3.17 WATER SUPPLY

3.17.1 AFFECTED ENVIRONMENT

Presently, there are no public water supply facilities on the SPA. The Sacramento County Water Agency (SCWA) would provide water supplies to the SPA through its Zone 40 conjunctive-use water supply system. The SPA is identified as a subarea within Zone 40 known as the North Service Area (NSA). The water supplies necessary to serve the NSA area, including the SPA, were considered and evaluated as part of the *2002 Zone 40 Water Supply Master Plan EIR* (Zone 40 WSMP EIR) (SCWA 2004) and specifically in the *Revised Sunrise Douglas Community Plan/Sunridge Specific Plan Long-Term Water Supply Plan Draft EIR* (AECOM 2011). These documents are hereby incorporated by reference into this DEIR/DEIS and relevant portions of these documents are summarized in this section as they relate to the SunCreek Specific Plan project.

SCWA would provide water service to the SPA in three phases. Phase 1 water service would involve using available groundwater supplies from the North Vineyard Well Field (NVWF) and the Mather Housing groundwater system until NSA water demands approach the capacity of these groundwater wells. Phase 2 water service would entail using available SCWA groundwater supplies and surface water delivered by the North Service Area Pipeline (NSAP). Phase 3 water service would not occur until the water demands of the NSA begin to approach the capacity of the NSAP. At that time, SCWA anticipates that the Vineyard Surface Water Treatment Plant (WTP), NVWF, and Anatolia WTP would be expanded to their full capacity to meet water demands of the NSA, including the SPA. (MacKay & Somps 2011a:6) Furthermore, three groundwater wells and a water treatment plant on the SunCreek SPA are proposed as part of this project in order to provide an additional source of water supply (see Exhibit 2-8 in Chapter 2, "Alternatives").

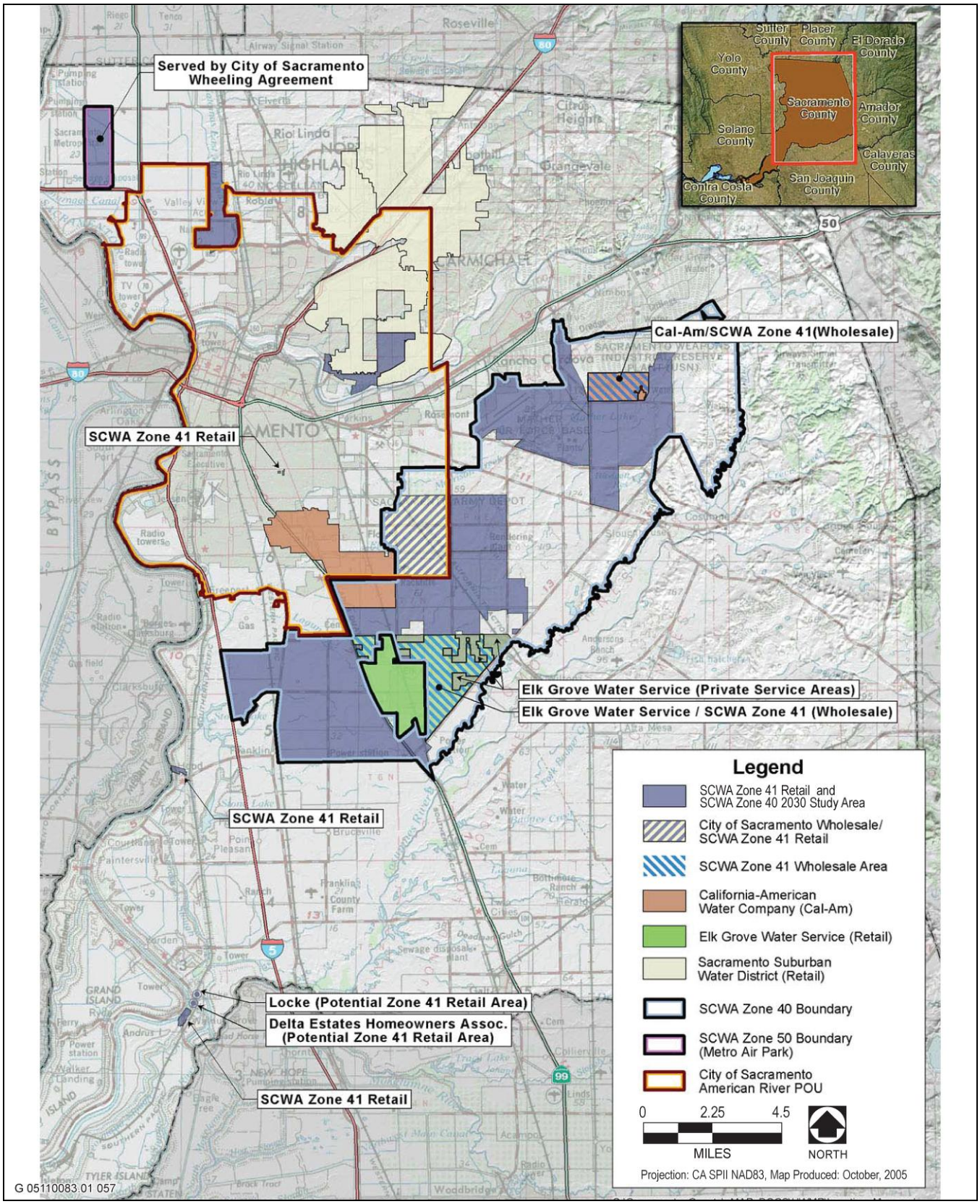
The following section identifies the existing and projected water demands for SCWA Zone 40, including the NSA; identifies available SCWA Zone 40 surface and groundwater supplies to meet those demands; and discusses the reasonable likelihood of water supplies to meet project demands. Impacts are evaluated in relation to the increased demand for potable and nonpotable water associated with the project and actions needed to provide the service that could potentially lead to physical environmental effects.

