

CHAPTER 9A PUBLIC UTILITIES – POTABLE WATER SUPPLY

9A.1 INTRODUCTION

The proposed Fiddymment Ranch Specific Plan Amendment 3 project would amend the existing West Roseville Specific Plan (WRSP) by changing the land use and zoning designations for some parcels and by changing development densities within the project area. The project would result in the development of 1,905 additional residential units and 7.27 additional acres of commercial land uses compared with the development evaluated in the WRSP EIR. Other changes proposed to the land uses within the Fiddymment Ranch project area include minor adjustments in acreage for parks, open space, public/quasi-public, and roadway rights-of-way. While the water demands of the overall WRSP were evaluated in the WRSP EIR, the additional development proposed as part of the Specific Plan Amendment 3 project would generate additional demand for potable water supply. In addition, other development has been approved in the City since the time the WRSP was approved. This Draft Subsequent EIR chapter evaluates water supply within the City of Roseville and the availability of water supply to serve the proposed project.

Information for the potable water supply analysis was based upon information within the following documents:

- ❖ *American River Pump Station EIR/EIS, 2002*
- ❖ *City of Roseville 2005 Urban Water Management Plan, 2006*
- ❖ *Creekview Specific Plan Draft EIR, 2010*
- ❖ *Domestic Water Study Fiddymment Ranch SPA No. 3, including Water Conservation Plan, 2010*
- ❖ *Groundwater Impact Analysis for Proposed Reasons Farms Land Retirement Plan, 2003*
- ❖ *Integrated Water Resources Plan, PCWA, 2006*
- ❖ *Placer Groundwater Management Plan, 1998*
- ❖ *Sierra Vista Specific Plan EIR Technical Memorandum: Effects of Changed Water Management Operations on Fisheries and Water Quality Impacts Previously Disclosed in the Water Form Agreement EIR, 2009*
- ❖ *TM-1 – Unit Water Demand Factor Verification and Water Demand Evaluation and Update, 2006*
- ❖ *Water Forum Agreement Final EIR (SCH #950824041), 1999 (hereby incorporated by reference)*
- ❖ *Western Placer County Groundwater Management Plan, 2007*
- ❖ *West Roseville Specific Plan FEIR, 2004*
- ❖ *Water Supply Assessment for Fiddymment Ranch Specific Plan Amendment 3 project, 2011*

All of the above listed documents are available for review during normal business hours at:

City of Roseville Permit Center
 311 Vernon Center
 Roseville, California

The Notice of Preparation (NOP) for this EIR, the Initial Study, and comments received in response to the NOP are provided in Appendix A. One comment on the NOP requested that the EIR include analysis water supply.

9A.2 SETTING

The City of Roseville is the potable water purveyor for city residents. The City’s primary water source is Folsom Lake. The City obtains water from the U.S. Bureau of Reclamation, Placer County Water Agency, and San Juan Water District. The City occasionally uses groundwater as a backup water source; the last instance of groundwater use occurred in 1991 during a drought. The City also facilitates the use of recycled water throughout the City to reduce potable water demands. Recycled water use is discussed in this chapter as it relates to reductions in demand for surface water. Additional discussion of recycled water use in the City, including impacts associated with providing recycled water to the proposed project, is provided in Chapter 9C.

In addition to the water supplies identified above, supplemental water is available from other agencies through system interties. These water system interties are typically operated during treatment plant disruptions, such as are occasionally experienced during plant construction projects or other maintenance operations that require treatment plant or pump station shutdown. Water system interties are also used for equal trading of water supplies in two different service areas due to local operational needs.

Regional Surface Water Features

Table 9A-1 summarizes the existing conditions of the American River, which is the principal water source for the City of Roseville. The table also provides information on regional hydrologic features that rely on water from the American River. More detailed information on each water body is provided in the Creekview Specific Plan EIR, which is hereby incorporated by reference. The Creekview Specific Plan EIR is available at the City of Roseville website:

http://www.roseville.ca.us/planning/major_development_projects/creekview_specific_plan.a.sp

**Table 9A-1
 Surface Water Sources**

Water Source	Conditions
American River	The American River, from which the City of Roseville draws its surface water, is one of the major tributaries of the Sacramento River. The Feather River is the other. The American River basin encompasses about 1,936 square miles and ranges in elevation from 23 feet to more than 10,000 feet above mean sea level. The average annual flow of the American River at Fair Oaks (USGS Station No. 11446500) has been approximately 2.7 million acre-feet (MAF) per year from 1905 through 2003. The American River contributes about 15 percent of the total Sacramento River flow below its confluence in Sacramento. Significant reservoirs in American River basin include Folsom Reservoir

	<p>(discussed below), Union Valley Reservoir on Silver Creek, which is owned and operated by the Sacramento Municipal Utility District (230 TAF); PCWA's Hell Hole Reservoir on the Rubicon River (208 TAF); and French Meadows Reservoir on the Middle Fork American River (135 TAF).</p> <p>The American River has historically provided over 125 miles of riverine habitat to anadromous and resident fishes. Presently, use of the American River by anadromous fish is limited to the 23 miles of river below Nimbus Dam (the lower American River, discussed below).</p>
<p>Folsom Reservoir</p>	<p>Folsom Reservoir (or Folsom Lake) is the largest reservoir in the American River basin (977 thousand acre-feet [TAF]). It is owned and operated by the USBR for the California Central Valley Project (CVP). Folsom Reservoir has dedicated capacity to store flood flows, and has a maximum depth of approximately 266 feet. Folsom Reservoir is the most upstream CVP facility on the American River, and is located at an elevation of 466 feet above msl.</p> <p>Recreation Use</p> <p>Folsom Lake is part of the Folsom Lake State Recreation Area (SRA), an 18,000-acre area encompassing Folsom Lake and Lake Natoma managed by the California Department of Parks and Recreation (DPR). The Folsom Lake SRA is one of the most heavily used recreation areas in the California State Park System because of its proximity to large urban areas, the diminishing open space of the area, and high regional interest in recreation. When full, the reservoir has a surface area of approximately 11,900 acres and 75 miles of shoreline. The Folsom Lake SRA also has approximately 80 miles of trails available for hiking and horseback riding and approximately 30 miles of paved and unpaved bicycling trails.</p> <p>Folsom Lake accommodates a variety of water-dependent recreational activities. Boating is the most popular activity at the reservoir, followed by swimming and fishing (Sacramento Area Flood Control Agency and Reclamation 1994). Water-dependent activities account for nearly 85 percent of recreation use at Folsom Lake.</p> <p>The water level at Folsom Lake dictates the length of the recreation season. During years with normal precipitation, the main recreational season is May through Labor Day in September, when recreation is primarily focused on water-dependent activities. During the remaining months of the year, use consists of fishing and land-based recreation. (California State Parks 2001).</p> <p>Habitat Values</p> <p>With respect to its qualities as fish habitat, strong thermal stratification occurs within Folsom Reservoir annually between April and November. Thermal stratification establishes a warm surface water layer, a middle water layer characterized by decreasing temperature with increasing depth, and a bottom, coldwater layer within the reservoir. This means that Folsom Reservoir provides habitat for both warm-water and coldwater fishes throughout summer and fall.</p> <p>Native species that occur in the reservoir include hardhead and Sacramento pikeminnow. However, introduced species constitute the primary sport fisheries of Folsom Reservoir. Salmonids are stream spawners and, therefore, do not reproduce within the reservoir. However, some spawning by one or more of these species may occur in the American River upstream of Folsom Reservoir.</p> <p>Folsom Reservoir's coldwater pool is important not only to the reservoir's coldwater fish species, but also to lower American River fall-run Chinook salmon and steelhead. Seasonal releases from the reservoir's coldwater pool provide thermal conditions in the lower American River that support annual in-river production of these salmonid species. Folsom Reservoir's coldwater pool is limited in size and volume, and active management of the reservoir's coldwater</p>

