include the construction of an on-site drainage system that would generally consist of parking lot gutters, inlets, and culverts directing drainage through temporary and permanent BMPs (as described above) and into the existing man-made pond (Pond B1), which would continue to be used as a detention basin. The existing drainage patterns and watershed boundaries on the site are proposed to remain essentially the same, with no significant areas being diverted to other drainage watersheds.

A detailed comparison of pre- and post-development flows is shown at the end of **Appendix 13.0-1** (Preliminary Drainage Maps No. 1 and No. 2). The reader is also referred to Section 6.0, Biological Resources, for further discussion of potential impacts to wetland from drainage improvements and associated mitigation. Based on the pre-development drainage conditions on the site and the proposed improvements, the Preliminary Drainage Report prepared for the proposed Project determined the following anticipated effects at each of the site's drainage points (see **Figure 13-2**):

- Point A: There would be no increase to the peak drainage flow to Point A and no further mitigation is recommended beyond implementation of mitigation measure **13-1**.

- Point B: There would be an increase in the peak runoff at this point, potentially affecting downstream properties with deeper flows and higher velocities. This increase would be primarily from impervious improvements increasing the runoff and reducing the travel time of the drainage to this point. Pond B1 is proposed to remain and be modified to better function as a detention pond. Mitigation is recommended to address this increase in peak runoff and to ensure the adequacy of Pond B1 and the associated dam.

- Point C: There would be a decrease to the peak drainage flow at this point in the gutter of Sierra College Boulevard. No further mitigation is recommended beyond implementation of mitigation measures **13-1** and **9-6**.

- Area D: There would be a decrease in the peak drainage flow from this area. No further mitigation is recommended beyond implementation of mitigation measure **13-1**.

Off-site improvements to Sierra College Boulevard required as part of the proposed Project (i.e., road widening and frontage improvements) would result in an additional approximately 0.50 acres of impervious surface in the drainage shed and would contribute to runoff flowing into the gutter and road ditch from Drainage Point C and Area D. However, this increased runoff would

be offset by the reductions in peak drainage flow from Drainage Point C and Area D, as described above, and no further mitigation is recommended beyond implementation of mitigation measures **13-1** and **9-6**.

The drainage study determined that without more detention than presently provided by the on-site pond, peak runoff at Point B would increase and affect downstream properties with deeper flow and higher velocities. This is a **potentially significant** impact.

### Mitigation Measure 13-5a Prepare and Adhere to Final Drainage Study

Prepare and submit with the Project Improvement Plans, a final drainage report in conformance with the requirements of Section 5 of the LDM and the Placer County Stormwater Management Manual that are in effect at the time of submittal, to the Engineering and Surveying Department for review and approval. The report shall be prepared by a Registered Civil Engineer and shall, at a minimum, include a written text addressing existing conditions, the effects of the improvements, all appropriate calculations, a watershed map, increases in downstream flows, proposed on- and off-site improvements, and drainage easements to accommodate flows from this Project. The report shall analyze the modification of the outlet weir of the on-site Pond B1. The report shall identify water quality protection features and methods to be used both during construction and for long-term post-construction water quality protection. Best management practice (BMP) measures shall be provided to reduce erosion and water quality degradation, and prevent the discharge of pollutants to stormwater to the maximum extent practicable.

### Mitigation Measure 13-5b Reduce Stormwater Runoff to Pre-Project Conditions

Stormwater runoff shall be reduced to pre-project conditions through the installation of retention/detention facilities. Retention/detention facilities shall be designed in accordance with the requirements of the Placer County Stormwater Management Manual that are in effect at the time of submittal and to the satisfaction of the Engineering and Surveying Department (ESD). The ESD may, after review of the Project drainage report, delete this requirement if it is determined that drainage conditions do not warrant installation of this type of facility. In the event on-site retention requirements are waived, this Project may be subject to payment of any in-lieu fees prescribed by County ordinance. No retention/detention facility construction shall be permitted within any identified wetlands area, floodplain, or right-of-way, except as authorized by project approvals.

### Mitigation Measure 13-5c Design Drainage Facilities in Accordance with County Requirements

Drainage facilities, for purposes of collecting runoff on the Project site, shall be designed in accordance with the requirements of the Placer County Stormwater Management Manual that are in effect at the time of submittal and shall be in compliance with applicable stormwater quality standards, to the satisfaction of the Engineering and Surveying Department (ESD). These facilities shall be constructed with site improvements and easements provided as required by ESD. Maintenance of these facilities shall be provided by the property owners.

### Mitigation Measure 13-5d Pay Drainage Improvement and Flood Control Fees

The applicant is subject to the one-time payment of drainage improvement and flood control fees pursuant to the Dry Creek Watershed Interim Drainage Improvement Ordinance (Ref. Chapter 15, Article 15.32, and Placer County Code). The current estimated development fee is $2,495,

payable to the Engineering and Surveying Department prior to building permit issuance. The actual fee shall be that in effect at the time payment occurs.