SACRAMENTO COUNTY WATER AGENCY

SCWA was created in 1952 for the purpose of controlling and conserving storm, flood, and other surface waters for any beneficial use for lands and inhabitants and producing, storing, transmitting, and distributing groundwater (SCWA 2005:1-2). The SCWA Board of Directors created zones within the agency to finance, construct, acquire, reconstruct, maintain, operate, extend, repair, or otherwise improve any work for common benefit to each zone. There are currently eight zones within the SCWA: 11A, 11B, 11C, 12, 13, 40, 41, and 50.

The City of Rancho Cordova and a portion of the City's planning area are located within SCWA's Zone 40. Zone 40 was created in 1985 as a special benefit zone to supplement available groundwater supplies to support new and projected development within the zone and to establish the framework for a conjunctive use program would utilize both surface water and underlying groundwater (SCWA 2005:1-2). Zone 40 consists of approximately 86,000 acres of agricultural, residential, and industrial land in central Sacramento County (Exhibit 3.17-1). Zone 40 is bordered by the County's Urban Services Boundary on the northeast, east, and southeast. The northern edge of the 100-year floodplain of Deer Creek is also located to the east and southeast. Interstate 5 forms the western boundary and the Douglas Road and Grant Line Road areas form the southern boundary (SCWA 2004:3-1).

There are three primary planning documents that work together to form the planning basis for the Zone 40 service area: the *2005 Zone 40 Water Supply Master Plan* (Zone 40 WSMP) (SCWA 2005), the *2010 Zone 41 Urban Water Management Plan* (Zone 41 UWMP) (SCWA 2011a), and the *Zone 40 Water System Infrastructure Plan* (Zone 40 WSIP) (November 2006). These documents are briefly summarized below.



Source: SCWA 2005; Adapted by AECOM 2010

Zone 40 and 41 Service Areas, and 2030 Study Area **Exhibit 3.17-1**

SCWA Water Supply Master Plan

SCWA is a signatory to the Water Forum Agreement (WFA), which is a plan that provides for the effective long-term management of the Sacramento region's water resources. The WFA was formulated based on the two coequal objectives of the Water Forum: (1) provide a reliable and safe water supply for the region's economic health and planned development through the year 2030; and (2) preserve the fishery, wildlife, recreational, and aesthetic values of the Lower American River (Sacramento City-County Office of Metropolitan Water Planning 1999, Water Forum 2000).

As a signatory to the WFA, SCWA undertook a comprehensive update of its water supply planning process in response to the requirements of the WFA through the Zone 40 WSMP, which was adopted in February 2005. SCWA has agreed to ensure that a series of actions and commitments related to surface-water diversions, dry-year supply, water conservation, and groundwater management—necessary steps to achieve WFA objectives—are integrated into future growth and water planning activities in its service area. The Zone 40 WSMP provides a flexible plan of water management options that can be implemented and modified if conditions that affect the availability and feasibility of water supply sources change in the future. The goal of the Zone 40 WSMP is to carry out a conjunctive-use program, which is defined as the coordinated management of surface water and groundwater supplies to maximize the yield of available water resources. The conjunctive-use program for Zone 40 includes the use of groundwater, surface water, remediated water, and recycled water supplies. It also includes a financing program for the construction of a new surface-water diversion structure; a surface-water treatment plant; water conveyance pipelines; and groundwater extraction, treatment, and distribution facilities.

The Zone 40 WSMP evaluates several options for facilities to deliver surface water and groundwater to development to a subarea within Zone 40 known as the 2030 Study Area, as well as the financing mechanisms to provide water to the 2030 Study Area. (City of Rancho Cordova 2006a:18). The 2030 Study Area encompasses approximately 46,600 acres (including portions of the cities of Elk Grove and Rancho Cordova, and the SPA) where development of industrial, commercial, office, and residential land uses is expected to occur and where demand for water is expected to be concentrated during the planning horizon of the WSMP (i.e., 2030) (see Exhibit 3.17-1). (City of Rancho Cordova 2006a:17).

2010 Zone 41 Urban Water Management Plan

The Zone 41 UWMP was prepared by SCWA and adopted by the SCWA Board of Directors on December 6, 2005. The plan addresses water supply and demand issues, water supply reliability, water conservation, water shortage contingencies, and recycled-water usage for the areas within Sacramento County where Zone 41 provides retail water services, including the Zone 40 service area and other areas outside of Zone 40 where Zone 41 has contracts to provide water (e.g., Zone 50, Sacramento Suburban Water District). Zone 41 is responsible for the operations and maintenance of all the water supply facilities within the defined service area and retails and wholesales water to its defined service area and to agencies where agreements are in place to purchase water from SCWA. The water demands for the Sunrise Douglas Community Plan/Sunridge Specific Plan (SDCP/SRSP) project (which include the SPA), which were identified in the Zone 40 WSMP, are included in the Zone 41 UWMP.

Because SCWA's conjunctive-use groundwater program would be implemented only within Zone 40, the Zone 41 UWMP presents information about projected water supply and demand separately for areas within Zone 40 and areas outside of Zone 40. However, the Zone 41 UWMP does not specifically describe how projected future water supplies would be allocated within the Zone 40 region (e.g., how water would be allocated to the City of Rancho Cordova).