	<p>pool is essential to providing maximum possible thermal benefits to fall-run Chinook salmon and steelhead.</p>
<p>Lower American River</p>	<p>The lower American River extends for 23 miles from Lake Natoma to its confluence with the Sacramento River.</p> <p>Recreation Use</p> <p>The river passes through the American River Parkway, a 6,000-acre open space corridor that includes a series of interconnected parks along the publicly owned lands of the river. The parkway has 14 county parks that provide user access and the 32-mile Jedediah Smith Memorial Trail provides bicycling, hiking, and horseback-riding opportunities from Discovery Park to the Folsom Lake SRA. The lower American River is a major site for water recreation.</p> <p>Parkway visitation in 1997 was estimated at 6 million visitor-days. Visitation is expected to increase to 9.6 million visitor-days by 2020, assuming river flows are stable. (County of Sacramento and USBR 1997).</p> <p>Habitat Values</p> <p>The lower American River provides a diversity of aquatic habitats, including shallow, fast-water riffles, glides, runs, pools, and off-channel backwater habitats. The lower American River from Nimbus Dam (river mile [RM] 23) to approximately Goethe Park (RM 14) is primarily unrestricted by levees, but is bordered by some developed areas. Natural bluffs contain this reach of the river. The river reach downstream of Goethe Park, and extending to its confluence with the Sacramento River (RM 0), is bordered by levees. The construction of levees changed the channel geomorphology, reduced river meanders, and increased depth.</p> <p>At least 43 species of fish have been reported to occur in the lower American River system, including numerous resident native and introduced species, as well as several anadromous species. Although each fish species fulfills an ecological niche, several species are of primary management concern either as a result of their declining status or their importance to recreational and/or commercial fisheries. Both steelhead, listed as "threatened" under the Federal ESA, and Sacramento splittail, a California species of special concern and, informally, a Federal species of concern, occur in the lower American River. Additionally, the lower American River from the outfall of the Natomas East Main Drainage Canal (NEMDC, and also known as Steelhead Creek) downstream to the confluence with the Sacramento River is designated as critical habitat for spring-run Chinook salmon (70 FR 52512). Current recreationally and/or commercially important anadromous species include fall-run Chinook salmon, steelhead, striped bass, and American shad.</p>
<p>Sacramento River</p>	<p>The Sacramento River is the largest river in California, providing water for municipal, agricultural, recreational, and environmental purposes throughout Northern and Southern California. Water originating from the upper Sacramento River drainages represents a significant component of the total CVP supply. The Sacramento River watershed is predominantly forestland (approximately 65 percent), with the balance of the land used for rangeland (approximately 20 percent), agriculture (approximately 10 percent), urban/residential (less than 2 percent), and wildlife habitat/other.</p> <p>The annual average Sacramento River flow at Verona (upstream of the confluence with the American River) is about 13.93 MAF per year, based on the 1930 through 2000 flow record maintained by the U.S Geological Survey (USGS) (Station No. 11425500). The Sacramento River enters the Delta at Freeport, downstream of its confluence with the American River, where its average annual flow is about 17 MAF.</p> <p>Most flood flows from the upper Sacramento River, Feather River, and Sutter Bypass are diverted west of Freeport and the Sacramento area into the Yolo</p>

	<p>Bypass through the Fremont Weir at Verona. During the highest flood flows, gates at the Sacramento Weir are opened to divert flow into the Yolo Bypass and provide an additional layer of flood protection for the Sacramento area. The Yolo Bypass discharges into the Delta. Property adjacent to the Sacramento River and its bypasses is protected from flood damage by an extensive levee system.</p> <p>Over 30 species of fish are known to use the Sacramento River. The Sacramento River is an important migration corridor for anadromous fishes moving between the Pacific Ocean or the Delta and upper river and tributary spawning and rearing habitats. The Sacramento River also supports a variety of resident species, which complete their lifecycles entirely within freshwater, often in a localized area.</p> <p>The Sacramento River Watershed Program has identified mercury, organophosphate pesticides, toxicity, and drinking water parameters as chemicals of concern in the Sacramento River watershed, which includes the Sacramento and Feather Rivers, and the Delta (Sacramento River Watershed Program, 2001).</p>
<p>Upper Sacramento River</p>	<p>The upper Sacramento River is often defined as the portion of the river from Princeton (RM 163) - the downstream extent of salmonid spawning in the Sacramento River (Burmester, 1996 as cited in Water Forum 1999), to Keswick Dam - the upstream extent of anadromous fish migration and spawning. The upper Sacramento River is differentiated from the river's "headwaters" which lie upstream of Shasta Reservoir.</p> <p>The upper Sacramento River provides a diversity of aquatic habitats, including fast-water riffles and shallow glides, slow-water deep glides and pools, and off-channel backwater habitats. The upper Sacramento River is of primary importance to native anadromous species, and is presently utilized for spawning and early-life-stage rearing, to some degree, by all four runs of Chinook salmon (fall-, late fall-, winter-, and spring-runs) and steelhead.</p> <p>Streamflow is greatly influenced by managed releases from Shasta Reservoir and, during the rainy season, by stormwater runoff. The stream channel is in a natural state, with no artificial levees. The drainage basin area includes parts or all of the Great Basin, Middle Cascade Mountains, Klamath Mountains, Coast Ranges, and Sacramento Valley physiographic provinces. Land cover in the area is mainly forestland; cropland, pastures, and rangeland cover most of the remaining land area. Water quality effects from past and present mining activities in the Klamath Mountains are likely to be detected within portions of the upper Sacramento River (USGS 2002).</p>
<p>Lower Sacramento River</p>	<p>The lower Sacramento River is generally defined as that portion of the river from Princeton to the Delta, at approximately Chipps Island (near Pittsburg). The lower Sacramento River is predominantly channelized, leveed and bordered by agricultural lands. Aquatic habitat in the lower Sacramento River is characterized primarily by slow-water glides and pools, is depositional in nature, and has reduced water clarity and channel habitat diversity compared to the upper portion of the river.</p> <p>Many of the fish species utilizing the upper Sacramento River also use the lower river to some degree, even if only as a migratory pathway to and from upstream spawning and rearing grounds. For example, adult Chinook salmon and steelhead primarily use the lower Sacramento River as an immigration route to upstream spawning habitats and an emigration route to the Delta. The lower river is also used by other fish species (e.g., Sacramento splittail and striped bass) that make little to no use of the upper river. Overall, fish species composition in the lower portion of the Sacramento River is quite similar to that of the upper Sacramento River and includes resident and anadromous cold- and warmwater species. Many fish species that spawn in the Sacramento River and its tributaries depend on river flows to carry their larval and juvenile life stages to downstream nursery habitats. Native and introduced warmwater fish species primarily use the</p>

	<p>lower river for spawning and rearing, with juvenile anadromous fish species also using the lower river and non-natal tributaries, to some degree, for rearing.</p>
<p>Sacramento – San Joaquin Delta Estuary</p>	<p>Below its confluence with the American River at Sacramento, the Sacramento River enters the Delta at Freeport, merges with the San Joaquin River, and then flows through San Francisco Bay to the Pacific Ocean. The Delta is defined as the most upstream portion of the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Estuary or Estuary), and consists of a triangle-shaped area composed of islands, river channels, and sloughs at the confluence of the Sacramento and San Joaquin rivers. The Delta forms the lowest part of the Central Valley, bordering and lying between the Sacramento and San Joaquin rivers, and extending inland from the confluence of these rivers as far as Sacramento and Stockton.</p> <p>The Delta is the source of drinking water for more than 23 million Californians in the San Francisco Bay Area, Central Valley, and Southern California. The Delta is also an important agricultural area for corn, grain, hay, rice, and pasture. Although much of the Delta is used for agriculture, the land also provides habitat for wildlife. Many agricultural fields are flooded in the winter, providing foraging and roosting sites for migratory waterfowl. In addition to lands that are used seasonally, CDFG manages thousands of acres specifically for wildlife.</p> <p>On average, about 21 MAF of water reach the Delta annually. About 62 percent of total Delta inflow is from the Sacramento River, including additional CVP and SWP releases under the 1995 Water Quality Control Plan (WQCP) for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan) (SWRCB 1995). Actual Delta inflow varies widely from year to year. In 1977, a critically dry year, Delta inflow totaled only 5.9 MAF, while in 1983, a wet year, the total was about 70 MAF. Property adjacent to the Delta is protected by an extensive levee system.</p> <p>The San Francisco Bay (Bay) and the Delta (together Bay-Delta) make up the largest estuary on the west coast (U.S. Environmental Protection Agency 1992). The northern Delta is dominated by the waters of the Sacramento River, which are of relatively low salinity; whereas the relatively higher salinity waters of the San Joaquin River dominate the southern Delta. The central Delta includes many channels where waters from the Sacramento and San Joaquin rivers and their tributaries converge.</p> <p>The Delta's tidal-influenced channels and sloughs cover a surface area of approximately 75 square miles. These waters support a number of resident freshwater fish and invertebrate species. The waters are also used as migration corridors and rearing areas for anadromous fish species and as spawning and rearing grounds for many estuarine species.</p> <p>The Bay-Delta estuary provides habitat for a diverse assemblage of fish and macroinvertebrates. Many of the fish and macroinvertebrate species inhabit the estuary year-round, while other species inhabit the system on a seasonal basis as a migratory corridor between upstream freshwater riverine habitat and coastal marine waters, as seasonal foraging habitat, or for reproduction and juvenile rearing.</p>
<p>Central Valley Project</p>	<p>The Central Valley Project (CVP) provides water supply to meet in-basin needs and exports for areas south of the Delta. The CVP is a multipurpose project operated by USBR that stores and transfers water from the Sacramento River, San Joaquin River, and Trinity River basins to the Sacramento, San Joaquin, and Santa Clara valleys. The CVP was authorized by Congress in 1937, and operates as an integrated system to serve water supply, hydropower generation, flood control, navigation, fish and wildlife, recreation, and water quality control purposes.</p>

