3.10 HYDROLOGY AND WATER QUALITY

3.10.1 INTRODUCTION

This section describes existing surface and groundwater hydrology in the project area, including floodplain and stormwater issues and water quality; summarizes the regulations that govern hydrologic modification, protect water quality, and control floodplain development and stormwater management; and analyzes the potential effects to hydrology and water quality that could result from the implementation of the Proposed Action and its alternatives.

Sources of information used in this analysis include but are not limited to:

- Placer Vineyards Specific Plan (PVSP) EIR prepared by Placer County (2006);
- Placer Vineyards Master Project Drainage Study (2005); and
- Placer County Water Agency American River Pump Station Project EIS/EIR (2002).

Specific reference citations are provided in the text.

3.10.2 AFFECTED ENVIRONMENT

3.10.2.1 Regional and Local Surface Water Hydrology

The project site is located within three major watersheds: Dry Creek Drainage Basin, Curry Creek Drainage Basin, and Steelhead Creek (Upper Natomas East Main Drainage Canal [NEMDC]) Drainage Basin. All of the watersheds are part of the Sacramento River Basin.

The Sacramento River Basin—the area drained by the Sacramento River—covers approximately 27,210 square miles (70,473.6 square kilometers), extending from the Cascade and Trinity Ranges in the north to the Sacramento–San Joaquin Delta in the south, and from the Coast Ranges in the west to the Sierra Nevada in the east. It includes all watersheds draining to the Sacramento River north of the Cosumnes River watershed, as well as the closed (interior drainage) Goose Lake Basin and the Cache and Putah Creek subwatersheds. Besides the Sacramento River, principal streams within the watershed include the Pit, Feather, Yuba, Bear, and American Rivers, tributary from the east; and Cottonwood, Stony, Cache, and Putah Creeks, tributary from the west. Important reservoirs and lakes include Shasta, Oroville, Folsom, Clear Lake, and Lake Berryessa.

The County receives its water supply from various sources, including from the American, Yuba, and Bear Rivers. For the project's water supply effects, see **Section 3.15, Utilities and Service Systems.** The indirect effects of the project on fisheries from diverting American River water are addressed in **Section 3.4, Biological Resources.**

Figure 3.10-1, Project Site Watersheds, illustrates the drainage basins within the project site. Each drainage basin is described below.

Dry Creek Drainage Basin

The Dry Creek watershed is about 80 square miles (207.2 kilometers) in area and includes substantial developed areas upstream. Downstream, Dry Creek flows into northern Sacramento County through the community of Rio Linda until it reaches Steelhead Creek, which drains into the American River (Placer County 2006).

The Dry Creek Drainage Basin, although the largest regionally, includes only 477 acres (193 hectares) of the project site along the project site's southeast boundary. This basin is bounded to the east by Walerga Road, to the west by the Southeast Drainage Basin, and the Curry and North Drainage Basins to the north. Flows within the drainage basin are conveyed overland and through many small swales and roadside ditches towards Dry Creek. No culverts currently exist in this basin.

Within the project site, a low dam constructed of uncemented rock and broken concrete is placed across Dry Creek within the Federal Emergency Management Agency (FEMA) designated floodway, immediately downstream of the Watt Avenue bridge. The dam causes water to pool under and upstream of the bridge. An electric pump and intake structure have been placed on the northern bank of the creek, and water is intermittently withdrawn from the creek to irrigate pastureland on the north side of Dyer Lane. Upon conversion of the pastureland to urban use, the current practice of using Dry Creek flows for irrigation would cease within the project site (Placer County 2006).

Curry Creek Drainage Basin

Most of the Curry Creek watershed lies downstream of the project site, north of Baseline Road and west of Watt Avenue. This basin drains northwesterly into the Pleasant Grove Creek Canal, which flows northward to the Natomas Cross Canal to the Sacramento River. The portion of the watershed within the project site is approximately 240 acres (97.1 hectares) in area, with the total watershed containing approximately 1,360 acres (550.4 hectares). Curry Creek flows towards the northeast corner of the project site, crosses Baseline Road from the north, and runs parallel to the south of Baseline Road for approximately 4,000 feet (1219.2 meters). The creek then crosses Baseline Road, back to the north of the roadway and continues to the northwest. At these two crossings of Baseline Road, there is a 6-foot by 12-foot (1.8 meters by 3.6 meters) corrugated metal pipe to convey flows through the watershed (Placer County 2006).

Upper Steelhead Creek Drainage Basin

The Upper Steelhead Creek flows west across the project site before leaving the area at Baseline Road, flowing toward Steelhead Creek. This basin comprises approximately 4,380 acres (1772.5 hectares) of the project site. Six minor sub-watersheds within the project site drain west to Steelhead Creek. These watersheds are shown in **Figure 3.10-1**. Three of the watersheds drain into Sacramento County, two watersheds drain into Sutter County, and one drains north into Placer County. The Steelhead Creek watershed comprises approximately 181 square miles (468.8 square meters) of land in the greater Sacramento metropolitan area that includes significant portions of the Natomas area, northeastern Sacramento County, southern Placer County, and a small portion of Sutter County.

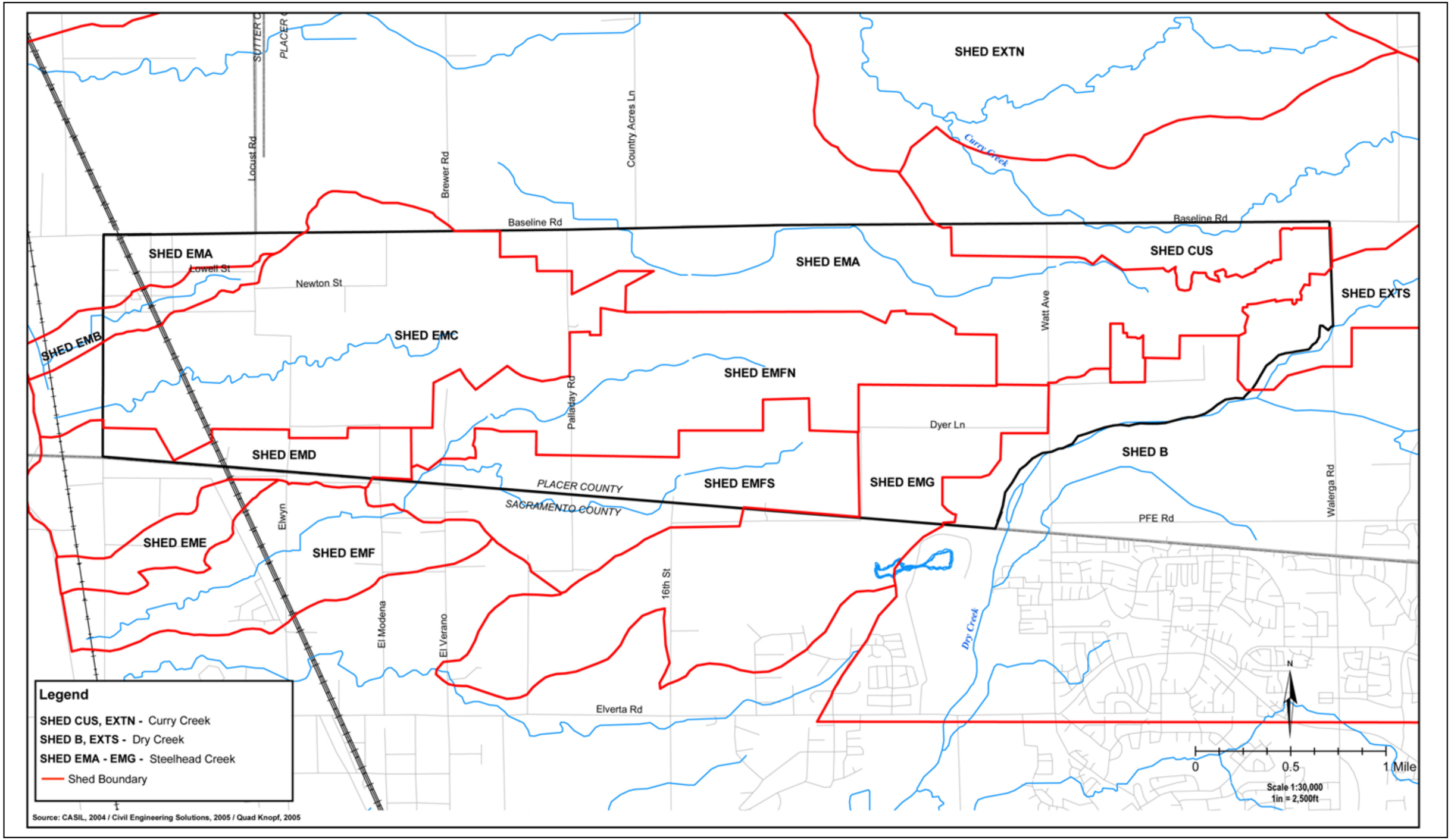

FIGURE **3.10-1**

Project Site Watersheds

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3.10.2.2 Regional Flood Hazards

Flooding results when water flow cannot be contained within the banks of natural or artificial drainage courses. Flooding can be caused by an excessive storm event, snow melt, blockage of watercourses by human as well as wildlife activity (e.g., beavers), dam failure, or a combination of these or other events. A flood event can cause injury or loss of property such as the flooding of structures, including homes and businesses; uplift vehicles and other objects; damage roadways, bridges, infrastructure, and public services; and cause soil instability, erosion, and land sliding. The Federal Emergency Management Agency (FEMA) develops flood risk data for use in insurance rating and floodplain management. Based on this data, FEMA prepares Flood Insurance Rate Maps (FIRMs) that delineate areas that are subject to inundation from a 100-year flood event (i.e., a flood that has a 1 percent chance of occurring in a given year).

The 100-year flood plain within the project site has been partially delineated by FEMA, including portions of the Dry Creek Drainage Basin and the Steelhead Creek Drainage Basin. The Steelhead Creek delineations are partial delineations to the extent that they only depict the lower reach of the drainage system, and not the entirety of the defined channels and swales (see **Figure 3.10-2, FEMA 100-Year Floodplains**).