SCWA is currently preparing its 2010 Zone 41 UWMP, which will include new requirements for water conservation as set forth in the Water Conservation Act of 2009 (Senate Billx7-7). It is anticipated that the 2010 Zone 41 UWMP will be an updated and enhanced version of SCWA's 2005 Zone 41 UWMP.

SCWA anticipates the 2010 Zone 41 UWMP will be submitted to the California Department of Water Resources (DWR) by July 2011.

Zone 40 Water System Infrastructure Plan

As a follow up to the 2005 Zone 40 WSMP, SCWA prepared the Zone 40 WSIP, which addresses how identified 2030 water supplies addressed in both the Zone 41 UWMP and the Zone 40 WSMP would be allocated among users within its service area. The purposes of this WSIP are to describe and quantify the facilities necessary to extract, treat, and convey groundwater to the Zone 40 service area; to provide water purchased from the City of Sacramento to the portion of Zone 40 within the City of Sacramento American River Place of Use (POU); to convey surface water for treatment at the Vineyard Surface WTP; and to deliver wholesale treated groundwater and surface water to retail water purveyors outside of the Zone 40 service area (SCWA 2006:1-3).

The WSIP provides the most up-to-date information on Zone 40's water supplies, demands, and infrastructure; provides project-level detail that is necessary for implementation of the preferred pipeline alignment alternatives that were identified in the 2005 Zone 40 WSMP; and it fills in the gaps of associated smaller infrastructure requirements, including a description of facility construction and phasing as well as operational requirements from existing conditions through ultimate buildout of the water system.

Existing and Projected Water Demands for SCWA Zone 40

As part of the Zone 40 WSMP, water demand was calculated for various land uses within the 2030 Study Area. As discussed above, the 2030 Study Area includes areas where development of industrial, commercial, office, and residential land uses is expected to occur and where demand for water is expected to be concentrated during the planning horizon of the Zone 40 WSMP (i.e., 2030). (City of Rancho Cordova 2006a:17).

Land use information for the Zone 40 2030 Study Area included tentative maps, specific plans, community plans, and general plans. The unit water demand factors are derived from the unit water demands developed for the 1995 Zone 40 Master Plan Update and the build-out water demands used in the Water Forum (SCWA 2006:3-2). The year 2000 land use demand factors assume a 12% level of water conservation and the 2030 land use demand factors reflect the Water Forum's 25.6% conservation demand reduction goal (SCWA 2005:2-2). Table 3.17-1 identifies existing and projected land uses and water demands for the years 2000 and 2030 within SCWA's Zone 40 2030 Study Area.

The Zone 40 WSIP was prepared in 2006 to provide the most up-to-date information on Zone 40's water supplies, demands, and infrastructure. The Zone 40 WSIP divides the Zone 40 2030 Study Area into three major subareas for planning purposes. From east to west, these areas are identified as: the North Service Area (NSA), the Central Service Area (CSA), and the South Service Area (SSA), respectively. The discussion that follows summarizes information contained within the WSIP.

The NSA is located in the northern portion of Zone 40 and consists of a portion of the City of Rancho Cordova's planning area and the areas identified as Mather Field, Sunrise Corridor, Sunrise Douglas Community Plan (which includes the SPA), and Rio del Oro (including the California-American Water Company [Cal-Am] portion of the planning area where wholesale Zone 40 water supplies would be delivered) (SCWA 2006:2-5).

The CSA is located in the central portion of Zone 40 and consists of the areas identified as North Vineyard Station, Florin Vineyard, Vineyard Springs, East Elk Grove, and the Elk Grove Triangle. The CSA also includes the Vineyard Surface WTP (SCWA 2006:2-12).

The SSA is located in the southern portion of Zone 40 and consists of the areas identified as Laguna, Laguna West, Lakeside, Laguna Stonelake, East Franklin, Laguna Ridge, the Elk Grove Promenade, Sterling Meadows, and the Southeast Study Area (SCWA 2006:2-15).

Table 3.17-1
Current and Projected Water Demands for SCWA Zone 40

Land Use Category	Year 2000 Land Use and Water Demand			Year 2030 Land Use and Water Demand		
	Unit Water Demand Factors (af/ac/yr)	Land Use (acres)[2]	Water Demand (afy)	Unit Water Demand Factors (af/ac/yr)	Land Use (acres)[2]	Water Demand (afy)
Rural Estates	1.57	304	477	1.33	718	955
Single-Family	3.40	3,387	11,516	2.89	14,867	42,966
Multifamily—Low Density	4.36	285	1,243	3.70	1,173	4,340
Multifamily—High Density	4.85	0	0	4.12	0	0
Commercial	3.24	254	823	2.75	1,042	2,866
Industrial	3.19	1,257	4,010	2.71	2,395	6,490
Industrial—Unutilized	0.00	0	0	0.00	1,463	0
Public	1.22	692	844	1.04	4,349	4,523
Public Recreation	4.08	400	1,632	3.46	2,865	9,913
Mixed Land Use	2.95	840	2,478	2.51	12,985	32,592
Developed Land Use		**7,419**	**23,023**		**41,857**	**104,645**
Right-of-Way	0.25	726	182	0.21	2,526	530
Water Use Subtotal			**23,205**			**105,175**
Water System Losses (7.5%)			1,740			7,888
Zone 40 Water Production			**24,945**			**113,063**
Urban and rural areas not currently being served by Zone 40		5,127	NA		0	NA
Vacant		27,583	NA		2,225	NA
Agriculture[1]		5,766	NA		12	NA
Total Land and Water Use		**46,621**	**24,945**		**46,620**	**113,063**

Notes: af/ac/yr = acre-feet per acre per year; afy = acre-feet per year; NA = not applicable; SCWA = Sacramento County Water Agency.