	<p>The CVP service area extends about 430 miles through much of California's Central Valley. CVP major storage reservoirs include Shasta Lake with 4,552 thousand acre-feet (TAF) in the Sacramento River basin, Whiskeytown Lake (241 TAF) and Trinity Lake (2,448 TAF) in the Trinity River basin, and Black Butte Reservoir (136 TAF) in the Stony Creek basin. The CVP also includes the San Felipe Unit, which delivers water to the Santa Clara Valley.</p> <p>In 2001, CVP deliveries totaled about 5.7 MAF, or about 80 percent of its total contracted deliveries of 7.1 MAF (USBR 2003). These deliveries included approximately 2.9 MAF to the Sacramento River Service Area, 192 TAF to the American River Service Area, and 2.6 MAF to the Delta Export Service Area. As noted earlier, the City of Roseville has a contract with USBR for up to 32,000 AFY of CVP water diverted from Folsom Reservoir.</p>
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City of Roseville Surface Water Supply

The City's current surface water supply is American River water diverted from Folsom Lake. Surface water is delivered from Folsom Lake through the United States Bureau of Reclamation's (USBR) pumping plant and parallel 48-inch and 60-inch transmission lines to the City's water treatment plant, located on Barton Road in Granite Bay. The City's plant has a treatment capacity of 100-million gallons per day (mgd). Water is treated through conventional treatment processes of flocculation/sedimentation, filtration, and disinfection. Treated water is fluoridated for consumer health, and pH is adjusted for corrosion protection of the distribution system.

The City is contracted to receive up to 66,000 acre-fee per year (AFY) of surface water from the USBR, Placer County Water Agency (PCWA) and San Juan Water District (SJWD), as summarized in Table 9A-2 below. However, the City's participation in the Water Forum, discussed below, limits the City's supply to a maximum of 58,900 AFY in normal and wet years (54,900 from the American River through USBR and PCWA plus 4,000 from the Middle Fork Project through SJWD) and to a minimum of 39,800 AFY in critically dry years.

**Table 9A-2
City of Roseville Surface Water Contracts**

Contracted Water Supply Source	Contract Amount (AFY)
USBR – American River	32,000
PCWA – American River	30,000
SJWD (normal/wet year only) – Middle Fork Project	4,000
Total Contracted Supplies	66,000
Available Supplies: Normal/Wet Years (a)	58,900
Available Supplies: Driest/Critically Dry Years (a)	39,800

(a) As a result of City commitments made under the Water Forum.

Water Forum Agreement

The City participated in the Water Forum, a regional stakeholder effort concerned with the protection of environmental, aesthetic, and recreational values of the Lower American River as well as ensuring reliable water supplies for the region through the year 2030. The Water Forum

process began in the early 1990s and Water Forum Agreements specific to each water purveyor were signed in 2000.

Water Forum stakeholders developed an integrated package of actions that will meet the two primary objectives of the Water Forum. Each element of the package is necessary for a regional solution to work. These elements are:

- ❖ Increase surface water divisions;
- ❖ Actions to meet customers' needs while reducing diversion impacts on the lower American River in drier years;
- ❖ An improved pattern of fishery flow releases from Folsom Reservoir;
- ❖ Lower American River Habitat Management, which also addresses recreation in the lower American River;
- ❖ Water conservation;
- ❖ Groundwater management; and
- ❖ Water Forum successor efforts.

An EIR was prepared for the Water Forum Agreement, which established 1995 as the baseline year from which water diversions from the American River and associated impacts were evaluated. In 1995, the City diverted 19,800 AFY from the American River.

The Water Forum resulted in the development of purveyor-specific agreements (PSA) for each regional water agency. The PSAs outline how suppliers will meet commitments agreed to as part of the Water Forum efforts. In return for signing the final WFA, water purveyors receive regional support for water supply projects, including site-specific infrastructure development. The City of Roseville's PSA included a limitation of diversion from the American River in both wet and dry years. In wet years, the City agreed to limit diversions from its American River supply contracts to no more than 54,900 AFY in normal/wet years (increased to 58,900 AFY with subsequent water supply contracts with SJWD for 4,000 AFY), and to no less than 39,800 AFY in driest years (critically dry).

Re-Operation Plan

Under the City's purveyor-specific WFA, the City has an agreement with PCWA on a re-operation plan for PCWA's Middle Fork Project (MFP). The re-operation plan would be implemented in driest years to release up to 20,000 AFY of raw water down the American River. The 20,000 AFY amount reflects the increase in the amount of water diverted by the City since 1995. As noted above, the City diverted 19,800 AFY in 1995, and under the Water Forum, the City can divert a maximum of 38,900 AFY in drier and driest years. Implementation of the re-operation plan would replace the additional water diverted and ensure the environmental effects from the City's reliance on American River water are consistent with the impact analysis provided in the Water Forum Agreement EIR.

Potential Additional Supplies

The City is evaluating obtaining 7,100 AFY of water (the difference between contracted supplies of 66,000 AFY and normal/wet year WFA limitation of 58,900 AFY) from a new diversion on

the Sacramento River through the proposed Sacramento River Water Reliability Project (SRWRP), should that project be completed. The SRWRP is a joint project between the City of Sacramento, Sacramento Suburban Water District, PCWA, and the City of Roseville. As discussed in Impacts 9A-1 and 9A-2 below, the City is not in need of additional surface water supplies, and therefore, does not need a surface water supply diversion point from the Sacramento River to serve the proposed Fiddymment Ranch SPA 3 project. However the diversion may be necessary to provide sufficient water supply for the City's under cumulative buildout conditions in 2025. Therefore, additional information on the SRWRP is included in CHAPTER 11 CUMULATIVE IMPACTS.

Regional Groundwater Conditions

Roseville is located in the North American River Groundwater Sub-basin which underlies north Sacramento, south Sutter, and west Placer counties. The Sub-basin encompasses approximately 351,000 acres and is a component of the larger Sacramento Valley Groundwater Basin. The Sub-basin is defined by the Bear River on the north, the Feather and Sacramento rivers on the west, the American River on the south and a north/south line extending from the Bear River south to Folsom Lake that passes about two miles east of the City of Lincoln.

As reported in the California Department of Water Resources (DWR) Bulletin 118-3, Evaluation of Ground Water Resources: Sacramento County (1974), geologic formations which comprise the water-bearing deposits include an upper aquifer (Aquifer 1) and a lower aquifer system (Aquifer 2). Aquifer 1 consists of the Victor, Fair Oaks and Laguna Formations. Aquifer 2 consists primarily of the Mehrten Formation. Groundwater within Aquifer 1 is typically unconfined, while in Aquifer 2 it is semiconfined. In Bulletin 118, DWR estimates the storage capacity of the North American Sub-basin to be approximately 4.9 MAF.

For several decades, DWR has used three groundwater wells in the project vicinity to monitor groundwater elevations within and around the project area. The groundwater levels at the southern end of the basin have been stable since about 1982 and the levels have risen slightly at the northern end of the basin. These stable groundwater levels indicate that groundwater pumping is currently in balance with the natural groundwater recharge rate.

The PCWA Integrated Water Resources Plan (IWRP) indicates a potential safe yield of approximately 95,000 AFY for the basin. The safe yield is defined as the amount of groundwater that can be continuously withdrawn from a basin without adverse impact. The IWRP also estimated average annual agricultural and urban demands in western Placer County have been about 97,000 AFY. Based on the stable groundwater levels in the basin, 97,000 AFY appears to be within the safe yield for the basin.