Steelhead Creek is part of a flood control system that surrounds the Natomas Basin located west of the project site in Sutter and Sacramento counties. Steelhead Creek intercepts drainage from the Steelhead Creek Drainage Basin and diverts it around and through the Natomas Basin. The Natomas Basin is historically an area that experienced significant flooding and is now partially protected by a system of levees, canals, and pumps. In the 100-year storm event, the capacity of the current system is exceeded and flows enter the Natomas Basin where Sankey Road crosses Steelhead Creek. The location where the flows occur is referred to as the Sankey Gap. With additional upstream development in Placer County, there is the potential for increased flows into the Natomas Basin at Sankey Gap and into areas of Sutter County east of Steelhead Creek.

Flooding presently occurs in the sump area upstream of the Natomas Cross Canal–Pleasant Grove Canal confluence when the Sacramento River rises above a stage of 37.0 at the Verona Gage, and additional runoff discharged into Pleasant Grove canal by Curry Creek could increase the depth of flooding during this type of event.

3.10.2.3 Regional Flood Control

Flood control throughout the region is afforded by a comprehensive system of dams, levees, overflow weirs, drainage pumping plants, and flood control bypass channels provided by the Sacramento River Flood Control Project (SRFCP) and the American River Flood Control Project (ARFCP) (Placer County 2006). Folsom Dam and Reservoir provide additional flood protection for the Sacramento area as part of the Central Valley Project (CVP). Each of these is discussed in more detail below.

Sacramento Area Flood Control Facilities

After the 1986 flood, the U.S. Army Corps of Engineers (USACE) initiated a comprehensive evaluation of the entire Sacramento River and American River flood control systems. Conclusions from USACE's evaluation downgraded flood protection for the residents and businesses occupying low-lying areas of the Sacramento

area to a 63-year level of flood protection. Flood control facilities for the Sacramento area were once thought to provide flood protection at approximately a 120-year level. As a result of USACE's findings, FEMA reassessed the 100-year floodplain in the Sacramento area and issued new FIRMs. This placed about 110,000 additional acres (44,515.4 hectares) in the revised 100-year floodplain. These revised insurance maps became effective in November 1989 (SAFCA 1994).

In order to address the deficiencies of the flood control systems, USACE recommended bifurcation of the Sacramento and American river problems, clearing the way for the Sacramento Urban Levee Reconstruction Project to repair structurally deficient levees along the Sacramento River, and the American River Watershed Investigation to evaluate the alternatives available to increase the capacity of the American River flood control system and the levees around Natomas. The State of California, through the Department of Water Resources (DWR) and the State Reclamation Board, joined these efforts as the non-federal sponsor (SAFCA 1994).

The Sacramento Area Flood Control Agency (SAFCA) completed the needed repairs to the Sacramento River levees, undertaking levee improvements around North Natomas, and negotiating an interim arrangement with Reclamation in 1994 to re-operate Folsom Dam and Reservoir to provide for at least a 100-year level of flood protection. Thus the improved levee system, in conjunction with interim re-operation of Folsom Dam and Reservoir, is thought to provide the Sacramento metropolitan area with a 100-year level of flood protection (PCWA 2002).

American River

Approximately 820,000 acre-feet (af) of storage capacity exist in American River basin reservoirs upstream from Folsom Reservoir, of which approximately 200,000 af is usable flood storage capacity in the three largest upstream reservoirs (French Meadows, Union Valley, and Hell Hole). These facilities attenuate inflow to Folsom Reservoir, although the extent of this beneficial effect is limited by four factors: (1) these reservoirs were constructed and are operated for water supply and hydropower generation (they do not include dedicated space or physical features for flood control); (2) they control only 14 percent of the drainage area; (3) they are concentrated in the upstream area of the Middle Fork American River; and (4) their benefit is apparent only during the early part of the annual runoff period because, once filled, they are not effective in reducing flood volume and peak flow.

American River Flood Control Project (ARFCP)

The ARFCP was constructed by the USACE in 1958 and is operated and maintained by the State of California. The ARFCP consists of a levee extending along the north side of the American River. This levee originates upstream near Carmichael and extends approximately 7 miles (11.3 kilometers) downstream to a previously existing levee near the Capital City Freeway crossing. Two pumping plants located in low areas of the levee discharge storm drainage into the lower American River. The presence of this levee permits Folsom Reservoir to operate to its maximum design release of 115,000 cubic feet per second (3256.4 cubic meters per second) (SMWA 1996).

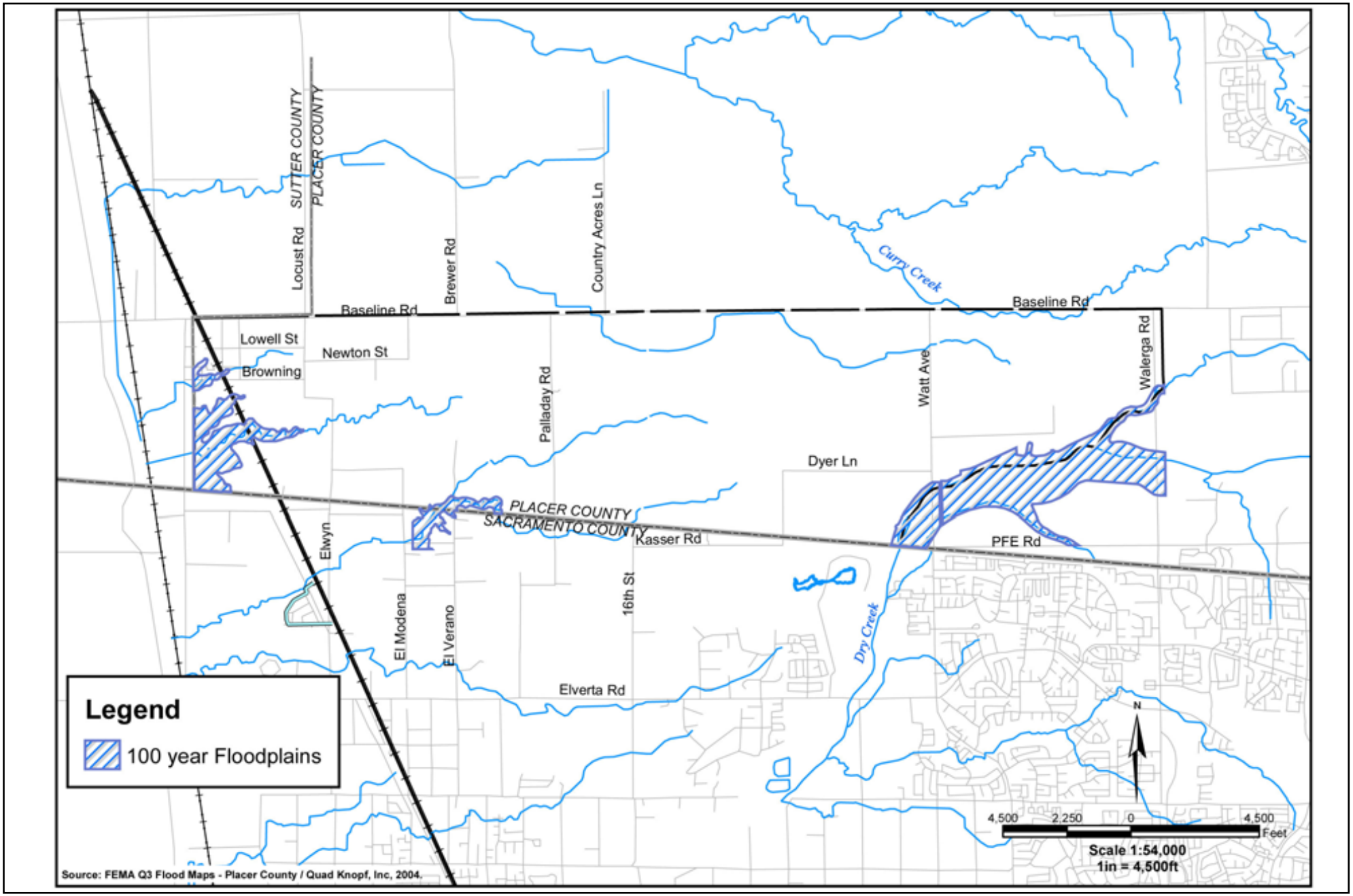

FIGURE **3.10-2**

FEMA 100-Year Floodplains

Folsom Dam and Reservoir

Folsom Dam and Reservoir is a unit of the CVP and is the major flood control project in the American River basin. Folsom Reservoir is the only reservoir operated for flood control on the American River. It provides critical flood protection for approximately 350,000 residents occupying the floodplain in the Sacramento metropolitan area. Folsom Dam regulates runoff from about 1,875 square miles (4856.2 kilometers) of drainage area. Folsom Reservoir has a normal full pool storage capacity of 975,000 af (120,265 hectare-meter [hm]), with a seasonally designated flood control storage space of up to 670,000 af (82,643 hm) which would permit containment of a 100-year flood event (SMWA 1996).

3.10.2.4 Regional Groundwater Hydrology

Groundwater is the water beneath the surface that can be collected with wells, tunnels, or drainage galleries, or that flows naturally to the earth's surface via seeps or springs. Drawdown of groundwater and decrease in water tables are generally the result of water pumped by wells. Groundwater is recharged by rainwater infiltration that reaches the subsurface saturated zone of the soil. Flow rate and quality of the water depends on factors that include the amount, duration of precipitation, soil type, moisture content, and vertical permeability of the unsaturated zone.

The project site is located in the North American subbasin of the Sacramento Valley groundwater basin. The North American subbasin has an area of almost 550 square miles (1424.5 square kilometers) and is bounded on the north by the Bear River, on the south by the Sacramento River, on the west by the Feather River, and on the east by an artificial north-south line extending from the Bear River south to Folsom Lake, passing about 2 miles (3.2 kilometers) east of the City of Lincoln and approximately corresponding to the edge of the Sacramento Valley alluvial basin. The western portion of the subbasin comprises the flood basin of the Bear, Feather, Sacramento, and American Rivers and tributary drainages.