[1] SCWA Zone 40 does not supply water to meet agricultural demand within its Zone 40 service area. Agricultural water demand within Zone 40 would be in addition to urban water demand.

[2] Minor discrepancies in acreage totals are a result of rounding in land use data.

Source: SCWA 2005:2-5

As shown in Table 3.17-2, the 2030 water demands are estimated in the Zone 40 WSIP to be 103,710 acre-feet per year (afy) within SCWA's Zone 40 2030 Study Area. This decrease in water demands from the previously prepared Zone 40 WSMP can be attributed to refined land use information for each service area (SCWA 2006:3-5).

North Service Area

The NSA includes areas identified as the Sunrise Corridor, Sunrise Douglas Community Plan, Mather Field, Rio del Oro within Zone 40, and Rio del Oro within Cal-Am where wholesale of Zone 40 water supplies would be delivered (City of Rancho Cordova 2006a:32; SCWA 2006:2-5). As shown on Table 3.17-3, the current estimated water demand in the NSA is 2,404 afy and the total estimated water demand at full build-out of the NSA (year 2030) is anticipated to be 33,382 afy. The SPA is located within the Sunrise Douglas Community Plan area and SCWA estimated that the water supply demand for the SPA would be 3,176 acre-feet per year (afy) by 2030 (SCWA 2011b:8). However, the water supply assessment (WSA) prepared by SCWA for the SunCreek Specific Plan Project (attached as Appendix V) estimated that water supply demand for the Proposed Project Alternative would be 3,058 afy (see Impact 3.15-1).

Table 3.17-2
Current and Projected Water Demand by Zone 40 2030 Study Area Service Area[1]

Demand Region	Existing Demand		Build-Out Demand	
	Annual Average Demand (afy)	Maximum Day Demand (mgd)	Annual Average Demand (afy)	Maximum Day Demand (mgd)
North Service Area	2,404	4	32,982	59
South Service Area	8,115	14	39,095	70
Central Service Area	14,288	26	31,633	56
Total Demand	**24,807**	**44**	**103,710**	**185**

Note: afy = acre-feet per year; mgd = million gallons per day

[1] The total current and projected water demands exclude 4,400 afy of recycled water demand.

Source: SCWA 2006:3-3

Table 3.17-3
Existing and Projected Future Water Supply and Demand in the North Service Area

Demand Region	Existing Demand		Build-Out Demand	
	Annual Average Demand (afy)	Maximum Day Demand (mgd)	Annual Average Demand (afy)	Maximum Day Demand (mgd)
Mather Field	1,327	2.37	7,624	13.61
Rio del Oro – Cal-Am[1]	-	-	3,917	6.99
Rio del Oro – Zone 40[1]	-	-	4,920	8.79
Sunrise Corridor	1,077	1.92	1,077	1.92
Sunrise Douglas Community Plan[2]	-	-	15,844	27.66
Total Demand	**2,404**	**4.29**	**33,382**	**58.97**

Note: afy = acre-feet per year; mgd = million gallons per day

[1] Water supplies for Rio del Oro would be met with 8,900 afy of groundwater extraction and treatment (GET)–Remediated Water.

[2] The SPA is located within the Sunrise Douglas Community Plan area. The water supply demand for the SPA was estimated to be 3,176 afy by 2030; however, the WSA determined the actual water supply demand for the project site would be 3,058 afy.

Sources: City of Rancho Cordova 2006a: 35; SCWA 2011b:8

Groundwater supplies for the NSA are currently provided by the NVWF and Mather Housing groundwater system. The NVWF is located along both sides of Excelsior Road, between Florin Road and Elder Creek Road. This well field would provide for the extraction of up to 10,000 afy of groundwater at buildout to serve existing or proposed development within Zone 40 service area, including the NSA, on a first come, first served basis. These first three NVWF wells are operational and are capable of producing approximately 3,600 afy. SCWA has designated one of the three wells as an emergency backup well to increase water supply availability and reliability.

The Mather Housing groundwater system is located west of Eagles Nest Road and southwest of Douglas Road and currently serves development in and around Mather Field as well as development along the Sunrise Boulevard corridor. The Mather Housing groundwater system consists of two groundwater wells, a 6.0-million gallon per day (mgd) groundwater treatment plant, and one 0.5-mgd storage tank. The Mather Housing groundwater system is capable of producing 6,722 afy (SCWA 2006:4-7).

To meet water demands of the NSA, including the SPA, SCWA intends to construct three groundwater wells, the 4.0-mdg SunCreek WTP, a 1.5-mgd storage tank, and booster pump stations in the southern portion of the SPA east of Sunrise Boulevard and south of Kiefer Boulevard (see Exhibit 2-8 in Chapter 2, "Alternatives"). The three groundwater wells, one of which would serve as a back-up, could extract up to 4,484 afy of groundwater. The SunCreek groundwater wells and water treatment plant may be used only in the summer months as a peaking and backup facility once sufficient surface water is available to serve the NSA. (SCWA 2006:4-9 and 6-11).

As shown in Table 3.17-4, the estimated long-term average annual and maximum annual groundwater supply for the NSA are 10,601 afy (9.5 mgd) and 21,202 afy (19.0 mgd), respectively.