Aquifer 1 has historically been pumped for agricultural use and Aquifer 2 has been used for urban water purveyors. As agricultural lands are converted to developed lands, pumping demands have decreased, especially when heavy pumping uses such as rice farming have been taken out of production. It is expected that basin pumping demands will continue to decrease over time as more lands are removed from active agricultural use. If the agricultural pumping demands are not replaced by other equivalent pumping demands, it is expected to result in improvements to the condition of the basin. There are no existing legal constraints that limit groundwater pumping.

City of Roseville Groundwater Supply

The City uses groundwater to supplement surface water supplies for backup and dry year needs. To further sustainability of the groundwater basin, the City is investigating an aquifer storage and recovery (ASR) program. If implemented, the ASR program would allow the City to inject potable water (treated drinking water) into the aquifer during wet times (wet years or during the rainy season) and to pump groundwater when backup supplies are needed. This would bolster the basin's reliability and ensure that potential groundwater use does not adversely affect the aquifer. Over the past several years the City has been working with the Central Valley Regional Water Quality Control Board and other state agencies in piloting its ASR program. This has included injecting potable water taken from the City's distribution system into the aquifer and subsequent extraction and delivery of groundwater to City water customers. The City is in the process of preparing an EIR for the City's ASR program. The Notice of Preparation was released in June 2009 and the draft EIR is currently anticipated to be released in 2011.

The City currently operates four groundwater wells, and has plans to construct seven more. The existing wells are capable of delivering a total of approximately 12,000 AFY of water supply if run full-time, which is the equivalent of approximately 33 AF per day. With construction of the additional wells, the City's groundwater facilities would allow for delivery of up to 73 AF per day or 27,500 AFY if run on a continuous basis. Additional information on the location and capacity of each well is provided in the Creekview Specific Plan EIR. The City's groundwater wells are maintained primarily for backup water supply and to improve water supply reliability during drought and emergency conditions. The wells are generally used intermittently during high water use months in drought conditions. For example, prior to the testing program for ASR, the last time the City relied on groundwater was during drought conditions experienced in 1991.

According to the IWRP, it is anticipated that groundwater pumping exceeding the safe yield during dry periods is feasible as long as the long term (multi years) average does not exceed the safe yield of 95,000 AFY.

Regional Groundwater Recharge

Under natural conditions, groundwater recharge results from infiltration of precipitation (rain and snow). The rate and quantity of water reaching the saturation zone depends on several factors, including the amount and duration of precipitation, soil type, moisture content of the soil, and vertical permeability of the unsaturated zone.

Soils containing hardpan occupy over half the valley on the east side of the Sacramento River (which includes the project area) and these hardpans severely restrict downward movement of water. Soil Group D (poor infiltration) accounts for the majority of soil cover in the project area. The abundance of Group D soils limits percolation and groundwater recharge under existing conditions. The U.S. Geologic Survey (USGS) estimates that only 1.6 percent of the total natural recharge in the Sacramento Valley basin can be attributed to the Placer County sub-basin area. Consequently, the project area is not considered a significant recharge source in the regional context.

Recycled Water Supply

Recycled water refers to wastewater treatment plant effluent that has received a level of treatment that meets the State requirements (Title 22) for direct non-potable reuse (for example, irrigating landscaping). Recycled water is part of the City's water supply portfolio and is available from Roseville's two wastewater treatment plants, the Dry Creek WWTP and the Pleasant Grove WWTP. Both plants produce Title 22-quality effluent that is available for recycled water applications. The system currently delivers nearly 2,040 AFY recycled water to City parks, streetscapes, and golf courses. System expansion is planned for more intensive use of recycled water in the western portion of the City as new development is built. The City's recycled water system and anticipated demands are described in Chapter 9C of this EIR.

Water Supply Reliability

The City of Roseville currently supplies surface water for municipal and industrial uses. This requires firm surface water contract amounts to ensure that proper supplies are maintained for the residences and businesses relying on the water supply. The City estimates that during normal/wet years, the City of Roseville has sufficient surface water to meet its customers' needs through buildout of the current General Plan. This is based on a continued commitment to regional planning for water supplies, ongoing conservation efforts, and additional recycled water use for landscaping. It is expected that if surface water supply is reduced during times of drought, consistent with reductions identified in the WFA, existing supply coupled with conservation and groundwater use will be sufficient to meet Citywide demands. This is further explained in Impact 9A.1.

Water Demand

The City measures water demand, which is the amount of water required to serve a customer for one year, in acre feet per year (AFY). One acre-foot of water is the volume of water that can cover an acre of land at a depth of one foot and equals 325,828 gallons. The City calculates anticipated water demand for new development using the City's unit demand factors, which are based upon actual customer water meter usage data. The current demand factors were developed in 2002 as part of the West Roseville Specific Plan process. The City conducted additional studies in 2006 and 2008 to confirm the unit demand factors using a longer history of available water meter data from City customers. These additional studies confirmed the validity of the City's unit demand factors.

Water demands are divided into potable water demands and recycled water demands. Potable water demands are that component of the total water demand that will be used for public health related activities such as drinking water and indoor domestic use. In Roseville potable water demand needs are typically met by surface water supplies and supplemented by groundwater supplies for backup during emergency and drought conditions. Recycled water demand is that component of the overall water demand that can be used for outside irrigation use. Potable water demand is calculated by subtracting estimated recycled water demands from the total water demand. Anticipated recycled water demand is calculated based upon a set of formulas as described in Chapter 9C.

The City's water demand in 2010 was 30,396 AFY. Of this demand approximately 1,709 AFY was met through recycled water supplies. At buildout of the City's General Plan including the recently approved Sierra Vista and Creekview Specific Plans, water demands are estimated to

reach approximately 62,609 AFY of which 4,510 AFY will be met through recycled water supplies.

Potable Water Treatment

The City of Roseville operates a 100-million-gallon-per day (mgd) water treatment plant (WTP). The City's WTP is located on Barton Road in the Granite Bay community of Placer County. Raw (untreated) surface water from Folsom Lake is conveyed from the United State Bureau of Reclamation (USBR) facilities to the City's WTP. USBR raw water delivery facilities are described in the Water Distribution section below. Raw water treatment consists of these primary processes: flocculation/sedimentation, clarification, filtration and disinfection. Following these processes the treated water is fluoridated prior to distribution to City water customers. Peak demands of 58 mgd were experienced at the WTP in July of 2006.

Water Distribution

The City's water distribution system includes raw water facilities to deliver surface water supplies to the City's water treatment plant and the potable water facilities that deliver potable water to City water customers. In addition to the potable water system, the City also operates a recycled water distribution system. This system is described in Chapter 9C of this Draft EIR.

Raw Water Facilities

The raw water facilities consist of both infrastructure owned and operated by the USBR and infrastructure owned and operated by the City of Roseville. USBR facilities include an 84-inch intake pipeline and pumping plant. The pumping plant has sufficient capacity for SJWD, Roseville and portions of the City of Folsom. Roseville pumping capacity limits are 150 cubic feet per second (96.9 mgd). Once through the pumping station, water is conveyed through an 84-inch pipeline to the "Hinkel Y" where the flows to SJWD and Roseville are split. Raw water for Roseville then flows through parallel raw water pipelines to the City's WTP. These pipelines consist of a short segment of 60-inch pipeline followed by parallel 60-inch and 48-inch pipelines. The raw water is then introduced at the influent portion of the Barton Road plant for treatment.

Potable Water Facilities

The City's potable water supply system is comprised of pipes, storage facilities, booster pumping stations, groundwater wells and pressure regulating stations. Distribution piping in the City ranges from as large as 66-inch diameter to as small as 4-inch diameter. The City designs its distribution system to meet various pressure and velocity criteria under average day, maximum day and peak hour delivery scenarios. In general, the City's system meets the maximum day demand criterion of 6 feet per second (fps) for transmission main velocity (i.e., the rate at which water flows through the pipelines) and the water pressure criterion of 50 pounds per square inch (psi). There are a few locations where these criteria are not met, but these discrepancies are minimal and do not adversely affect water service to customers.

The City has six storage tanks with a combined total storage capacity of 31 million gallons (mg). Water storage is necessary in order to manage flow fluctuations on a daily basis, and to maintain sufficient storage to address emergency needs such as water main breaks and high water needs such as fire fighting activities.