Groundwater in the North American subbasin is produced from two aquifer systems. The upper aquifer system consists of the Quaternary Victor, Fair Oaks, and Laguna Formations and is typically unconfined. The lower aquifer is primarily within the Mehrten Formation of Miocene age and is semi-confined. Average well yields are on the order of 800 gallons per minute (gpm) (3,028 liters per minute [lpm]) (DWR 2003). Total storage capacity in the North American subbasin is estimated at approximately 4.9 million acre-feet (maf), and data suggest that withdrawals of up to 95,000 to 97,000 acre-feet per year (afy) (11,718 to 11,965 hectare-meter per year [hmy]) are within the basin's safe yield. The majority of groundwater production occurs in the northern portion of the subbasin (PCWA 2005).

Urbanization can affect groundwater recharge through reduction of pervious surface, which in turn limits the percolation process. This, combined with drawdown from pumping for agricultural and urban purposes, can lower groundwater levels.

Groundwater Use

The upper aquifer has historically been pumped for agricultural use, while urban water providers have relied on the lower, semi-confined aquifer. The County and other participants in the West Placer

Groundwater Management Plan (see **Subsection 3.10.3, Regulatory Framework**, below) have publically stated their intent to manage their groundwater use consistent with the plan's objectives.

The Placer County Water Agency relies primarily on surface water for potable supply (see related discussion in **Section 3.15, Utilities and Service Systems**), but groundwater provides additional short-term emergency or backup supply during dry years. Existing groundwater use in western Placer County is mostly limited to supplying agricultural demands, with some use by the Cities of Lincoln and Roseville, and some use by private wells.

Groundwater Levels and Groundwater Recharge

The project site currently contains a number of private groundwater wells serving agricultural uses. Groundwater pumping in this area contributes to the total groundwater use. The project site is dominated (in excess of 90 percent) by Type D hydrologic soils, which have a slow infiltration rate with high runoff potential. As such, the project does not qualify as an important groundwater recharge area as defined by Placer County General Plan Policy 6.A.10b (protection of important groundwater recharge areas). The most likely area for recharge to occur is along Dry Creek within the Type A soils area (Placer County 2006).

The total acreage within the project site committed to irrigated agricultural uses is approximately 950 acres (384 hectares), and the water demand for these agricultural activities is approximately 2,400 afy (296 hmy), assuming 2.5 af per acre (0.31 hm per hectare) annually (Placer County 2006). There are approximately 150 dwelling units within the project site. Assuming 1.5 afy (0.19 hmy) of water demand per unit for rural residential uses, total groundwater usage within the project site, therefore, is approximately 2,650 afy (327 hmy).

3.10.2.5 Water Quality

The quality of surface water within the project site is affected by runoff from undeveloped land, agricultural uses, and scattered residential development. Because of low existing land use intensity, the primary water quality concern is related to organic contamination. Undeveloped land typically produces more suspended solids on a per-acre basis than developed areas, due to urban stabilization of the land by pavement and landscaping (solids in urban runoff, however, are more likely to be higher in mineral and human-made products and may have other contaminants absorbed into them).

As discussed in **Subsection 3.10.3 Regulatory Framework**, each Regional Water Quality Control Board is required to develop and periodically update a water quality control plan (basin plan) that designates beneficial uses for the major water bodies under its jurisdiction. Water quality standards must be adopted to protect the designated beneficial uses, and for water bodies that are impaired (affected by the presence of pollutants or contaminants), total maximum daily load (TMDL) programs are developed to limit pollutant input and ensure a return to standards. To identify water bodies for which TMDLs may be needed, each Regional Water Quality Control Board (RWQCB) maintains a Section 303(d) list of impaired water bodies. The Section 303(d) lists are periodically reviewed and updated so they reflect prevailing water quality conditions.

Table 3.10-1 shows the currently designated beneficial uses and listed impairments for water bodies in the project region. The U.S. EPA approved California's 2008-2010 Section 303(d) list of impaired waters requiring TMDLs, including this list, on November 12, 2010.

Table 3.10-1
Designated Beneficial Uses and Listed Water Quality Impairments in Project Area

Water Body	Beneficial Uses	Listed Impairments
Curry Creek	None designated[1]	Placer and Sutter Counties: pyrethoids (urban runoff/storm sewers)
Pleasant Grove Canal	None designated[1]	None identified
Natomas Cross Canal	None designated[1]	Sutter County: mercury (resource extraction)
Sacramento River		
Below Chico	Irrigation, stock watering, water contact recreation, canoeing and rafting, warm freshwater habitat, cold freshwater habitat, coldwater migration, warmwater spawning, wildlife habitat	Knights Landing to Delta reach: mercury (resource extraction), unknown toxicity (source unknown), chlordane (agriculture), DDT (agriculture), dieldrin (agriculture), Polychlorinated biphenyls (PCBs) (source unknown)
Colusa Basin Drain to I Street Bridge (Sacramento)	Municipal and domestic supply, irrigation, water contact recreation, canoeing and rafting, other noncontact recreation, warm freshwater habitat, cold freshwater habitat, warmwater spawning, coldwater spawning, wildlife habitat, navigation	
Sacramento – San Joaquin Delta	Municipal and domestic supply, irrigation, stock watering, industry (process supply, service supply), water contact recreation, other noncontact recreation, warm and cold freshwater habitat, warmwater migration, coldwater migration, warmwater spawning, wildlife habitat, navigation	Northern portion: chlordane (agriculture), chlorpyrifos (agriculture, urban runoff/storm sewers), DDT (agriculture), diazinon (agriculture, urban runoff/storm sewers), dieldrin (agriculture), exotic species (source unknown), Group A pesticides (agriculture), mercury (resource extraction), PCBs (source unknown), unknown toxicity (source unknown) Central portion: chlorpyrifos (agriculture, urban runoff/storm sewers), DDT (agriculture), diazinon (agriculture, urban runoff/storm sewers), invasive species (source unknown), Group A pesticides (agriculture), mercury (resource extraction), unknown toxicity (source unknown) Export area: chlorpyrifos (agriculture, urban runoff/storm sewers), DDT (agriculture), diazinon (agriculture, urban runoff/storm sewers), electrical conductivity (agriculture), invasive species (source unknown), Group A pesticides (agriculture), mercury (resource extraction), unknown toxicity (source unknown)

Water Body	Beneficial Uses	Listed Impairments
Sacramento Valley groundwater	Municipal and domestic supply, agricultural supply (irrigation and stock watering), industry (process supply, service supply), unless specifically designated otherwise by the RWQCB	None identified

Sources: Central Valley RWQCB 2006, 2009a

[1] *The Central Valley RWQCB will evaluate the beneficial uses of these water bodies on a case-by-case basis. Water bodies that do not have beneficial uses designated are assigned the designation of municipal and domestic supply in accordance with the provisions of State Water Board Resolution No. 88-63. Exceptions listed in Resolution No. 88-63 may apply to these water bodies.*

3.10.3 REGULATORY FRAMEWORK – APPLICABLE LAWS, REGULATIONS, PLANS, AND POLICIES

3.10.3.1 Federal Regulations

Clean Water Act

The Clean Water Act (CWA) (33 USC 1251 et seq.) is the principal federal law protecting the quality and integrity of the nation's surface waters. The CWA offers a range of mechanisms to reduce pollutant input to waterways, manage polluted runoff, and finance municipal wastewater treatment facilities. Permit review serves as the CWA's principal regulatory tool; CWA regulation operates on the premise that discharges to jurisdictional waters are unlawful unless authorized by a permit. The following CWA sections are particularly relevant to the proposed project.

- Section 303 – water quality standards and implementation plans
- Section 401 – State Water Quality Certification or waiver
- Section 402 – National Pollutant Discharge Elimination System (NDPES)
- Section 404 – Discharge of dredged or fill materials into waters of the U.S.

CWA Section 404 is administered by the USACE, but the federal government delegates implementation and enforcement authority for Sections 303 and 401–402 to the individual states. In California, they are the responsibility of the State Water Resources Control Board (SWRCB), which in turn delegates authority to the individual Regional Water Quality Control Boards (RWQCBs). The following paragraphs discuss Section 404 in more detail; additional information on Sections 401–402 and 303 is provided under **Subsection 3.10.3.2, State Regulations**, since these sections are administered by state agencies.

CWA Section 404 regulates the discharge (placement) of dredged and fill materials into waters of the United States. Project proponents must obtain a permit from the USACE for any such discharge before proceeding with the proposed activity. This requires the preparation of a delineation of jurisdictional waters of the United States consistent with USACE protocols, in order to define the boundaries of the jurisdictional waters potentially affected by the project.

Jurisdictional waters include areas within the ordinary high water mark of a stream, including non-perennial streams that have a defined bed and bank, as well as any stream channel that conveys natural runoff, even if

it has been realigned. They also include seasonal and perennial wetlands, including coastal wetlands. Wetlands are defined for regulatory purposes as areas "inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3, 40 CFR 230.3).

Section 404 permits may be issued only for the "least environmentally damaging practicable alternative" (LEDPA). That is, authorization of a proposed discharge is prohibited if there is a practicable alternative that would have less adverse impacts on wetlands and other waters and lacks other significant adverse consequences. Applicants for a Section 404 permit must also obtain certification from the state that the activity will not adversely affect water quality, as required by CWA Section 401.

Safe Drinking Water Act

The Safe Drinking Water Act of 1974, amended in 1986 and again in 1996, is the cornerstone federal law protecting drinking water quality. It gives the U.S. Environmental Protection Agency (USEPA) authority to establish drinking water standards and to oversee the water providers (cities, counties, water districts, and agencies) who implement those standards, and also includes provisions for the protection of surface waters and wetlands in support of drinking water quality.

In California, the USEPA delegates some of its Safe Drinking Water Act implementation authority to the California Department of Public Health's Division of Drinking Water and Environmental Management (DPH), which administers a wide range of regulatory programs relevant to potable water supply quality and safety.

Floodplain Management

The National Flood Insurance Act and the Flood Disaster Protection Act were passed in response to the rising cost of disaster relief, in 1968 and 1973 respectively (42 USC 4001 et seq.). Together, these acts reduce the need for large publicly funded flood control structures and disaster relief by restricting development on floodplains. FEMA administers the National Flood Insurance Program (NFIP) and issues flood insurance rate maps (FIRMs) delineating flood hazard zones for the areas participating in the program.