Table 3.17-4
Existing and Proposed Groundwater Supplies for NSA

Component of Water Supply	Average Annual Supply (afy)	Maximum Annual Supply (afy)	Average-Day Supply (mdg)	Maximum-Day Supply (mgd)
North Vineyard Well Field	5,000	10,000	4.5	9.0
Mather Housing Well Field	3,361	6,722	3.0	6.0
SunCreek Well Field	2,240	4,480	2.0	4.0
Total Supplies	**10,601**	**21,202**	**9.5**	**19.0**

Notes: NSA = North Service Area; afy = acre-feet per year; mgd = million gallons per day
Sources: SCWA 2006:7-2, MacKay and Somps 2011a

Surface water would be diverted to the NSA from the Sacramento River via the Freeport Regional Water Project (FRWP) facilities and conveyed to the Vineyard Surface WTP for treatment. Treated water would then be conveyed to the NSA through the NSAP (see "Water Conveyance and Treatment Facilities," below). In the long term, SCWA anticipates the majority of water demands in the NSA would be met with surface water. However, the year-to-year mix of surface and groundwater varies depending on a large number of variables and SCWA would adjust the amount of groundwater and surface water as necessary to meet the demands of the NSA as part of its conjunctive use program (described further below) (MacKay & Somps 2011a:8, SCWA 2006:4-31).

Water Supply Sources for SCWA Zone 40

The Water Forum has defined conjunctive use as "the planned joint use of surface and groundwater to improve overall water supply reliability." Since its formation, Zone 40 has had as its goal the development of a conjunctive-use water supply system. As such, the areas inside Zone 40 are served conjunctively with groundwater (pumped from the Central Basin), surface water, and recycled water. Available surface-water supplies would be maximized in wet years; groundwater supplies would be maximized in dry years through increased pumping at SCWA's groundwater facilities. In all consecutive dry years, water-demand management programs would be implemented to a higher degree (e.g., greater conservation, reduced outdoor use) to reduce the potential impacts from increased extraction of groundwater.

Table 3.17-5 summarizes SCWA's Zone 40 current and planned water supplies for normal water years (i.e., years when rainfall and water supply represent the long-term average). The following discussion identifies and characterizes the water supply sources that will be used to meet projected demands within Zone 40.

Surface-Water Supplies for SCWA Zone 40

SCWA surface-water supplies come from the American River. The components of the surface-water supply in Zone 40 are shown in Table 3.17-6 and described below. SCWA's total estimated long-term average annual supply of surface water (existing entitlements and proposed future entitlements) is 75,751 afy.

Table 3.17-5
Water Supplies for SCWA Zone 40[1]

Component of Water Supply	Average Annual Supply (afy)
Surface Water[2]	75,751
Groundwater	40,900
Recycled Water	4,400
Total Supplies	**121,051**

Notes: afy = acre-feet per year; SCWA = Sacramento County Water Agency

[1] This table presents Zone 40 water supply sources only. It does not account for any available GET–Remediated Water supply that would be specifically provided to the Rio del Oro Specific Plan area.

[2] The total estimated average annual supply of surface water is the sum of existing entitlements and proposed future entitlements.

Sources: SCWA 2005: 5-6, 2005b

Table 3.17-6
Existing and Proposed Supplies of Surface Water for SCWA Zone 40

Component	Water Source	Existing or Proposed Future Supply	Entitlement Amount (afy)	Estimated Long-Term Average Supply (afy)[1]
SMUD Assignment	American River	Existing	30,000	26,000
"Fazio" Water (PL 101-514)	American River	Existing	15,000	13,551
Appropriative Water Supplies (Permit 21209)	American River	Existing	44,800	21,700
Other Transfer-Water Supplies	American River	Planned[2]	Undetermined	5,200
City of Sacramento Wholesale Water Agreement to Supply that Portion of Zone 40 within the City's American River POU	American River	Existing	9,300	9,300
Total Surface Water				**75,751**

Notes: SCWA = Sacramento County Water Agency; SMUD = Sacramento Municipal Utility District; afy = acre-feet per year; PL = Public Law; POU = Place of Use.

[1] The estimated average long-term supply is the projected water supply available based on an average of wet, normal, and dry water years.

[2] Per SCWA, these agreements are currently being negotiated.

Sources: SCWA 2005:5-3, 5-6

SMUD Assignment

Under the terms of a three-party agreement (SCWA, Sacramento Municipal Utility District [SMUD], and the City of Sacramento), the City of Sacramento provides surface water to SMUD for use at two of SMUD's cogeneration facilities. SMUD, in turn, provides 15,000 afy of its CVP contract water to SCWA for municipal and industrial use.

Based on SMUD's purveyor-specific agreements under the WFA, a second 15,000 afy of surface water is provided to SCWA for municipal and industrial uses, and to enable SCWA to construct groundwater facilities to provide water needed to meet SMUD's demand of up to 10,000 afy at its Rancho Seco cogeneration facility during water shortages in dry years. The amount of water required by SMUD is based on hydrologic year type and the amount of cut back SMUD may experience on their remaining CVP contract. Delivery of this water occurs through the Folsom South Canal (SCWA 2006:3-7).

SMUD's dry year demands are determined based on the frequency of dry years when additional water supplies are required to meet demands. Modeling studies conducted for the FRWP indicated that the frequency of SMUD demand is low, occurring in only 20% of years, with the need for the full 10,000 afy occurring in only 3% of years. SCWA expects that SMUD's dry year demands can be met through the unused portions of the SMUD CVP assignment (through 2030) (SCWA 2006:3-7, 3-8).