The City currently has two pumping stations currently in the City, with plans for two more. The existing stations are the Dual Purpose Pump Station (DPPS) and the Highland Reserve North Pump Station (HRNPS). As the name implies, the DPPS provides two distinct functions. The first is that it provides the ability to fill the City’s North East Storage Reservoirs during off-peak demand periods and the second is that it boosts water pressures into higher elevation areas in and adjacent to the Stoneridge Specific Plan area of the City. Similarly, the HRNPS allows the City to boost water pressures into higher elevation portions of the Highland Reserve North Specific Plan area. Future water storage tanks and pump station are planned for construction within the WRSP and the Sierra Vista Specific Plan areas to service customers in the western portion of the City.

9A.3 REGULATORY SETTING

Federal Regulations

Central Valley Project

Folsom Dam on the American River, from which the City of Roseville draws its surface water supplies, is managed by the USBR as part of the CVP. The CVP was first authorized under the Rivers and Harbors Act of 1935. This act and two additional authorizations established allowable uses of dams and reservoirs to include river regulation, improvement of navigation, flood control, irrigation and domestic uses, and power. Since the original authorization, numerous laws, directives, opinions, and orders have affected or influenced management of the CVP. More recently, the 1992 Central Valley Project Improvement Act (CVPIA) reauthorized the CVP for a wider range of beneficial uses and interests than originally mandated. The USBR prepared a Programmatic EIS for the CVPIA programs. The CVPIA allocates 800,000 AFY of CVP yield to meet new beneficial uses defined under CVPIA Section 3406(b)(2). The CVPIA establishes the following objectives:

- ❖ protecting and restoring fisheries and wildlife in the Central Valley;
- ❖ addressing impacts of the CVP on fish and wildlife;
- ❖ enhancing the operational flexibility of the CVP;
- ❖ expanding the use of water transfers;
- ❖ improving water conservation; and
- ❖ addressing the requirements of fish, wildlife, agricultural, municipal, industrial, and power generation water users.

Central Valley Project and State Water Project Coordinated Operations

The CVP operated by the USBR and the State Water Project (SWP) operated by the California Department of Water Resources (DWR), rely on the Sacramento River and the Delta as common conveyance facilities. DWR’s primary storage facility is Oroville Dam on the Feather River. Reservoir releases and Delta exports must be coordinated so that both the CVP and SWP are able to retain their portion of the shared water and also jointly share in the obligations to protect beneficial uses. A Coordinated Operations Agreement (COA) between the CVP and SWP was developed and became effective in November 1986. The COA defines the rights and responsibilities of the CVP and SWP regarding water needs of the Sacramento River system and Delta and includes obligations for in-basin uses, accounting, and real-time coordination of

water obligations of the two projects. A CVP/SWP apportionment of 75/25 is implemented to meet in-basin needs under balanced Delta conditions, and a 55/45 CVP/SWP ratio is in effect for excess flow conditions. The COA contains considerable flexibility with regard to the manner with which Delta conditions- in the form of flow standards, water quality standards, and export restrictions- are met.

Operation of the CVP and SWP is described in a document known as the Operations Criteria and Plan (OCAP). As updated in 2004, the OCAP provides a detailed description of the coordinated operations of the CVP and SWP based on historical data and serves as a starting point for planning future operation.

The National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) have each issued Biological Opinions on the OCAP, that include Reasonable and Prudent Alternative (RPA) actions designed to alleviate jeopardy to listed species and adverse modification of critical habitat. The USFWS RPA restricts Delta pumping operations and thus limits deliveries of water to CVP/SWP contractors south of the Delta. The NMFS RPA restricts Delta pumping operations, impose Shasta Reservoir storage targets to achieve water temperature requirements in the Sacramento River below Keswick Dam, impose lower American River flow standards, require modified Delta Cross Channel operations, and limit reverse Old and Middle River flows. It also requires the USBR and NMFS to host annual workshops to review the prior water year's operations and determine whether alternations to the RPA measures are warranted for the current year. The Biological Opinions were invalidated by a federal court in December 2010. As such, an updated OCAP has yet to be finalized.

State Regulations

Senate Bills 610 and 221

In the year 2001, the California Legislature enacted two pieces of legislation relevant to environmental review focused on the water consumption associated with large development projects. Senate Bill (SB) 610 (Chapter 643, Statutes of 2001; Section 21151.9 of the Public Resources Code and Section 10910 et seq. of the Water Code) requires the preparation of "water supply assessments" (WSAs) for large developments (i.e., more than 500 dwelling units or nonresidential equivalent), such as the Fiddymment Ranch SPA 3 project, unless the project's water demand was included in the most recently adopted Urban Water Management Plan (UWMP).

The City of Roseville is the public water purveyor for the proposed project. The City's UWMP did not account for the project's water demand. Therefore, the City prepared a WSA for this project, which is provided in Appendix E1 of this Draft EIR. In compliance with SB 610, the WSA:

- ❖ identifies the existing and future water supplies available during normal, single-dry, and multiple-dry water years over a 20-year projection period; and
- ❖ addresses whether existing and projected water supplies are adequate to serve the project while also meeting existing urban, agricultural, and manufacturing demands and the needs of other anticipated development in the service area.

If the proposed project is approved, additional complementary statutory requirements, created by 2001 legislation known as SB 221 (Government Code Section 66473.7), would apply to the approval of tentative subdivision maps for more than 500 residential dwelling units. This statute requires cities and counties to include, as a condition of approval of such tentative maps, the preparation of a water supply verification. The verification, which must be completed no later than the time of approval of final maps, is intended to demonstrate that there is a sufficient water supply for the newly created residential lots. The statute defines sufficient water supply as:

... the total water supplies available during normal, single-dry, and multiple-dry years within a 20-year projection period that would meet the projected demand associated with the proposed subdivision, in addition to existing and planned future uses, including, but not limited to, agricultural and industrial uses.

Safe Drinking Water Quality Regulations

The State Department of Public Health (DPH) establishes “primary” and “secondary” Domestic Water Quality Standards for drinking water supplied by public water systems such as the City. The standards are required by state law to meet or exceed standards adopted by the U.S. Environmental Protection Agency. The concentrations of specified constituents are limited to maximum contaminant levels. Maximum allowable levels have been established for bacteriological contaminants (such as coliform), organic chemicals (such as benzene), inorganic chemicals (such as total dissolved solids), and radioactivity (such as gross alpha particle activity). Primary standards are set at levels necessary to protect public health and may not be exceeded. Secondary standards are based on aesthetic criteria such as taste and odor and are composed of (1) recommended limits that may be exceeded but are not recommended to be exceeded; (2) upper limits that may be exceeded for a limited duration with prior DPH approval; and (3) short-term limits that may not be exceeded.

Public water systems also must obtain a domestic water supply permit from DPH that must be amended to reflect any changes in the water supply system. The City has obtained such a permit.

Urban Water Management Planning Act

The Urban Water Management Planning Act (Act) was established in Division 6, Part 2.6 of the California Water Code. The Act was first passed in the early 1980s and has been amended several times. The Act was developed due to concerns for potential water supply shortages throughout the State of California. It requires information on water supply reliability and water use efficiency measures. Urban water providers supplying more than 3,000 customers or supplying more than 3,000 AFY must develop and submit an UWMP to the California Department of Water Resources (DWR) every 5 years. The UWMP must describe the provider’s efforts to promote efficient use and management of water resources. The City has complied with this Act through the adoption of the City’s UWMP, which is described in the “Local Regulations” subsection below.

Groundwater Management

SB 1938 requires any public agency seeking State funds administered through the Department of Water Resources for the construction of groundwater projects or groundwater quality

projects to prepare and implement a groundwater management plan with certain specified components. Required components include establishing basin management objectives, preparing a plan to involve other local agencies in a cooperative planning effort, and adopting monitoring protocols that promote efficient and effective groundwater management.

Water Conservation Projects Act

The State of California’s Water Conservation Projects Act of 1985 (Water Code Sections 11950 – 11954) is intended to encourage local agencies and private enterprise to implement potential water conservation and reclamation projects.

Local Regulations

Water Forum Agreement

As described in Section 9A.2 above, the WFA is the result of the efforts of a diverse group of community stakeholders. The stakeholder group was formed in 1994 with the goal to formulate principles for developing solutions to meet future regional water supply needs by providing a reliable and safe water supply for the region through the year 2030 while preserving the fishery, wildlife, recreational, and aesthetic values of the Lower American River. Essential elements of a package of actions developed as part of the WFA effort are defined in Section 9A.2 above. As a result of participation in the WFA, the City of Roseville signed onto a PSA describing how Roseville will implement each of the WFA elements. As described in Section 9A.2 above, the PSA influences the City’s surface water planning by limiting the City’s supply to a maximum of 58,900 AFY in normal and wet years and to a minimum of 39,800 AFY in critically dry years.