Executive Order 11988 (Floodplain Management), issued in 1977, addresses floodplain issues related to public safety, conservation, and economics. It generally requires federal agencies constructing, permitting, or funding projects to avoid incompatible floodplain development, be consistent with the standards and criteria of the NFIP, and restore and preserve natural and beneficial floodplain values.

3.10.3.2 State Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (Cal. Water Code, Division 7) established the SWRCB; divided the state into nine regions, each overseen by a RWQCB; and gave the SWRCB and RWQCBs statutory authority to regulate water quality. Originally passed in 1969, the Porter-Cologne Act was amended in 1972 to extend the federal CWA authority to the SWRCB and RWQCBs (see **Clean Water Act** above). The SWRCB is the primary state agency responsible for protecting the quality of the

state's surface and groundwater supplies, but much of the daily implementation of water quality regulations is carried out by the nine RWQCBs. The following paragraphs summarize their principal responsibilities. The project area is within Region 5 and is under the jurisdiction of the Central Valley RWQCB.

Basin Plans and Water Quality Standards

The Porter-Cologne Act provides for the development and periodic review of water quality control plans (basin plans) that designate beneficial uses for the state's principal water bodies that may be protected against quality degradation. Each RWQCB prepares a basin plan for the waters under its jurisdiction in order to protect and enhance existing and potential beneficial uses. CWA Section 303 requires the states to adopt water quality standards for water bodies and have those standards approved by the U.S. Environmental Protection Agency (EPA). Water quality standards consist of designated beneficial uses (e.g., wildlife habitat, agricultural supply, fishing, etc.) for a particular water body, along with water quality criteria necessary to support those uses. Specific objectives are provided for the larger water bodies within the region as well as general objectives for surface and groundwater. Basin plans are primarily implemented by using the CWA Section 402 National Pollutant Discharge Elimination System (NPDES) permitting system to regulate waste discharges so that water quality objectives are met.

Water bodies that fail to meet water quality standards are considered impaired and, under CWA Section 303(d), are placed on a list of impaired waters for which a TMDL program must be developed to control input of the impairing pollutant(s). A TMDL is an estimate of the total load of pollutants from point, non-point, and natural sources that a water body may receive without exceeding applicable water quality standards. Once established, the TMDL is allocated among current and future pollutant sources to the water body. Contributions toward the TMDL limit are controlled through the issuance of waste discharge requirements under CWA Section 402.

Water Quality Certification

CWA Section 401 requires all applicants for other CWA permitting to meet requirements such that the RWQCB with jurisdiction can certify that the proposed activity will comply with specific sections of the CWA and will not adversely affect water quality. This is accomplished by implementing effluent limitations ("waste discharge requirements" or "WDRs") and establishing a monitoring program to ensure that the limitations are met.

NPDES Program

Amendments to the CWA in 1972 created the National Pollutant Discharge Elimination System (NPDES) and rendered point-source discharge of pollutants to waters of the United States unlawful unless authorized under an NPDES permit. Further amendments in 1987 added Section 402(p), which establishes a framework for regulating municipal and industrial storm water discharges under the NPDES Program. The NPDES program provides for general permits that cover a number of similar or related activities, as well as individual permits covering a single project or activity. Each permit includes WDRs limiting the concentration of specific contaminants likely to be contained in the permitted discharge.

The SWRCB has elected to adopt a single statewide General Permit that applies to all storm water discharges associated with construction activity, except those on Tribal Lands, those in the Lake Tahoe Hydrologic Unit, and those from activities performed by the California Department of Transportation (Caltrans). The Construction General Permit requires all dischargers where construction activity disturbs 1 acre (0.4 hectare) or more to develop and implement a Storm Water Pollution Prevention Plan (SWPPP) that specifies Best Management Practices (BMPs) to prevent construction pollutants from contacting storm water and control off-site delivery of sediment and other construction-related pollutants, eliminate or reduce non-storm water discharges to storm sewer systems and other jurisdictional waters, and inspect and monitor the success of all BMPs.

Effective July 1, 2010, all dischargers are required to obtain coverage under the Construction General Permit Order 2009-0009-DWQ adopted on September 2, 2009. The new Construction General Permit includes augmented requirements for the SWPPP, including a visual monitoring program, a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs, and a sediment monitoring plan if the site discharges directly to a water body that is 303(d)–listed for sediment.

In addition, all new undertakings that are over 1 acre (0.4 hectare) in size and that are not already covered by the current stormwater permit must identify the project as a Risk Level 1, 2, or 3 project, based on the project's potential to impact waters of the US, and the sensitivity of the potentially affected waters. Risk Level 2 and 3 projects must prepare a Rain Event Action Plan (REAP) applicable to every event where there is a forecast of 50 percent or greater probability of measurable precipitation (0.01 inch or 0.02 centimeter) or more).

Under the new permit, existing and new projects will also have to comply with post-construction water balance requirements that become applicable in September 2012. The previous Construction General Permit (99-08-DWQ) required the SWPPP to include a description of all post-construction BMPs on a site and a maintenance schedule. The new Construction General Permit requires dischargers to replicate the pre-project runoff water balance for the smallest storms up to the 85th percentile storm event, or the smallest storm event that generates runoff, whichever is larger. The permit emphasizes runoff reduction through on-site storm water reuse, interception, evapotranspiration and infiltration using a combination of non-structural controls and conservation design measures (e.g., downspout disconnection, soil quality preservation/enhancement, interceptor trees). The new Construction General Permit also requires dischargers to maintain pre-development drainage densities and concentration times in order to protect channels, and encourages dischargers to implement setbacks to reduce channel slope and velocity changes that can lead to aquatic habitat degradation.

Senate Bill 1938

Senate Bill (SB) 1938 (Cal. Water Code Chapter 603), signed into law in 2002, requires public agencies seeking state funding for groundwater projects to develop and implement a groundwater management plan. SB 1938 is intended to ensure planning for the state's larger groundwater basins as well as those not specifically discussed in the California Department of Water Resources' official summary, Bulletin 118 (*California's Groundwater*).

Required components of the groundwater management plan include an inventory of water supplies and uses in the region, Basin Management Objectives (BMOs) to protect and enhance the groundwater basin, a plan to involve other local agencies and stakeholders in cooperative planning, along with a public information plan, and monitoring protocols to ensure that BMOs are being met.

3.10.3.3 Local Plans, Policies, and Ordinances

Placer County Flood Control and Water Conservation District

The Placer County Flood Control and Water District (PCFCD) was formed in 1984. Its primary purpose is to protect lives and property from flood effects through comprehensive, coordinated flood prevention planning. In support of this goal, the PCFCD implements regional flood control projects, conducts hydrologic and hydraulic modeling to better understand County watersheds, and develops and implements master plans for County watersheds. It also provides information and technical support relevant to flood control to the County, cities, and developers. The PCFCD operates and maintains the county flood warning system, reviews proposed development projects for compliance with PCFCD standards, and provides technical support for Office of Emergency Services activities.

The 1994 PCFCD Stormwater Management Manual (SWMM) contains policy, guidance, and specific standards for evaluating hydrologic and hydraulic impacts of new development in the context of regional stormwater issues. When stormwater detention or retention facilities are used to mitigate downstream increases in stormwater flows due to development, the SWMM requires that post-project peak flows be reduced by comparison with pre-project peak flows. The objective flow is determined by estimating the predevelopment peak flow rate and subtracting 10 percent of the difference between the estimated pre- and post-development peak flow rates. The objective flow shall never be less than 90 percent of the estimated predevelopment flow.

Western Placer Groundwater Management Plan

The 2007 Western Placer Groundwater Management Plan (WPCGMP) was developed by the Cities of Roseville and Lincoln in partnership with the Placer County Water Agency and the California American Water Company in response to Senate Bill (SB) 1938 requirements. The goal of the plan is to "maintain the quality and ensure the long term availability of groundwater to meet backup, emergency, and peak demands without adversely affecting other groundwater uses within the WPCGMP area."

Placer County Municipal Code

The following relevant regulations have been adopted by the Placer County Board of Supervisors to regulate grading and related runoff in Placer County.

Grading and Erosion Prevention Ordinance

Section 15.48.020 Purpose. The ordinance codified in this article is enacted for the purpose of regulating grading on property within the unincorporated area 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, any specific plans adopted thereto and applicable Placer County ordinances including the Zoning Ordinance, Flood Damage Prevention Ordinance, (Article 15.52) Environmental Review Ordinance (Chapter 18 Placer County Code) and applicable chapters of the California Building Code. In the event of conflict between applicable chapters and this article, the most restrictive shall prevail.

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 15.48.090 Levee work. No person shall excavate or remove any material from or otherwise alter any levee required for river, creek, bay, or local drainage control channel, without prior approval of the local governmental agency responsible for the maintenance of the levee.

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 Director of Public Works.

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, and shall be subject to the approval of the Director of Public Works.

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 15.48.610 Terrace drainage. Terraces at least 8 feet (2.4 meters) in width shall be established at not more than 25 feet (7.6 meters) in height intervals for all cut and fill slopes exceeding 30 feet (9.1 meters) in height. Where only one terrace is required, it shall be at approximately mid-height. Suitable access shall be provided to permit proper cleaning and maintenance of terraces and terrace drains. Swales or ditches on terraces shall have a minimum depth of 1 foot, a minimum longitudinal grade of 4 percent, and a maximum longitudinal grade of 12 percent. Down-drains or drainage outlets shall be provided at approximately 300-foot intervals along the drainage terrace. Down-drains and drainage outlets shall be of approved materials and of adequate capacity to convey the intercepted waters to the point of disposal. If the drainage discharges onto natural ground, adequate erosion protection shall be provided.

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.

B. Grading operations during the rainy season shall provide erosion and sediment control measures except upon a clear demonstration, to the satisfaction of the Director of Public Works, that at no stage of the work will there be any substantial risk of increased sediment discharge from the site.

C. Should grading be permitted during the rainy season, the smallest practicable area of erodible land shall be exposed at any one time during grading operations and the time of exposure shall be minimized.