Central Valley Project Water (Public Law 101-514 ["Fazio Water"])

SCWA executed a CVP water-service contract pursuant to Public Law 101-514 (referred to as "Fazio water") that provides a permanent water supply of 22,000 afy, with 15,000 afy allocated to SCWA and 7,000 afy allocated to the City of Folsom. SCWA began taking delivery of the Fazio water in 1999 at the City of Sacramento's Franklin connection through a long-term wheeling agreement with the City of Sacramento. This contract remains in effect until it expires in 2024.

Appropriative Water Supplies

The State Water Resources Control Board (SWRCB) appropriates water from the American River to SCWA under Permit 21029 (This water is considered "intermittent water" that typically would be available during normal years or wet years (i.e., years when rainfall, and hence water supply, are greater than average). This water is used to meet system demand, and it could possibly be used for future groundwater recharge through recharge-percolating groundwater basins or direct injection of surface water into the aquifer. The maximum, minimum, and average annual use of appropriative water are 44,800 acre-feet (af), 0 af, and 21,700 af, respectively. In close to 30% of the years, 12,000 af or less of appropriative water is used. The FRWP and Vineyard Surface WTP would be used to deliver this surface water.

City of Sacramento's American River Place of Use Agreement

The City of Sacramento provides wholesale American River water to SCWA for use in a portion of the SCWA 2030 Study Area that lies within the City of Sacramento's American River POU. The estimated long-term average volume of water that would be used by SCWA within this POU would be approximately 9,300 afy.

Other Transfer Supplies

SCWA is pursuing purchase and transfer agreements with other entities north of its service area in the Sacramento River basin. SCWA's estimated long-term average use of these water supplies would be approximately 5,200 afy. This water would be purchased only in dry and critically dry years. None of these water transfer agreements have been executed at this time, as none are needed for the foreseeable future; they are therefore still in the preliminary negotiation stage.

Recycled-Water Component

"Recycled water" refers to wastewater treated to a tertiary level—filtration and disinfection (Title 22, unrestricted use)—and is used in areas where nonpotable water is allowed, such as landscape irrigation at parks, schools, and rights-of-way. Approximately 4,400 afy of recycled water is currently provided to SCWA by the Sacramento Regional County Sanitation District (SRCSD). This water is used within the Zone 40 service area to offset demand by parks and for other nonpotable uses.

Groundwater Supplies within SCWA Zone 40

In Sacramento County, three groundwater subbasins have been identified: the North Area (the area north of the American River), Central Area (roughly the area between the American and Cosumnes Rivers), and South Area (generally the area south of the Cosumnes River). Zone 40 lies entirely within the Central Area (i.e., the Central Basin). Technical studies conducted in support of the WFA provided a basis for defining the negotiated

sustainable yield for each of the three Sacramento County groundwater subbasins. Based on negotiated levels of acceptable impacts associated with operating the basins at specified extraction volumes, the WFA negotiated a sustainable long-term average annual yield for the Central Area of 273,000 afy, including groundwater pumping in the Central Basin.

SCWA currently exercises, and will continue to exercise, its rights as a groundwater appropriator and will extract water from the Central Basin for the beneficial use of its customers. As a signatory to the WFA, SCWA is committed to adhering to the long-term average sustainable yield of the Central Basin (i.e., 273,000 afy) recommended in the WFA. In 2005, the total groundwater pumping (i.e., urban and agricultural pumping) within the Central Basin was approximately 248,500 afy, of which approximately 59,700 afy is pumped within Zone 40 (21,900 afy to meet agricultural demand; 37,800 afy to meet urban demand) (SCWA 2005). The remaining groundwater is pumped by the City of Sacramento, Elk Grove Water Service, Cal-Am, Golden State Water Company, and private and agricultural pumpers. Groundwater pumping volumes from the Central Basin in 2030 are projected to range from 235,000 afy to 253,000 afy for urban and agricultural demands (SCWA 2005). Of that amount, it is projected that SCWA Zone 40 would pump an average of 40,900 afy to meet urban water demand within Zone 40 through the year 2030 (Table 3.17-7).

Table 3.17-7
Existing and Projected Average Groundwater Supply in Zone 40

Water Source	Estimated Maximum Use (afy)	Estimated Long-Term Average Use (afy)	Reliability
Groundwater extracted from the Central Basin pursuant to the Zone 40 WSMP	69,900	40,900	High[1]

Notes: afy = acre-feet per year; Central Basin = Central Area groundwater subbasin; WSMP = *Water Supply Master Plan*.

[1] The reliability of this water source is considered "high" because Sacramento County Water Agency (SCWA) is a groundwater appropriator and existing and projected future pumping scenarios would not exceed the sustainable yield of the Central Basin.

Source: SCWA 2005:5-3

SCWA ZONE 40 WATER SUPPLIES AND DEMANDS

The Zone 41 UWMP addresses water supply and demand issues, water supply reliability, water conservation, water shortage contingencies, and recycled-water usage for the areas within Sacramento County where Zone 41 provides retail water services, including Zone 40. In accordance with SBx7-7, the Zone 41 UWMP estimated water demands are based on an estimated gallons per capita per day target chosen by SCWA (SCWA 2011b:5). Water supplies and demands within SCWA Zone 40 would be the same during normal, single-dry, and multiple-dry years; however, the year-to-year mix of surface and groundwater would be adjusted as necessary to meet the demands as part of SCWA's conjunctive use water supply program. Table 3.17-8 identifies surface water and groundwater supply and demand within SCWA Zone 40 from 2010 to 2035 in normal, single dry, and multiple dry years.