City of Roseville General Plan

The City of Roseville General Plan contains goals and policies relating to water supply and distribution. The goals and policies relevant to consideration of the project’s impacts related to water consumption include the following:

Goal 1: Maintain a water system that adequately serves the existing community and planned growth levels, ensuring the ability to meet projected water demand and to provide needed improvements, repairs and replacements in a timely manner.

Goal 2: Provide water services to all existing and future Roseville water utility customers. The provision of services by another provider may be considered where it is determined that such service is beneficial to the City and its utility customers or the provisions of City services is not feasible.

Goal 4: Actively pursue water conservation measures.

Policy 1: Secure sufficient sources of water to meet the needs of the existing community and planned growth.

Policy 2: Provide sufficient water treatment capacity and infrastructure to meet projected water demand.

Policy 5: Ensure all development provides for and pays a fair share of the cost for adequate water distribution, including line extensions, easements, and plant expansions.

Policy 6: Design the City’s water system to maintain a minimum water pressure of 50 pounds per square inch (PSI), while providing adequate water to meet fire demands in the system.

Policy 10: Develop and implement water conservation standards and measures as necessary elements of the water system.

City of Roseville Municipal Code and Water Conservation Ordinance

Section 14 of the City's Municipal Code contains regulations associated with water rates, conservation and water waste prohibitions. The City’s Water Conservation and Drought Mitigation Ordinance is contained in Municipal Code Chapter 14.09. The goal of this ordinance is to ensure compliance with all federal, state and local requirements relating to water conservation and drought mitigation. Specifically, this ordinance aims to reduce per capita water consumption, protecting and conserving the City’s water supply, and minimizing and/or eliminating water waste. Under this ordinance, the City has authority to declare water shortage conditions and implement drought related measures to restrict water use.

City of Roseville Urban Water Management Plan and Groundwater Management Plan

The City prepared and adopted a 2005 Urban Water Management Plan (UWMP). This plan was prepared to comply with the Urban Water Management Planning Act of the California Water Code (described above). The UWMP describes the availability of water and discusses water use, recycled water use and water conservation. The 2005 UWMP considered water demands within the WRSP of which this project is a part.

The City participated with PCWA and the City of Lincoln to complete a groundwater management plan in August 2007. PCWA’s integrated water resources strategy anticipates that groundwater pumping would not exceed safe yields as long as the long-term multiple years average does not exceed 95,000 acre-feet per year (AFY).

City of Roseville Water Conservation Ordinance

In 1991, the City developed and adopted the Roseville Water Conservation and Drought Mitigation Ordinance as documented in the City’s Municipal Code Chapter 14.09. Under this ordinance, the City has authority to declare water shortage conditions and implement drought related mitigation measures.

In February 2008, the City of Roseville adopted Ordinance 4629 which added Sections 14.09.200-14.09.220 and amended Sections 14.09-020 – 14.09.090 of the Roseville Municipal Code regarding water conservation. The purpose of this ordinance is to ensure compliance with all federal, state and local requirements relating to water conservation and drought mitigation. Ordinance 4629 provides an approach to conservation that reflects there are now more water customers billed on metered rates, which creates additional tools to achieve conservation.

City of Roseville Water Efficient Landscape Ordinance

In 2006, the State enacted legislation requiring DWR to update the State Model Water Efficient Landscape Ordinance. The updated model ordinance contains several new landscape and irrigation design requirements aimed at reducing water waste in landscape irrigation. All local

land use agencies are required to adopt the model ordinance, or develop an ordinance that is at least as effective by January 2010. The City of Roseville adopted an Ordinance tailored to meet the City’s needs that is based on, and is at least as effective as, the model ordinance. The new Water Efficient Landscape Ordinance has been incorporated into the City’s Zoning Ordinance as Chapter 19.67 and supersedes the City’s 1993 Water Efficient Landscape Requirements.

City of Roseville Improvement Standards

Section 8 of the City's Improvement Standards (Water System Design) provides criteria for the design of domestic water systems. Compliance with these standards ensures water delivery facilities are properly sized to distribute water to any new customers that would be created as a result of implementing the proposed project.

9A.4 IMPACTS

Potential impacts associated with potable water supply have been evaluated using criteria identified in Appendix G of the CEQA Guidelines. The analysis below considers whether the project would have a significant impact related to water supply, distribution, and consumption by resulting in any of the following conditions:

- ❖ Require new or expanded entitlements for water supplies
- ❖ Require or result in the construction of new water treatment facilities or expansion of existing facilities
- ❖ Substantially deplete groundwater supplies such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level

Project Impacts

IMPACT 9A.1:	Require New Or Expanded Water Supply Entitlements
APPLICABLE POLICIES AND REGULATIONS:	Urban Water Management Planning Act Water Conservation Projects Act Water Forum Agreement City of Roseville General Plan Policies Urban Water Management Plan City of Roseville Improvement Standards City of Roseville Water Conservation Ordinance
SIGNIFICANCE WITH POLICIES AND REGULATIONS:	Less than Significant
MITIGATION MEASURES:	None
SIGNIFICANCE AFTER MITIGATION:	Less than Significant

Development of the Fiddymment Ranch area under the proposed Fiddymment Ranch SPA 3 project would increase the amount of residential and commercial land uses beyond the amount of development anticipated under the WRSP. The project would also incorporate water conservation strategies in the development of all new homes within Fiddymment Ranch. The

water conservation measures include turf reductions and low water using landscaping in residential front yards, smart irrigation controllers for irrigation uses and re-circulating hot water systems for residential units. It is anticipated that inclusion of these water conservation measures within the Fiddymment Ranch area of the WRSP will reduce water demands by 475 AFY. The water conservation measures along with anticipated water savings are included as an appendix in the Wood Rodgers Domestic Water Study for Fiddymment Ranch SPA No. 3, provided as Appendix E2 to this Draft EIR.

Based on the City’s water demand land use factors, development of Fiddymment Ranch under the WRSP would generate a total water demand of 3,528 AFY, while development of Fiddymment Ranch under the proposed Fiddymment Ranch SPA 3 would generate a total water demand of 4,140 AFY, as shown in Table 9A-3. A portion of this increased demand would be offset by conservation savings of 475 AFY. Therefore, the proposed project would increase water demand by 137 AFY.

**Table 9A-3
Fiddymment Ranch Water Demands**

Project Land Use	Existing Fiddymment Ranch Land Use Plan Water Demand (AFY)	Proposed Fiddymment Ranch SPA 3 Project Land Use Plan Water Demand (AFY)	Change in Demand (AFY)
Low Density Residential	1,925	2,147	222
Medium Density Residential	63	283	220
High Density Residential	281	423	142
Community Commercial	113	135	22
Elementary School	67	74	7
High School	241	241	-
Public/Quasi Public	9	9	-
Park	738	725	(13)
Paseo	22	22	-
Open Space	0	-	-
Right of Way	-	-	-
Sub-Total (w/o losses)	3,459	4,059	600
2% for Losses	69	81	12
Sub-Total (w/losses)	3,528	4,140	612
Water Conservation Reduction	-	(475)	(475)
Total	3,528	3,654	137

When the increased water demand of 137 AFY for the Fiddymment Ranch SPA 3 project is combined with existing (2010) Citywide water demands, the total potable water demand is 28,824 AFY (30,396 AFY total existing demand - 1,709 AFY met through recycled water supplies + 137 AFY additional water demand). When the increased water demand for the proposed project is combined with projected water demand for buildout of the City, the total water demand is 62,746 AFY (62,609 AFY + 137 AFY). As documented in **CHAPTER 9C RECYCLED**

WATER a total of 4,361 AFY of recycled water would be available after implementation of the proposed Fiddymment Ranch Specific Plan Amendment 3 project to offset water supply demands at buildout. This includes 4,510 AFY with the existing City General Plan area (including the recently approved Sierra Vista and Creekview specific plans) and reduction of 149 AFY of recycled water demands as a result of implementing water conservation measures within the Fiddymment Ranch portion of the WRSP. The use of recycled water as an assured water supply source reduces total surface water supply needs for meeting buildout water demands.

To determine if the project would result in a need for expanded or new water entitlements, the potable water demand for existing conditions plus the project and at buildout of the City plus the project is compared against the City's water supply portfolio and the City's ability to obtain American River Water supply in normal/wet year conditions and in critically dry (driest year) conditions. For analysis in critically dry years, supplies evaluated against water demands when surface water supplies are cut back per the WFA or by other reasonably foreseeable cut backs as could be instituted by USBR as a result of the OCAP.