D. Natural features including vegetation, terrain, watercourses, and similar resources shall be preserved wherever possible. Limits 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 long-term maintenance of permanent erosion and sediment control structures and vegetation.

G. No topsoil shall be removed from the site unless otherwise directed or approved by the director of public works. 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 Director of Public Works.

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.

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.

Dry Creek Watershed Drainage Improvement Zone

Section 15.32.010 Purpose.

A. New development, and the expansion of existing development, within the watershed of Dry Creek, as shown on Exhibit A attached to the ordinance codified in this article and incorporated herein by reference, imposes a burden on the creeks and drainage infrastructure within the watershed by adding additional impervious surface and accelerating runoff, thereby adding more runoff and

increasing discharge rates. This creates a need for new drainage infrastructure and improvements. Such burdens may vary depending upon the type of land use and location within the watershed.

B. Analysis of the land use expected at buildout of the community plans within the Dry Creek watershed makes it possible to estimate the amount of additional runoff generated by different types of land use, to analyze the drainage infrastructure or facilities necessary to mitigate that runoff, and to determine which land uses will require various portions of such infrastructure. It is, therefore, possible to charge a fee, based on land use and location, which equitably distributes the burden of providing drainage infrastructure or facilities within the Dry Creek watershed among those who will create the need for them. It is further the purpose of this article to assist with the implementation of the affected community plans by ensuring that adequate public facilities are financed and provided to serve the community.

C. This article establishes a drainage improvement zone for the Dry Creek watershed area. It requires the payment of specified fees and annual assessments as a condition of new development and the expansion of existing development within the watershed area for the installation and maintenance of roadway drainage and stormwater drainage improvements.

D. The intent of this program is to supplement existing county policies of requiring on-site and off-site drainage improvements, where appropriate, to accommodate increased runoff resulting from new development and the expansion of existing development.

E. The fee requirements and annual assessments established herein shall be applicable to all new development and the expansion of existing development in the unincorporated area of Placer County located within the boundaries of the various tributary areas identified on said Exhibit A. (Prior code Section 4.2000)

Flood Damage Prevention Ordinance

The County's Flood Damage Prevention Ordinance implements floodplain management in the County. The ordinance limits construction in areas within the 100-year flood zone to prevent damage to structures and to limit the effect of development on flood elevations.

Placer County General Plan Goals and Policies

The Placer County General Plan defines certain policies pertaining to drainage and flood control.

Section 3 – Transportation and Circulation

Policy 3.A.3. The County shall require that roadway rights-of-way be wide enough to accommodate the travel lanes needed to carry long-range forecasted traffic volumes (beyond 2010), as well as any planned bikeways and required drainage, utilities, landscaping and suitable separations.

Section 4 – Public Facilities and Services

Policy 4.A.1. Where new development requires the construction of new public facilities, the new development shall fund its fair share of the construction. The County shall require dedication of land within newly developing areas for public facilities, where necessary.

Policy 4.E.1. The County shall encourage the use of natural stormwater drainage systems to preserve and enhance natural features.

Policy 4.E.2. The County shall support efforts to acquire land or obtain easements for drainage and other public uses of floodplains where it is desirable to maintain drainage channels in a natural state.

Policy 4.E.3. The County shall consider using stormwater of adequate quality to replenish local groundwater basins, restore wetlands and riparian habitat, and irrigate agricultural lands.

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.

Policy 4.E.5. The County shall continue to implement and enforce its Grading Ordinance and Flood Damage Prevention Ordinance.

Policy 4.E.6. The County shall continue to support the programs and policies of the watershed flood control plans developed by the Flood Control and Water Conservation District.

Policy 4.E.8. The County shall consider recreational opportunities and aesthetics in the design of stormwater ponds and conveyance facilities.

Policy 4.E.9. The County shall encourage good soil conservation practices in agricultural and urban areas and carefully examine the impact of proposed urban developments with regard to drainage courses.

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.

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.

Section 6 – Natural Resources

Policy 6.A.1. The County shall require the provision of sensitive habitat buffers which shall, at a minimum, be measured as follows: one hundred feet (30.5 meters) from the centerline of perennial streams, 50 feet (15.2 meters) from centerline of intermittent streams, and 50 feet (15.2 meters) from the edge of sensitive habitats to be protected including riparian zones, wetlands, old growth woodlands, and the habitat of rare, threatened or endangered species (see discussion of sensitive habitat buffers in Part I of this Policy Document). Based on more detailed information supplied as a part of the review for a specific project, the County may determine that such setbacks are not applicable in a particular instance or should be modified based on the new information provided. The County may, however, allow exceptions, such as in the following cases:

a. Reasonable use of the property would otherwise be denied;

b. The location is necessary to avoid or mitigate hazards to the public;

c. The location is necessary for the repair of roads, bridges, trails, or similar infrastructure; or

d. The location is necessary for the construction of new roads, bridges, trails, or similar infrastructure where the County determines there is no feasible alternative and the project has minimized environmental impacts through project design and infrastructure placement.

Policy 6.A.2. The County shall require all development in the 100-year floodplain to comply with the provisions of the Placer County Flood Damage Prevention Ordinance.

Policy 6.A.3. The County shall require development projects proposing to encroach into a creek corridor or creek setback to do one or more of the following, in descending order of desirability:

a. Avoid the disturbance of riparian vegetation;

b. Replace riparian vegetation (on-site, in-kind);

c. Restore another section of creek (in-kind); and/or

d. Pay a mitigation fee for restoration elsewhere (e.g., wetland mitigation banking program).

Policy 6.A.6. The County shall require that natural watercourses are integrated into new development in such a way that they are accessible to the public and provide a positive visual element.

3.10.4 SIGNIFICANCE THRESHOLDS AND ANALYSIS METHODOLOGY

3.10.4.1 Significance Thresholds

Council on Environmental Quality (CEQ) guidance requires an evaluation of the effect of proposed actions on the human environment. The USACE has determined that the Proposed Action or its alternatives would result in significant adverse effects related to hydrology and water quality if the Proposed Action or an alternative would:

- substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- place housing or structures within a 100-year floodplain or place structures that would impede or redirect flood flows;
- 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;
- during and post construction, create substantial additional sources of polluted runoff that could affect water quality;
- cause an exceedance of applicable effluent discharge standards;
- interfere substantially with groundwater recharge or substantially deplete groundwater supplies such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level; or
- substantially increase runoff such that the geomorphology of creeks is altered.

3.10.4.2 Analysis Methodology

Hydrology and water quality effects of the Proposed Action and alternatives are evaluated in this EIS based on professional judgment of the EIS preparers in consideration of the applicable regulatory standards and the prevailing standard of care.

Analysis of effects of the Proposed Action related to surface hydrology, flooding, and water quality is based on the Master Project Drainage Study prepared for the PVSP (Civil Engineering Solutions 2005).

Impacts on groundwater reserves are evaluated based on water demand analyses in the County's PVSP EIR (Placer County 2006).

Impacts of alternatives on surface water hydrology and flooding are evaluated qualitatively based on the increase in impervious surfaces (as reflected by the development footprint) under the Proposed Action and each alternative. **Table 3.10-2** presents the development footprint under each alternative.

Table 3.10-2
Development Footprint

Alternative	Development Footprint (in acres)	Percent greater or less than Proposed Action
Proposed Action	4,521	--
No Action	3,297	- 27%
Alternative 1	4,504	- 0.5%
Alternative 2	4,516	- 0.1%
Alternative 3	4,473	- 1%
Alternative 4	4,519	- 0.05%
Alternative 5	4,502	- 0.5%

3.10.5 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

Impact HYDRO-1 Effects related to Off-site Flood Hazards

No Action Alt. The No Action Alternative would have the potential to increase peak flood flows over the on-site reaches of Curry, Dry, and Steelhead Creeks. Although the potential drainage area anticipated to be developed within the project site would be small in comparison to the 26,000-square-mile (67339.7 square kilometers) drainage basin of the Sacramento River, the increase in the volume of runoff as a result of urbanization and roadway improvements would be substantial in relation to existing runoff volumes. Given the existing potential for flooding in some of the downstream areas, the increase in runoff associated with urbanization could contribute to downstream (off-site) flooding. This would be a **significant** effect. **PVSP EIR Mitigation Measure 4.3.2-1** would reduce this effect to a **less than significant** level.

The project site is mostly undeveloped, other than the large lot rural development areas located in the western portion of the site. Development under the No Action Alternative would modify existing topography and drainage on the project site through grading activities to create pads for construction of residences and commercial development and to construct roadways. Assuming the use of conventional hardscape, build out under the No Action Alternative would add approximately 3,297 acres (1,334.2 hectares) of impervious surfaces to the site, with approximately 1,933 acres (782.3 hectares) preserved as open space. The No Action Alternative would potentially increase peak flood flows and contribute to downstream flooding. This would be a **significant** effect.

PVSP EIR Mitigation Measure 4.3.2-1 would address the effect of the No Action Alternative related to flooding. This mitigation measure requires that individual developments within the project site reduce 2-year, 10-year, and 100-year storm flows by installing retention/detention facilities. The USACE assumes that Placer County would impose the same mitigation measure on the No Action Alternative to address this effect.

With respect to the Proposed Action, the County concluded that this mitigation measure would reduce the risk from flooding to a less than significant level. The USACE finds that the mitigation measure would mitigate the effect of the No Action Alternative to a **less than significant** level.

Proposed Action (Base Plan and Blueprint Scenarios)

The increase in runoff associated with urbanization of the project site under the Proposed Action could contribute to downstream (off-site) flooding. This would be a **significant** effect. **PVSP EIR Mitigation Measure 4.3.2-1** would reduce this effect to a **less than significant** level.

Assuming the use of conventional hardscape, build out under the Proposed Action would add approximately 4,521 acres (1,829.6 hectares) of impervious surface to the site, with approximately 709 acres (286.9 hectares) preserved as open space. This increase in impervious surface would potentially increase peak storm flows.

A site-specific model was created for the project as part of the drainage analysis included in the Master Project Drainage Study (Civil Engineering Solutions 2005). The model included the project site and contributing watersheds and used pre-project, post-project unmitigated, and post-project mitigated conditions for the 2-year, 10-year, and 100-year events. Results of the modeling showed that downstream flooding impact would result if the additional flows were not detained on site. This impact would be a **significant** effect.