Groundwater use is projected to decrease from the current level once the Vineyard Surface WTP comes online in 2011; but it will increase over time as water demand continues to grow in Zone 40. In wet and normal years, groundwater pumping will be minimized because surface water becomes the major water supply source. In dry years, groundwater pumping will increase substantially as surface water availability is considerably reduced. Reduction in projected pumping in wet/normal years between 2010 and 2035 reflects the phasing and availability of surface water facilities and supplies from the Vineyard Surface WTP. Over time, groundwater production will stabilize as SCWA's conjunctive use program is fully implemented (SCWA 2011a:4-16; SCWA 2011b:5 and 17).

Table 3.17-8
Comparison of Water Supply and Demand in Zone 40 (2010-2035)[1]

Water Year	Source	Projected Demands (afy)					
		2010	2015	2020	2025	2030	2035
Normal Year	**Supply[2]**						
	Groundwater	35,000	20,000	15,000	20,000	25,000	15,000
	Surface water	12,320	35,000	42,500	50,000	66,800	81,200
	Recycled water	1,000	3,000	4,400	4,400	4,400	4,400
	Total Supply	**48,320**	**58,000**	**61,900**	**74,400**	**96,200**	**100,600**
	Total Demand[3]	**34,511**	**44,425**	**48,162**	**52,583**	**60,065**	**68,812**
	Difference (Supply minus Demand)	13,806	13,576	13,738	21,817	36,135	31,788
Single-Dry Year	**Supply[2]**						
	Groundwater	39,930	46,300	48,800	61,300	64,500	68,600
	Surface water	7,390	8,700	8,700	8,700	18,000	27,600
	Recycled water	1,000	3,000	4,400	4,400	4,400	4,400
	Total Supply	**48,320**	**58,000**	**61,900**	**74,400**	**86,900**	**100,600**
	Total Demand[3]	**34,511**	**44,425**	**48,162**	**52,583**	**60,065**	**68,812**
	Difference (Supply minus Demand)	13,806	13,576	13,738	21,817	26,832	31,788
Multiple-Dry Year 1	**Supply[2]**						
	Groundwater	36,232	32,500	30,500	38,500	37,200	36,800
	Surface water	11,088	22,500	27,000	31,500	45,300	59,400
	Recycled water	1,000	3,000	4,400	4,400	4,400	4,400
	Total Supply	**48,320**	**58,000**	**61,900**	**74,400**	**86,900**	**100,600**
	Total Demand[3]	**34,511**	**44,425**	**48,162**	**52,583**	**60,065**	**68,812**
	Difference (Supply minus Demand)	13,806	13,576	13,738	21,817	26,832	31,788
Multiple-Dry Year 2	**Supply[2]**						
	Groundwater	37,464	35,000	33,500	42,000	41,200	41,300
	Surface water	9,856	20,000	24,000	28,000	41,300	54,900
	Recycled water	1,000	3,000	4,400	4,400	4,400	4,400
	Total Supply	**48,320**	**58,000**	**61,900**	**74,400**	**86,900**	**100,600**
	Total Demand[3]	**34,511**	**44,425**	**48,162**	**52,583**	**60,065**	**68,812**
	Difference (Supply minus Demand)	13,806	13,576	13,738	21,817	26,832	31,788

Table 3.17-8
Comparison of Water Supply and Demand in Zone 40 (2010-2035)[1]

Water Year	Source	Projected Demands (afy)					
		2010	2015	2020	2025	2030	2035
Multiple-Dry Year 3	**Supply[2]**						
	Groundwater	38,080	36,250	35,000	43,750	43,200	43,550
	Surface water	9,240	18,750	22,500	26,250	39,300	52,650
	Recycled water	1,000	3,000	4,400	4,400	4,400	4,400
	Total Supply	**48,320**	**58,000**	**61,900**	**74,400**	**86,900**	**100,600**
	Total Demand[3]	**34,511**	**44,425**	**48,162**	**52,583**	**60,065**	**68,812**
	Difference (Supply minus Demand)	13,806	13,576	13,738	21,817	26,832	31,788

Notes: afy = acre-feet per year

[1] Water supplies and demands within SCWA Zone 40 would be the same during normal, single-dry, and multiple-dry years; however, the year-to-year mix of surface and groundwater would be adjusted as necessary to meet the demands as part of its conjunctive use water supply program.

[2] This table presents Zone 40 conjunctive use water supply sources identified in the *2011 Zone 41 Urban Water Management Plan*. It does not account for any available GET–Remediated Water supply that would be specifically provided to the Rio del Oro Specific Plan area.

[3] This table presents water demand for areas within Zone 40 that would implement the Zone 40 conjunctive use surface water and groundwater supply program. It does not account for the Rio del Oro Specific Plan area where water demands that would be met with GET–Remediated Water.

Source: SCWA 2011a; data compiled by AECOM 2011

Reasonable Likelihood of Zone 40 Supplies

In wet and normal water years, SCWA would divert surface water from the American and Sacramento Rivers consistent with the entitlement contracts described above. The underlying groundwater basin would be replenished in wet years as a result of this reliance on surface water. In dry water years, SCWA's surface water could be reduced based on recommended dry-year cutback volumes outlined in the WFA—those volumes that purveyors have agreed not to divert from the American River during dry years. During dry years, SCWA would increase groundwater pumping so that it could continue to meet the water demand of its customers (SCWA 2005).