Normal/Wet Year Conditions

As discussed in Section 9A.1 above, the City's water supply in normal and wet years is 58,900 AFY. Including the water demand associated with the proposed project, total potable water demands under existing conditions in the City of Roseville are expected to be 28,824 AFY, and total potable water demands at buildout of the City's General Plan are expected to be 58,385 AFY (62,746 AFY water demands - 4,361 AFY available recycled water supplies). Both the existing and future demands are less than the City's available potable water supply of 58,900 AFY). Therefore the project would not require new or expanded water supply entitlements in normal and wet years. This impact is considered less than significant.

Critically Dry Year Conditions – Water Forum Scenario

Under the WFA, the amount of water available for diversion varies depending on the American River's unimpaired inflow in drier years. Diversions can range from a maximum of 58,900 AFY in normal/wet years to a minimum of 39,800 AFY in critically dry years. Based on a review of historic hydrologic data for the American River, over a period of 100 years and application of cutback criteria within the WFA, it is estimated surface water supplies would have been limited in 15 of those 100 years. Specifically, there were two "driest" years in which the City's diversion from the American River would be limited to 39,800 AFY; six drier years in which the City's diversion from the American River would range from 40,000 to 50,000 AFY; and seven drier years in which the City's diversion from the American River would be greater than 50,000 AFY. These are outlined within the Water Supply Assessment for this project included as Appendix E1 to this Draft Subsequent EIR.

Dry Year Backup Water Supplies

To meet water supply demands during drier and driest years the City may utilize other supplies such as recycled water and groundwater. Recycled water offsets the use of surface water supplies thereby reducing the City's reliance on American River supplies by filling irrigation demands that would otherwise use surface water supplies. Groundwater use has been identified by the City as the source of supply to augment available surface water supplies during drought or emergency conditions. Additionally, the City may implement water

conservation strategies outlined in the Roseville Municipal Code (RMC) when surface water supplies are limited. RMC Section 14.09 outlines five drought stages with specific actions a water customer can implement to reduce water use by between 10 and 50 percent. A driest (critically dry) year would necessitate implementation of the measures associated with a Stage Four drought to reduce water demands to a level that is comparable with available supplies. Drought Stages One, Two and Three would be required during the drier years depending on the level of surface water supply shortfall. If the City is able to accomplish sufficient reductions in demand through implementation of the conservation measures outlined in the RMC, the City's water demands would be commensurate with available supplies, and use of groundwater as a backup source would not be needed. However, for purposes of this analysis, the City conservatively assumes that only a 20 percent reduction in surface water demands would be achieved in all dry year types to evaluate the volume of groundwater that could need to be pumped to supplement water demands. Environmental impacts as a result of groundwater pumping are analyzed in Impact 9A.4, which concludes the project's contribution to the use of groundwater during dry and driest years would have a less-than-significant impact on the groundwater basin.

Dry Year Water Supply Under Existing Conditions

In driest (critically dry) years the City agrees to limit the amount of water diverted from the American River to a minimum of 39,800 AFY. Under existing conditions, with a total potable water demand of 28,824 AFY, the City would not need to obtain new or expanded water supply entitlements to serve the proposed project in drier and driest years. This impact is considered less than significant.

Dry Year Water Supply at City Buildout

As stated above, the total Citywide water demand at buildout of the General Plan and with construction of the proposed project would be 62,746 AFY. After use of recycled water demands, surface water demands at buildout total 58,385 AFY. If implementation of conservation measures achieves a 20 percent reduction in surface water demands (a reduction of 11,677 AFY), the remaining demand would be 46,708 AFY. Based on a review of historic hydrologic data for the American River, over a period of 100 years, there would be 6 years in which groundwater would be required to supplement available surface water supplies. The amount of groundwater pumped in each of these 6 years would vary depending on the year type and the amount of surface water cutbacks, but would not exceed 6,908 AFY. The total amount of groundwater extracted over the life of the proposed Fiddymment Ranch Specific Plan Amendment 3 project to supplement surface water supplies would be 29,772 AF. This was determined based on the 100 year hydrologic record, the need to pump groundwater in only 6 of 100 years, and the annual amount of groundwater required during each of the 6 years. Groundwater pumping would occur only under Drought Stages 3, 4 and 5. As discussed in Impact 9A.4, there is sufficient groundwater available to supply the proposed project in drier and driest years and the project would not require new or expanded water supply entitlements. This impact is considered less than significant.

Dry Year Conditions – USBR OCAP Scenario

As discussed in Section 9A.2 above, the OCAP is an operations plan that coordinates operation of the CVP and SWP with each other and ensures protection of biological resources within the

Sacramento River system and Delta. While the OCAP has not been finalized, this analysis is based on the current draft of the OCAP. It would be speculative for the City to assume any specific modification to the provisions of the current draft of the OCAP. Implementation of provisions of the OCAP could reduce water supplies delivered to the City of Roseville. Based on modeling completed as part of the OCAP process, it is expected that full deliveries of contracted water supplies would occur 58 percent of the time, and reductions in water demand would need to be achieved in the other 42 percent of years. Under this scenario, and again assuming only a 20 percent reduction in demands from conservation efforts, groundwater would be required in 13 of 100 years. As above, annual groundwater needs would vary but would not exceed 6,908 AFY. The total amount of groundwater extracted over the 100 years is estimated at 55,044 AF. As discussed in Impact 9A.4, there is sufficient groundwater available to supply the proposed project in drier and driest years and the project would not require new or expanded water supply entitlements. This impact is considered less than significant.

IMPACT 9A.2:	Impact on American River and Delta Associated with Surface Water Diversion
APPLICABLE POLICIES AND REGULATIONS:	Water Forum Agreement City of Roseville Urban Water Management Plan
SIGNIFICANCE WITH POLICIES AND REGULATIONS:	Less than Significant
MITIGATION MEASURES:	None
SIGNIFICANCE AFTER MITIGATION:	Less than Significant

Water demands from the proposed Fiddymment Ranch SPA 3 are estimated at 4,140 AFY. This amount would be reduced by 475 AFY as a result of water conservation measures incorporated in the project. Additionally, a portion of the water demands associated with the project were previously anticipated under Fiddymment Ranch development described in the WRSP. The proposed project would increase the overall intensity of development within Fiddymment Ranch. The additional amount of water demand represented by the proposed project is 137 AFY as outlined in Table 9A.3 above.

At buildout of the City’s General Plan and the proposed project, water demands, offset by the projected use of recycled water, would be 58,385 AFY (62,746 AFY buildout water demands – 4,361 AFY recycled water use). This volume of water falls within the City’s current WFA wet year water supply entitlement of 58,900 AFY. As discussed in Section 9A.2, the diversion of 58,900 AFY from the American River was analyzed under the Water Forum Agreement EIR certified in October 1999.

Because the WFA EIR is over 10 years old, the City conducted an analysis to confirm or update the determinations related to the impacts on the American River and Delta from the City of Roseville diverting 58,900 AFY from the American River. This analysis is based on current regional water supply issues and conditions. This analysis, completed by Robertson – Bryan Inc. and HDR (*Sierra Vista Specific Plan EIR Technical Memorandum: Effects of Changed Water Management Operations on Fisheries and Water Quality Impacts Previously Disclosed in the Water Form Agreement EIR*, October 2009) is referred to as the RBI Study and is provided as Appendix E3 to this Draft Subsequent EIR. The changed conditions documented in the RBI Study include

CVP operation changes implemented since the WFA EIR as well as reasonably foreseeable actions that may impact CVP/SWP operations.

The Delta-related impacts that were re-analyzed are the 17 individually numbered impacts for Fisheries Resources and Aquatic Habitat and the two individually numbered impacts for Water Quality addressed within the WFA EIR and listed below. In all cases, the RBI Study confirmed that the analysis and conclusions in the WFA EIR are still valid under the changed conditions and that no new or substantially more severe significant findings would occur. As such the mitigation measures identified within the WFA EIR for these impacts are still valid. The mitigation measures applicable to Roseville for these impacts are provided in the excerpt from the WFA EIR Executive Summary included in Appendix E4 to this Draft Subsequent EIR. The proposed Fiddymment Ranch Specific Plan Amendment 3 project would not increase the extent or severity of these impacts, and would not alter the mitigation requirements. This impact is considered less than significant.