To address this impact and to satisfy the Placer County Flood Control District (PCFCD) Storm Water Management Manual (SWMM) requirement to avoid increasing the water surface elevation off-site, the Master Project Drainage Study recommended the use of several types of facilities to provide attenuation to reduce peak-flow discharges from the project site. The main method of providing attenuation would be through the use of existing swales and excavated flood control channel detention facilities upstream of regulating culvert facilities. Other types of proposed attenuation facilities include excavated lake areas, constructed wetlands, and water quality basin and channels. The Drainage Study analyzed various detention facilities for their ability to mitigate the project's impact and provided specific recommendations for each of the three major creeks on the project site.

For the Curry Creek watershed, the Proposed Action would mitigate 100-year event peak flows with an in-line dual-purpose detention/retention weir structure. A slide gate structure would be added to the weir structure such that the required impoundment volume could be retained within the project as needed. The weir structure would be designed such that retention could occur, while maintaining capacity to pass peak flows. However, the normal (non-retention) operation of the control structure would be open, or if applicable, whatever configuration is necessary for detention.

For the 100-year event at Dry Creek, modeling indicated that peak flow rates would be higher if the Proposed Action were to provide detention basins on-site. The Sacramento

County Department of Water Resources indicated that the increased water surface elevations due to development in Placer Vineyards would be negligible (Placer County 2006). Therefore, detention is not recommended at Dry Creek for the Proposed Action. The Sacramento County Department of Water Resources has, however, requested that the Proposed Action "pay a fair share volume mitigation fee as listed on the Fee Schedule for Zone 11C, Sheds Flowing to NEMDC Tributaries, updated annually" (Placer County 2006).

A variety of on-site attenuation facilities are proposed to be constructed in the tributaries to Steelhead Creek. The results of the 100-year comparison analysis for Steelhead Creek indicate that the proposed detention adequately mitigates the peak discharge rates to less than the pre-project amounts. In the 200- year analysis, the pre-project and post-project mitigated peak flows are virtually identical (Civil Engineering Solutions 2005).

Implementation of **PVSP EIR Mitigation Measure 4.3.2-1** would require that individual developments within the Proposed Action reduce 2-year, 10-year, and 100-year storm flows by installing retention/detention facilities. This mitigation measure was adopted by Placer County at the time of project approval and will be enforced by the County. With these floodplain storage features in place, peak 2-year, 10-year, and 100-year storm flows on the project site, and peak flows delivered off site in these events, would be lower than under existing conditions. The water surface elevation would also be lowered under 100-year flood conditions for most on-site locations. Consequently, the County determined that although the Base Plan and Blueprint scenarios would modify site topography and add impervious surfaces, mitigation measures would reduce adverse effects related to increased peak flow flood risks to a less than significant level (Placer County 2006). The USACE agrees with the conclusion in the PVSP EIR and finds that the effect would be **less than significant** after mitigation.

Alts. 1 through 5

Alternatives 1 through 5 would increase the amount of open space on five parcels within the project site compared to the Proposed Action. However, these alternatives combined would still decrease the amount of open space on the project site by approximately 59 percent compared to the No Action Alternative. As the total amount of development on site and resultant impervious surfaces would be only slightly lower than the Proposed Action (approximately 0.05 to 1 percent lower), these alternatives would also have the potential to increase peak flows within on-site drainages and contribute to off-site flooding. This would be a **significant** effect. Retention/detention facilities would be required to address the impact of this alternative. **PVSP EIR Mitigation Measure 4.3.2-1** would address the effect of Alternatives 1 through 5 related to peak flow flood risk. The USACE assumes that Placer County would impose the same mitigation measure on Alternatives 1 through 5 to address this effect. With the floodplain storage features in place, peak 2-year, 10-year, and 100-year storm flows on the project site, and peak flows delivered off site in these events, would be lower than under existing conditions. The water surface elevation would also be lowered under 100-year flood conditions for most on-site locations. The

USACE finds that the mitigation measure would fully mitigate the effect of Alternatives 1 through 5 (individually or combined). Implementation of **PVSP EIR Mitigation Measure 4.3.2-1** would reduce the effect related to increased peak flow flood risk to a **less than significant** level.

PVSP EIR Mitigation Measure 4.3.2-1: Site-Specific Drainage
(*Applicability - Proposed Action and All Alternatives*)

PVSP EIR Mitigation Measure 4.3.2-1 *requires a site-specific drainage report prepared in conformance with the Placer County Storm Water Management Manual and Placer County Code, retention/detention facilities for the Curry Creek and Steelhead Creek watersheds, and payment of drainage improvement, flood control, and storm water volume mitigation fees. The full text of the mitigation measure is presented in* ***Appendix 3.0****.*

Impact HYDRO-2 Effects on Culvert Capacity

No Action Alt.

Increased flows conveyed to existing culverts could result in overtopping and flooding due to inadequate capacity for urbanized flow-rates and potential clogging from construction debris, sediment, and/or vegetation. Flooding is not limited to 100-year events alone, and often occurs in areas that restrict, prohibit, or obstruct the flow of runoff during lower-frequency rainfalls. Flooding within an area intended for emergency access purposes could result in delayed response to emergencies and limited access. PCFCD policy requires the center 12 feet (3.7 meters) (one lane in each direction) of collector roadways remain unobstructed by runoff during 100-year events and all roadways to remain unobstructed during 10-year events. Culvert sizing for the No Action Alternative has not been completed although it is anticipated that it would be optimized to maximize on-site attenuation, while providing the passage of the 100-year peak flows. Furthermore, the No Action Alternative would leave large portions of the project site that contain wetlands, drainages, and creeks undeveloped. Therefore the runoff generated under this alternative would be substantially less than that generated under the Proposed Action. Nonetheless, increased impervious surfaces would be constructed on the site and potential for localized flooding due to inadequate culvert capacity would exist. Any emergency access limitations, runoff within the travel path of the roadway, and associated potential adverse impacts resulting from flooding and less than adequate culvert capacity would be a potentially **significant** effect.

PVSP EIR Mitigation Measures 4.3.2-2a and **4.3.2-2b**, **4.3.2-3a** through **4.3.2-3f**, and **4.3.2-11a** and **4.3.2-11b** would address the effect of the No Action Alternative related to culvert capacity. These mitigation measures include measures to ensure that roadway and storm drain improvements do not result in reduced culvert capacity. The USACE assumes that Placer County would impose the same mitigation measures on the No Action Alternative to address this effect. With respect to the Proposed Action, the County concluded that these mitigation measures would reduce the risk from localized flooding to a less than significant

level. The USACE finds that the mitigation measures would fully mitigate the effect of the No Action Alternative to a **less than significant** level.

Proposed Action (Base Plan and Blueprint Scenarios)

According to the Master Project Drainage Study, culvert sizing for the project is optimized to maximize on-site attenuation, while providing the passage of the 100-year peak flows. However, emergency access limitations, runoff within the travel path of the roadway, and associated potential adverse impacts resulting from flooding and less than adequate culvert capacity would be a potentially **significant** effect.

However, with implementation of **PVSP EIR Mitigation Measures 4.3.2-2a** and **4.3.2-2b**, **4.3.2-3a** through **4.3.2-3f**, and **4.3.2-11a** and **4.3.2-11b**, which include measures to ensure that roadway and storm drain improvements do not result in reduced culvert capacity, it is unlikely that these improvements would redirect flood flows such that flood hazards are created or exacerbated. These measures were adopted by Placer County at the time of project approval and will be enforced by the County. The PVSP EIR determined that these mitigation measures would reduce the effect on culvert capacity under the Base Plan and Blueprint scenarios to a less than significant level (Placer County 2006). The USACE agrees with the conclusion in the PVSP EIR and finds that the effect would be **less than significant** after mitigation.

Alts. 1 through 5

Alternatives 1 through 5 would increase the amount of open space on five parcels within the project site compared to the Proposed Action under the Base Plan scenario. However, these alternatives combined would still decrease the amount of open space on the project site by approximately 59 percent compared to the No Action Alternative. Similar to the No Action and Proposed Action, flooding of culverts could occur due to inadequate capacity for peak flows or clogging from debris, which would be a potentially **significant** impact. **PVSP EIR Mitigation Measures 4.3.2-2a** and **4.3.2-2b**, **4.3.2-3a** through **4.3.2-3f**, and **4.3.2-11a** and **4.3.2-11b** would address the effect of Alternatives 1 through 5 related to culvert capacity. The USACE assumes that Placer County would impose the same mitigation measures on Alternatives 1 through 5 to address this effect. For the same reasons presented above for the Proposed Action, the USACE finds that the mitigation measures would fully mitigate the effect of Alternatives 1 through 5. **PVSP EIR Mitigation Measures 4.3.2-2a** and **4.3.2-2b**, **4.3.2-3a** through **4.3.2-3f**, and **4.3.2-11a** and **4.3.2-11b** would reduce the effect to culvert capacity to a **less than significant** level.

PVSP Mitigation Measure 4.3.2-2a through
PVSP Mitigation Measure 4.3.2-2b,
PVSP Mitigation Measure 4.3.2-3a through
PVSP Mitigation Measure 4.3.2-3f, and
PVSP Mitigation Measure 4.3.2-11a through
PVSP Mitigation Measure 4.3.2-11b: Design of Culverts
(*Applicability - Proposed Action and All Alternatives*)

PVSP EIR Mitigation Measures 4.3.2-2a-b, 4.3.2-3a-f, *and* ***4.3.2-11a-b*** *include measures to ensure that roadway and storm drain improvements do not result in reduced culvert capacity. The full mitigation measure text is available in* ***Appendix 3.0****.*

Impact HYDRO-3 Effects on Flood Capacity

No Action Alt.