### Mitigation Measure 13-5e Fence Preserved Vernal Pools to Prevent Trespass and Damage

The vernal pools that are to remain undisturbed shall be surrounded with colored poly fencing prior to the start of construction. A low-profile permanent perimeter fence with signs shall be constructed once Project construction is completed to identify the pools in the dry season and prevent trespass and damage to the pools.

### Mitigation Measure 13-5f Improve or Rebuild Dam to Increase Detention Capacity

The applicant shall retain a qualified engineer to assess the structural integrity of the dam on the Project site based on all applicable state and local standards. Based on the results of this assessment, one of the following courses shall be taken:

1) If the dam is found to have the required integrity, including a non-seeping core, a new spillway shall be constructed with a lower spill elevation to increase the available detention volume. A lower spill elevation would lower the pond's normal water surface by 1.8 feet. This could cause a loss of wetland habitat. In order for these improvements to be implemented, the pond would be partially drained and there would be disturbance to the spillway area during construction. The U.S. Army Corps of Engineers Section 404 permit for the Project (required under mitigation measure **6-6**) shall address this potential loss of wetlands at the spillway and pond perimeter.

2) If the dam is found not to have the required integrity, it shall be rebuilt to meet all structural requirements. The new dam shall be constructed at an elevation 1.8 feet higher than the existing dam's elevation, and the associated spillway shall be constructed at the existing spillway's elevation. This would result in the pond's water surface remaining the same but the footprint of the dam would increase, resulting in a loss of wetland habitat at the spillway. In order for these improvements to be implemented, the pond would be completely drained and there would be disturbance to the pond during construction. The dam slope shall be planted with grass of like kind to the existing site vegetation. Any trees removed shall be replanted with like kind in a compatible location. The U.S. Army Corps of Engineers Section 404 permit for the Project (required under mitigation measure **6-6**) shall address the potential loss of wetland habitat at the spillway.

In addition, a new concrete weir shall be constructed at the spillway channel. As a result, the pond spillway would discharge less than pre-development flow to Point B. Pond B1 would then function as a detention basin in accordance with Placer County drainage standards and the criteria listed in the Preliminary Drainage Report for the Project (**Appendix 13.0-1**).

### SIGNIFICANCE AFTER MITIGATION

With implementation of mitigation measures **13-5a** through **13-5f**, the Project applicant would be required to submit a final drainage report with the final improvement plans for County review and approval, as well as having to provide adequate runoff collection facilities. This would reduce peak drainage flows to at or below pre-development conditions, and this impact would be reduced to a **less than significant** level.

The potential environmental effects of implementing mitigation measure **13-5f** (i.e., improving or rebuilding the existing dam on-site) could include soil erosion, disturbance of biological or cultural resources, water quality degradation, temporary noise and aesthetic impacts, and air pollutant and GHG emissions associated with construction vehicles. These potential environmental effects are addressed throughout this DEIR in sections 4.0 through 18.0. In particular, the reader is referred to Section 6.0, Biological Resources, for further discussion of the potential effects to biological resources associated with these improvements.

**IMPACT 13.6: Deplete Groundwater Supplies or Interfere with Groundwater Recharge**

The Project proposes the use of publicly treated surface water supplies, so there would be no direct impacts to groundwater quantity or direction due to well withdrawals. However, the introduction of the proposed buildings and associated impervious surfaces could interfere with natural percolation and recharge of the underlying groundwater aquifer.

The proposed Project is located within the Placer County Water Agency's Zone 1, which is served entirely by surface water supplies from the American River and the Bear and Yuba rivers via Lake Spaulding. Therefore, implementation of the proposed Project would have no direct impacts to groundwater supplies due to well withdrawals. However, the Project would create about 11.9 acres of impervious surfaces on the Project site and direct stormwater runoff to an improved drainage system. This could impede groundwater percolation on-site and reduce the rate of recharge of the underlying groundwater aquifer. The soil types in the Project area are not conducive to recharge, except along major drainage ways. As this Project does not involve disturbance of major drainage ways, impacts related to groundwater recharge would be **less than significant** and no further mitigation is required.

**IMPACT 13.7: Flooding Hazards**

The Project site is located in a minimal flood risk zone, or outside a 100-year flood hazard area, as designated by FEMA. As described above, the Project site has been designated by the Federal Emergency Management Agency as being within Flood Zone X. This zone consists of areas of minimal flood hazard from the principal source of flood in the area and that are determined to be outside of the 0.2 percent annual chance floodplain. The Project site slopes significantly (up to 35 percent) to the south, further minimizing the potential for flooding on-site or for exposing people and structures to a significant risk of loss, injury, or death as a result of flooding. Therefore, there is **no impact** from flooding hazards and no further mitigation is required.