Fisheries Impacts

- ❖ Folsom Reservoir and Lake Natoma:
 - ◆ Impacts to Folsom Reservoir Coldwater and Warmwater Species (WFA EIR Impacts 4.5-1 and 4.5-2),
 - ◆ Impact to Coldwater and Warmwater Species in Lake Natoma (Impact 4.5-3), and
 - ◆ Temperature Impacts to Nimbus Fish Hatchery Operations and Fish Production (Impact 4.5-4).
- ❖ Lower American River:
 - ◆ Impact to Fall-run Chinook Salmon (WFA EIR Impact 4.5-5).
 - ◆ Impact to Steelhead (WFA EIR Impacts 4.5-6).
 - ◆ Flow- and Temperature-Related Impacts to Splittail (Impact 4.5-7).
 - ◆ Flow- and Temperature-Related Impacts to American Shad (Impact 4.5-8) and Striped Bass (Impact 4.5-9).
- ❖ Other CVP Reservoir Storage: Impacts to Coldwater and Warmwater Species in Shasta Reservoir (WFA EIR Impacts 4.5-10 and 4.5-11), Trinity Reservoir (WFA EIR Impacts 4.5-12 and 4.5-13), and Keswick Reservoir (WFA EIR Impacts 4.5-14).
- ❖ Sacramento River:
 - ◆ Flow-Related Impacts to Sacramento River Fisheries (WFA EIR Impacts 4.5-15).
 - ◆ Temperature-Related Impacts to Sacramento River Fisheries (WFA EIR Impacts 4.5-16).
- ❖ Delta: Impacts to Delta Fish Populations (WFA EIR Impacts 4.5-17).

Water Quality Impacts

- ❖ Lower American River and Folsom Reservoir Water Quality (Impact 4.4-1)
- ❖ Lower Sacramento River and Delta Water Quality (Impact 4.4-2)

IMPACT 9A.3:	Require New Or Expanded Water Treatment Facilities
APPLICABLE POLICIES AND REGULATIONS:	Water Master Plan City of Roseville Improvement Standards
SIGNIFICANCE WITH POLICIES AND REGULATIONS:	Less than Significant
MITIGATION MEASURES:	None
SIGNIFICANCE AFTER MITIGATION:	Less than Significant

Water treatment for the City of Roseville is provided at the Barton Road WTP. The existing treatment plant has a rated capacity 100 mgd, and experienced peak demands of 58 mgd in July 2006. As documented above, potable water demands at buildout of the City and the proposed Fiddymment Ranch Specific Plan Amendment 3 project are estimated at 58,385 AFY. This equates to an average day treatment demand of 52.1 mgd.

Peaking Factors

Peaking factors are used to calculate water demand expected under various conditions such as maximum day and peak hour periods. The maximum day demand is used to evaluate and size water delivery facilities; the peak hour peaking factor is used to evaluate storage capacity needs. For analysis of raw water delivery facilities (USBR pumping capacity and water treatment plant capacity), a maximum day demand factor of 1.83 is used. This factor is based upon historical data representing actual water demands over a 15-year period.

Treatment Plant Capacity Needs

The average day water treatment demand for buildout of the City and the SVSP is 52.1 mgd. Using the maximum day peaking factor of 1.83 described above, a water treatment plant capacity of 95.4 mgd would be required. The City’s water treatment plant currently has a capacity of 100 mgd. Because treatment plant capacity exceeds anticipated buildout plus project demands, this impact is considered less than significant.

IMPACT 9A.4:	Deplete Groundwater Supplies
APPLICABLE POLICIES AND REGULATIONS:	City of Roseville General Plan Water Forum Agreement Groundwater Management Plan
SIGNIFICANCE WITH POLICIES AND REGULATIONS:	Less than Significant
MITIGATION MEASURES:	None
SIGNIFICANCE AFTER MITIGATION:	Less than Significant

Development of the proposed Project would increase the demand for water supplies, and in driest and some drier years, the City would meet the increased demand in part through groundwater pumping. Groundwater may also be used as an emergency backup for recycled water supplies in accordance with City policy.

When a well first begins extracting groundwater from an aquifer’s groundwater storage, it results in a localized cone of depression that fluctuates with operation of the well. When

extraction decreases, the aquifer typically recharges and returns to its pre-extraction condition. Over time, a well can also induce an incremental decline in regional groundwater elevations. Large cones of depression can form in areas where multiple groundwater extraction wells are in operation. The use of groundwater, although relatively infrequent, could affect aquifers in an area by altering groundwater elevations, which could in turn, affect recharge conditions, change aquifer storage characteristics, result in localized well impacts, and/or cause areas of poorer quality groundwater to shift.

The following analysis of the effects on the groundwater basin of extracting groundwater to provide potable water supplies is based in part on a groundwater impact analysis prepared by MWH in June 2003 (*Groundwater Impact Analysis for Proposed Reason Farms Land Retirement Plan*). That report was included as an Appendix to the Creekview Specific Plan EIR and is available for review at the City of Roseville website. The MWH report used the *North American River and Sacramento County Combined Integrated Groundwater and Surface Water Model* (IGSM) to simulate groundwater conditions.

Reason Farms is a 1,754 acre City owned property located northwest of the WRSP Area. Prior to City acquisition of the property in early 2003, Reason Farms was used for the agricultural production of rice. It is estimated that approximately 6,483 AFY of groundwater was extracted from the aquifer underlying the property and applied to 1,080 acres of the land for irrigation purposes. The major portion of this water was lost to evapotranspiration, while a smaller amount returned to the groundwater basin through deep percolation. Since the City acquired the property in 2003, rice farming has been discontinued and the property is now dry farmed resulting in “banked” groundwater. However, approximately up to 700 AFY may still be used to support cattle ranch and dry farming operations. The following assumptions were made for the analysis of mitigating dry-year and emergency groundwater use, which was assumed to be accomplished by revised farming practices at the Reason Farms property:

- ❖ 1,080 acres of land removed from rice production
- ❖ 6,483 AFY of groundwater formerly extracted for rice irrigation demand
- ❖ 2,632 AFY of groundwater used for irrigation returned to the basin by deep percolation
- ❖ 700 AFY of groundwater used for cattle or dry farming operations
- ❖ Net 3,151 AFY of groundwater recharge “banked” for beneficial uses (6,483 AFY - 2,632 AFY - 700).

Water Forum Scenario

As discussed in under Impact 9A.1, it is estimated that groundwater would need to be used in 6 years out of 100 to supplement available surface water supplies under the Water Forum scenario. This is based on the water demands for the proposed project and buildout of the City’s General Plan as well as recycled water use and a 20 percent reduction in demand due to implementation of conservation measures in dry years. If groundwater pumping is needed to augment surface water supplies, it is estimated that the amount of groundwater pumped in a single per year would not exceed 6,908 AFY. The total amount of groundwater pumped in the 100-year analysis period is estimated not to exceed 29,772 AF. The amount of banked groundwater obtained through following Reason Farms is estimated to be 296,194 AF (banking assume to occur in 94 years of 100 years for a total of 3,151 AFY banked). After subtracting the

amount of groundwater used for emergency backup recycled water supply (estimated at 220 AF) and the amount used in dry years from the amount of banked groundwater, 266,202 AF would remain in the groundwater basin (296,194 AF – 220 AF – 29,772AF).

USBR OCAP Scenario

Under the OCAP projected deliveries, it is expected that groundwater pumping would be necessary in 14 out of 100 years. The estimated amount of groundwater per year needed to augment surface water supplies would vary based on actual surface water supplies but would not exceed 6,908 AFY, and would total 55,044 AF for the 100-year analysis period. The amount of banked groundwater obtained through following Reason Farms is estimated to be 270,986 AF (banking assumed to occur in 86 years out of 100 years with a total of 3,151 AFY banked). After subtracting both the amount of groundwater used for emergency backup recycled water supplies and the amount used in dry years from the amount of bank groundwater, 215,722 AF would remain in the groundwater basin (270,986 AF – 220 AF – 55,044 AF).

9A.5 MITIGATION MEASURES

Require New Or Expanded Water Supply Entitlements

This impact is determined to be less than significant. No mitigation measures are necessary.

Impact on American River and Delta Associated with Surface Water Diversion

This impact is determined to be less than significant. No mitigation measures are necessary.

Require New Or Expanded Water Treatment Facilities

This impact is determined to be less than significant. No mitigation measures are necessary.

Deplete Groundwater Supplies

This impact is determined to be less than significant. No mitigation measures are necessary.