As noted above, the No Action Alternative would leave large portions of the project site that contain wetlands, drainages, and creeks undeveloped. Therefore the runoff generated under this alternative would be substantially less than that generated under the Proposed Action. Nonetheless, increased impervious surfaces would be constructed on the site and potential flooding of natural drainageways could occur due to inadequate capacity to handle the increased flows from urban development. Furthermore, the No Action Alternative would result in no drainage improvements. All old crossings that are left in place to avoid the need for permits would be undersized for the new impervious surfaces. Similarly, a low dam constructed of uncemented rock and broken concrete located across Dry Creek immediately downstream of the Watt Avenue bridge within the FEMA-designated floodplain would also be left in place to avoid DA permits. Left in place, the dam would impede flows, causing runoff backwater and clogging. Therefore, the No Action Alternative would result in a **significant** impact related to the flood capacity of the on-site drainages.

PVSP EIR Mitigation Measures 4.3.2-3a through **4.3.2-3e** would address the effect of the No Action Alternative related to flood capacity. These mitigation measures would prohibit grading or other disturbance within the post-project 100-year floodplain limit and would require a site-specific drainage report that demonstrates compliance with the Placer County SWMM and Placer County Code. The USACE assumes that Placer County would impose these mitigation measures on the No Action Alternative to address this effect. However, as no improvements could be made within drainages under this alternative, USACE finds that the mitigation measures would not fully mitigate the effect of the No Action Alternative and the impact would remain **significant**.

Proposed Action (Base Plan and Blueprint Scenarios)

Existing capacity of the natural drainage courses relies upon open undeveloped areas for shallow flooding and runoff storage. Loss of these existing pervious surfaces due to development would result in the need for additional channel capacity.

A hydraulic evaluation was performed for the 2-, 5-, 10-, 25-, 50-, 100-, 200- and 500-year events. The HEC-RAS summary tables for all events are provided in the Master Project Drainage Study for the pre-project and post-project mitigated events respectively.

The Proposed Action would collect runoff within storm drainage systems that would discharge into channels and retention/detention facilities. These facilities would generally follow or be placed along the natural drainage courses within the project site. Floods would be confined within the channels, generally providing 3 feet (0.9 meter) of 100-year event freeboard to the nearest proposed structures. The channels would be excavated below existing grades and would daylight downstream to natural grades beyond the floodplain boundary. A low flow channel would be constructed throughout the project site to confine the conveyance of year-round nuisance waters.

The low dam located within Dry Creek, along with the pump, intake structure, and pipeline conveying the water, would no longer be required with build out of the Proposed Action. Although removal of the dam is not proposed as part of the Proposed Action, if left in place, the dam would unnecessarily impede flows, causing runoff backwater and clogging.

Although the Master Project Drainage Study proposes a design solution, flooding, and increase of flows within drainage courses would be a potentially **significant** effect.

PVSP EIR Mitigation Measures 4.3.2-3a through **4.3.2-3f** would address this effect. These mitigation measures were adopted by Placer County at the time of project approval and will be enforced by the County. These mitigation measures prohibit grading or other disturbance within the post-project 100-year floodplain limit, require a site-specific drainage report that demonstrates compliance with the Placer County SWMM and Placer County Code, and require removal of the dam from Dry Creek. The County determined that these mitigation measures would reduce the effect on natural drainage capacity under the Base Plan and Blueprint scenarios to a less than significant level (Placer County 2006). The USACE agrees with the conclusion in the PVSP EIR and finds that the effect would be **less than significant** after mitigation.

Alts. 1 through 5

Alternatives 1 through 5 would increase the amount of open space on five parcels within the project site compared to the Proposed Action under the Base Plan scenario. However, these alternatives combined would still decrease the amount of open space on the project site by approximately 59 percent compared to the No Action Alternative. Similar to the No Action Alternative and the Proposed Action, flooding of natural drainageways could occur due to inadequate capacity from additional impervious surfaces, which would be a potentially **significant** impact. **PVSP EIR Mitigation Measures 4.3.2-3a** through **4.3.2-3f** would address the effect of Alternatives 1 through 5 related to flood capacity. The USACE assumes that

Placer County would impose the same mitigation measures on Alternatives 1 through 5 to address this effect. For the same reasons presented above for the Proposed Action, USACE finds that the mitigation measures would fully mitigate the effect of Alternatives 1 through 5. **PVSP EIR Mitigation Measures 4.3.2-3a** through **4.3.2-3f** would reduce the effect to culvert capacity to a **less than significant** level.

PVSP EIR Mitigation Measures 4.3.2-3a through
PVSP EIR Mitigation Measure 4.3.2-3e: Flood Capacity
(Applicability – No Action Alternative)

PVSP EIR Mitigation Measures 4.3.2-3a *through* ***4.3.2-3e*** *would prohibit grading or other disturbance within the post-project 100-year floodplain limit, require a site-specific drainage report that demonstrates compliance with the Placer County SWMM and Placer County Code. The full mitigation measure text is available in* ***Appendix 3.0.***

PVSP EIR Mitigation Measure 4.3.2-3a through
PVSP EIR Mitigation Measures 4.3.2-3f: Flood Capacity
(Applicability – Proposed Action and Alternatives 1 through 5)

PVSP EIR Mitigation Measures 4.3.2-3a *through* ***4.3.2-3f*** *would prohibit grading or other disturbance within the post-project 100-year floodplain limit, require a site-specific drainage report that demonstrates compliance with the Placer County SWMM and Placer County Code, and require removal of the dam from Dry Creek. The full mitigation measure text is available in* ***Appendix 3.0.***

Impact HYDRO-4 Effects from Construction within a Floodplain

No Action Alt., Proposed Action, Alts. 1 through 5

None of the alternatives would impede or redirect flood flows in a hazardous manner, and adequate conveyance capacity will be provided to convey flood flows. This effect would be **less than significant**. Mitigation is not required.

Construction within a floodplain area can be of concern because it has the potential to impede flood conveyance and/or redirect flood flows, and can exacerbate existing flood hazards or create new hazards in areas not presently subject to flooding.

As discussed in **Affected Environment** above and shown in **Figure 3.10-2**, portions of the Dry Creek Drainage Basin and the lower reaches of the Steelhead Creek Drainage are within the FEMA 100-year floodplain on the project site. Both the Dry Creek and Steelhead Creek corridors would be protected as open space as part of all of the alternatives and County policies and ordinances independently prohibit construction within the FEMA 100-year floodplain. As a result, no major structures would be placed within the floodplain, but minor, localized construction could take place within the open space corridors, potentially including areas within the FEMA 100-year floodplain, to accommodate improvements such as drainage culverts, weir structures, utility lines, and new roadways.

All of the alternatives are unlikely to redirect flood flows such that flood hazards are created

or exacerbated, although the project as a whole may slightly modify the boundaries of the 10- and 100-year floodplains. Prior to issuance of approval of improvement plans for any area which the then current FEMA Flood Insurance Rate Maps show within a 100-year flood plain (Zone A), the Applicants shall submit a Letter of Map Revision for FEMA review once the County and PCFCD have reviewed and approved the hydraulic modeling conducted for the project. Because flood flows would not be impeded or redirected in a hazardous manner, and adequate conveyance capacity will be provided, this effect would be **less than significant**. Mitigation is not required.

Impact HYDRO-5 Exposure to Flood Hazards related to Dam or Levee Failure

No Action Alt., Proposed Action, Alts. 1 through 5

The project site is within an area that could experience flooding in the event that Folsom Lake Dikes 4, 5, and 6 fail. The National Inventory of Dams considers the Folsom Lake Dikes high hazard structures, reflecting a potential for loss of human life in the event of a failure. According to the Folsom Dam Safety and Flood Damage Reduction Joint Federal Project, Dikes 4, 5, and 6 could fail due to overtopping during a major storm event. However, the likelihood of reservoir inflows that could cause overtopping is extremely low, and would be reduced upon completion of the new Folsom Dam spillway that is currently under construction and scheduled for completion by 2015. Therefore, the risk of damage to property and loss of human life associated with inundation of the Folsom Dam would be low and the impact would be **less than significant**. Mitigation is not required.

Impact HYDRO-6 Water Quality Effects during Construction

No Action Alt., Proposed Action, Alts. 1 through 5

With compliance with NPDES requirements, the effects of any of the alternatives on water quality during construction would **be less than significant**.

Construction under all of the alternatives would entail ground disturbance, with the potential to result in accelerated erosion and delivery of increased sediment loads to surface waters in the project area. Construction and site finishing would also use a variety of substances—such as vehicle fuels and lubricants, paints, paving media, adhesives, paints, fertilizers, etc.—with the potential to degrade water quality in the event they are spilled or released. However, a variety of mechanisms and policies are in place to require erosion and sediment control measures and appropriate handling of the various substances used in construction. The most important and enforceable protections are afforded through the NPDES permitting system. Because each construction phase would likely exceed the 1-acre (0.4 hectare) trigger threshold, development under any of the alternatives would be required to obtain coverage under the current Construction General Permit, which requires implementation of a SWPPP stipulating BMPs to prevent construction pollutants from contacting storm water, elimination or reduction of non-storm water discharges to storm

sewer systems and other jurisdictional waters, and inspection and monitoring to ensure that BMPs are functioning properly.

Effective July 1, 2010, all dischargers must obtain coverage under the Construction General Permit Order 2009-0009-DWQ adopted on September 2, 2009, which is substantially more stringent than previous requirements. With NPDES compliance in place, the effects on water quality as a result of construction under all of the alternatives would **be less than significant**. Mitigation is not required.

Impact HYDRO-7 Water Quality Effects from Project Occupancy and Operation

No Action Alt., Proposed Action, Alts. 1 through 5

With mitigation, urban runoff from the project site would have a **less than significant** effect on the quality of surface waters.

Development under all of the alternatives would convert currently undeveloped lands to urban/suburban uses, including residential areas, commercial areas, roadways, parking areas, and developed recreational areas. The introduction of extensive impervious surfaces would have the potential to increase net runoff from the site, and because of the introduction of developed uses, would also have the potential to decrease the quality of runoff waters. Runoff waters from the project site would be typical of developed urban areas, where a variety of activities contribute pollutants such as petroleum products, coliform bacteria, nitrogen, phosphorus, heavy metals, pesticides, herbicides, and byproducts of pavement wear. If this input were to be uncontrolled, the long-term potential for degradation of receiving waters would be substantial.

However, as discussed above, the current NPDES Construction General Permit includes a requirement for post-construction water quality control measures. Consistent with NPDES requirements and the County's Stormwater Management Plan, implementation of BMPs would be required to reduce impervious surface and ensure runoff quality. However, the Placer Vineyards Specific Plan does not specify LID measures that would reduce water quality effects. The effect on water quality would be potentially **significant**.

PVSP EIR Mitigation Measure 4.3.4-1 requires that the developers identify methods and designs to reduce storm water runoff and protect surface water quality. This mitigation measure was adopted by Placer County at the time of project approval and will be enforced on the Proposed Action by the County. The USACE assumes that Placer County would impose the same mitigation measure on the No Action Alternative and Alternatives 1 through 5 to address this effect. **PVSP EIR Mitigation Measure 4.3.4-1** would ensure that all development incorporates adequate measures to prevent urban runoff from the project site from substantially degrading the quality of surface waters. The Placer Vineyards Specific Plan EIR determined that this mitigation measure would reduce the effect on water quality under the Base Plan and Blueprint scenarios to a less than significant level (Placer County

2006). The USACE agrees with the conclusion in the Placer Vineyards Specific Plan EIR and finds that the effect would be reduced to **less than significant** after mitigation if mitigation is applied to any of the alternatives.

PVSP EIR Mitigation Measure 4.3.4-1: Stormwater Management Standards (*Applicability – Proposed Action and All Alternatives*)

PVSP EIR Mitigation Measure 4.3.4-1 *would ensure that all development incorporates adequate measures to prevent urban runoff from the project site from substantially degrading the quality of surface waters. The full mitigation measure text is available in* ***Appendix 3.0****.*

Impact HYDRO-8 Effect on Groundwater Recharge

No Action Alt., Proposed Action, Alts. 1 through 5

As discussed in **Groundwater Hydrology** above, the project site is in the North American subbasin of the Sacramento Valley groundwater basin. All of the alternatives would add extensive new impervious surfaces at a currently undeveloped site, reducing the potential for infiltration. However, the project site is dominated by Type D hydrologic soils, which have a slow infiltration rate with high runoff potential. As a result, the project site is not a significant recharge area. The most likely area for recharge to occur would be along Dry Creek within the Type A soils area. This area would remain in open space under all alternatives and its recharge potential would be unaffected. Since the project site currently has a low infiltration rate and is not important for groundwater recharge, the potential effect would be **less than significant**. Furthermore, implementation of **PVSP EIR Mitigation Measure 4.3.4-1** above would increase infiltration to the extent feasible and minimize the effects of the new impervious surfaces.

Impact HYDRO-9 Effects on Groundwater Basin

No Action Alt.

Development of the No Action Alternative would have a **less than significant** effect on the groundwater basin. Water supply for the project is analyzed in detail in **Section 3.15, Utilities and Service Systems** of this EIS. This analysis focuses specifically on the potential for project-related use of groundwater to result in withdrawals in excess of the basin's safe yield.

During wet and normal water years, the County plans to continue its current practice of using a combination of surface and recycled water supply, with groundwater used only for redundant backup source if surface and recycled water supply is insufficient. During dry years, the Sacramento River Central Valley Project water supply could be reduced by up to 25 percent.

The Western Placer County Groundwater Storage Study recommends a sustainable yield for the Placer County portion of the North American River subbasin of 95,000 afy (11,718

hectare-meter per year [hmy]). Historical groundwater use in Placer County by individual homes, farms, and businesses is estimated to be about 90,000 afy (11,101 hmy). However, due to the removal of agricultural land from production, changes in cropping patterns and irrigation techniques, and introduction of surface water supplies to serve urban development, it is currently estimated that groundwater use is in the range of 65,000 to 75,000 afy (8,018 to 9,251 hmy) in western Placer County (Placer County 2006).

Development under the No Action Alternative would substantially increase water demand. Based on the No Action Alternative's average demand of approximately 6,431,521 gallons per day (gpd) (24,345,955 liters per day [lpd]) at buildout, or 7,209 afy (889 hmy), the backup groundwater demand (25 percent) for any given day would be approximately 1,607,880 gallons (6,086,487 liters), or approximately 1,802 afy (222 hmy).

While groundwater resources are currently used for water supply in the project site, that supply would gradually shift to surface water as the area is built out. Approximately 2,400 afy (296 hmy) are required to meet current agricultural needs within the project site and will not be required with build out. This is greater than the backup groundwater demand of 1,802 afy (222 hmy) under build out of the No Action Alternative, which provides an opportunity to develop groundwater for use in meeting urban domestic and irrigation demands without adversely affecting groundwater levels or long-term groundwater reliability. Therefore, the effect would be **less than significant**. Mitigation is not required.

Proposed Action (Base Plan and Blueprint Scenarios)

Development under the Proposed Action would substantially increase water demand. Based on the Proposed Action Base Plan scenario's average demand at buildout of 10,458,694 gpd (39,590,464 lpd), or approximately 11,723 afy (1,446 hmy), the backup groundwater demand (25 percent) for any given day would be approximately 2,614,674 gallons (9,897,618 lpd), or approximately 2,931 afy (362 hmy). In the highest groundwater use scenario analyzed for the Proposed Action Blueprint scenario, a groundwater backup supply of approximately 3,635 afy (448 hmy) would be necessary.

As discussed above, approximately 2,400 afy (296 hmy) currently used for agricultural uses on the project site would no longer be needed with build out. The range of densities that could be developed under the Proposed Action would demand more than 2,400 afy (296 hmy) of backup groundwater. The Placer County Water Agency determined that the groundwater basin in western Placer County has a sustainable yield of 95,000 afy (11,718 hmy) (PCWA 2005). As of 2006, groundwater use in western Placer County was estimated to range between 65,000 and 75,000 afy (8,018 and 9,251 hmy) (PCWA 2005). Therefore, drawdown of an additional 500 to 1,200 afy (62 to 148 hmy) from the groundwater basin would not result in an adverse effect on supply. The Proposed Action would have a **less than significant** effect related to groundwater use. Mitigation is not required.

Alts. 1 through 5 Build out of Alternatives 1 through 5 would result in an average demand for water including groundwater of approximately 11,582 afy (1,429 hmy). As this is slightly less than the demand under the Proposed Action Base Plan scenario, these alternatives would also have a **less than significant** effect related to groundwater use. Mitigation is not required.

Impact HYDRO-10 Indirect Effects to Hydrology and Water Quality from Off-Site Infrastructure Not Constructed as Part of the Project

No Action Alt., Proposed Action (Base Plan and Blueprint Scenarios), and Alts. 1 through 5 The construction and operation of off-site water pipeline infrastructure by the Placer County Water Agency (PCWA) which would be used by No Action Alternative, Proposed Action, and Alternatives 1 through 5, would result in **less than significant** effects to hydrology and water quality with implementation of mitigation. As analyzed in the PVSP Second Partially Recirculated RDEIR dated March 2007, the pipeline route would be constructed along existing roadways and utility easements. The pipeline would primarily be underground. Construction would generally replace the existing surface material with similar or in-kind surface materials. Therefore, construction of the pipeline would not result in a substantial increase in impervious surfaces or runoff.

The proposed pipeline route would cross waterways and 100-year floodplains. However, the pipeline would be buried and enclosed and would not cause any impacts to the waterways or floodplains.

Grading operations would result in loss of vegetation and expose soils to erosion. Construction equipment and vehicles could release contaminants. Storm water could transport eroded soil and contaminants into nearby waterways contributing to higher sediment loads. The increased sediment loads and turbidity in local waterways would be a significant short-term water quality impact.

PVSP EIR Mitigation Measures 4.3.4-7a through **4.3.4-7c** were adopted by Placer County at the time of project approval of the PVSP (Off-site improvements associated with the Proposed Action). The USACE assumes that Placer County would impose the same mitigation measure on the No Action Alternative and Alternatives 1 through 5 to address this effect. **PVSP EIR Mitigation Measures 4.3.4-7a** through **4.3.4-7c** require the developer to prepare plans and incorporate adequate measures to prevent runoff from the project site from substantially degrading the quality of surface waters. The Placer Vineyards Specific Plan EIR identified these mitigation measures to reduce the effect on water quality from off-site infrastructure to a less than significant level (Placer County 2006). However, in the California Environmental Quality Act (CEQA) Findings of Fact and Statement of Overriding Considerations for the PVSP EIR, the County acknowledged that it did not have the authority to impose these mitigation measures on PCWA's project and the impact would remain significant. USACE concurs with the County that if the PCWA imposes these

or similar mitigation measures on the infrastructure project, the effect on water quality would be less than significant. However, USACE also does not have the authority to impose mitigation measures on a project that would be built by the PCWA and finds that the effect would remain **significant**.

PVSP EIR Mitigation Measure 4.3.4-7a through
PVSP EIR Mitigation Measure 4.3.4-7c: Sediment Load
(*Applicability – No Action Alternative*)

PVSP EIR Mitigation Measures 4.3.4-7a** through **4.3.4-7c** would require the developer to submit a Storm Water Pollution Prevention Plan (SWPP), as well as prepare an erosion control plan and best management practices to reduce erosion and siltation of waterways. The full mitigation measure text is available in **Appendix 3.0.

3.10.6 RESIDUAL SIGNIFICANT IMPACTS

PVSP EIR Mitigation Measures 4.3.2-3a through **4.3.2-3f** would prohibit grading or other disturbance within the post-project 100-year floodplain limit, but would be insufficient to reduce the post-project flood flows of the No Action Alternative. The No Action Alternative would have a residual **significant** effect on flood capacity because the dam within Dry Creek at the Watt Avenue crossing cannot be removed and other drainage improvements cannot be completed without a DA permit.

3.10.7 REFERENCES

California Department of Water Resources (DWR). 2003. "California's groundwater" *Bulletin 118, Update 2003.* http://www.water.ca.gov/groundwater/bulletin118/bulletin118update2003.cfm.

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Sacramento Area Flood Control Agency (SAFCA). 1994. Interim Reoperation of Folsom Dam and Reservoir Final EIR/Environmental Assessment.

Sacramento Metropolitan Water Authority (SMWA). 1996. American River Water Resources Investigation, Planning Report and Draft EIR/EIS.