The sufficiency of the "firm" Zone 40 WSMP groundwater supplies to supply all users in the Zone 40 area is illustrated by the hydrologic modeling in the 2005 Zone 40 WSMP. The hydrologic effects of implementing the 2005 Zone 40 WSMP were analyzed using the Sacramento County Integrated Groundwater Surface Water Model (IGSM). The IGSM was originally developed in the early 1990s to analyze the impacts of different water supply planning scenarios on the groundwater resources of Sacramento County. Based on its theoretical foundation, past applications, and sensitivity testing, the IGSM model was determined by SCWA to be the appropriate tool for assessing the impacts of the Zone 40 WSMP. IGSM model runs were performed to analyze the effects of the Zone 40 WSMP, including an evaluation of the 2030 Study Area as well as surrounding areas. The model runs were performed to assess the overall impacts on the groundwater basin under existing conditions as well as 2030 conditions for different combinations of surface water and groundwater use. The IGSM model evaluated two basic scenarios: the 2000 Baseline Condition and the 2030 Condition.

The 2000 Baseline Condition represents the long-term effect of water demand and supply conditions at the year 2000 level of development, held constant over a 74-year period of historical hydrology. The 2030 Condition represents the long-term effects of the year 2030 level of development over the 74-year period of historical

hydrology. The 2030 Condition assumes development of approved specific plans and associated reductions in agricultural acreage and water demand in Zone 40, along with increases in surface-water supplies, in order to satisfy the increased urban demand. Groundwater pumping would still be used to supplement water supplies for urban areas and to meet agricultural demand.

The model runs for the 2030 Condition were conducted to illustrate potential effects related to all of the following:

- groundwater pumping locations (pumping within the subarea of use, pumping concentrated in the northern portion of Zone 40, pumping concentrated in the southern portion of Zone 30, and a uniform pumping scenario),
- variable volumes of reuse of remediated groundwater,
- increases in surface water from availability of appropriative water, and
- enhancement of Cosumnes River flows.

The modeling evaluated projected pumping within the groundwater basin by SCWA as well as all other water users, including those for agriculture. The results of the groundwater model indicate that in 2030, approximately 74,000 afy of groundwater is expected to be pumped by SCWA and private urban and agricultural water users for use in the Zone 40 2030 Study Area.

This volume, combined with other pumping in the Central Basin (including pumping for groundwater remediation), would be less than the WFA sustainable-yield recommendation of 273,000 afy for all modeled scenarios that assume some level of reuse of remediated groundwater. Assuming such reuse, average groundwater levels in the northern Zone 40 area would increase by about 4 feet, while those in the southern Zone 40 area would decrease by about 1 foot (WSMP Appendix F, p. 6-21). Stabilized groundwater elevations at the Central Basin's cone of depression under the modeled scenarios would range from approximately 50 feet below mean sea level (msl) to 84 feet below msl, which are all substantially higher than the level projected by the WFA of 116 feet below msl to 130 feet below msl. This data indicates that the negative effects from groundwater pumping on the cone of depression would be less than were projected by the WFA.

Groundwater pumping associated with the Zone 40 WSMP would not cause sustainable-yield recommendations to be exceeded. Therefore, groundwater levels at the Central Basin cone of depression are projected to be higher than the minimum levels that were determined to be acceptable to the Water Forum, and this impact was considered less than significant in the Zone 40 WSMP EIR.

SCWA's conjunctive use program is a coordinated approach to manage surface water and groundwater supplies to maximize the yield of available water resources. In wet and normal water years, SCWA would divert surface water from the American and Sacramento Rivers consistent with the entitlement contracts described above. The underlying groundwater basin would be replenished in wet years as a result of this reliance on surface water. In dry water years, SCWA's surface water could be reduced based on recommended dry-year cutback volumes outlined in the WFA—those volumes that purveyors have agreed not to divert from the American River during dry years. During dry years, SCWA would increase groundwater pumping so that it could continue to meet the water demand of its customers (SCWA 2011b:17).

With implementation of the Zone 40 WSMP, Zone 41 UWMP, and Zone 40 WSIP, SCWA Zone 40 would be served with reliable, long-term groundwater supplies. SCWA has secured (and is in the process of securing additional) surface water entitlements that would allow SCWA to meet its projected 2035 water demands. Based on SBx7-7 requirements and a slower than previously anticipated growth rate, it is projected that the ultimate water demand described in the Zone 40 WSMP will probably not occur until 2050 (SCWA 2011b:5). SCWA intends to continue to extract groundwater to meet its customer demands within the limits of the negotiated

sustainable yield of the Central Basin. Therefore, SCWA's groundwater supplies are considered reliable, as are those surface water supplies for which SCWA has existing CVP contracts (the SMUD and Fazio supplies), appropriative water rights, and POU water and there is reasonable likelihood that these water supplies will continue to be available.

Water Conveyance and Treatment Facilities

Existing and proposed surface water and groundwater conveyance and treatment facilities would be required to provide water supplies to the SPA. Surface water would be diverted from the Sacramento River via the FRWP facilities and conveyed to the Vineyard Surface WTP for treatment. After the water is treated at the Vineyard Surface WTP, it would be delivered to the SPA through the proposed NSAP and proposed Florin Road/Sunrise Boulevard pipeline. In addition, surface water could be provided in the interim through the temporary conversion of the Anatolia raw groundwater transmission pipeline to a treated surface water transmission pipeline after the Vineyard Surface WTP becomes operational. The FRWP, Vineyard Surface WTP, and NSAPP are summarized below. The Florin Road/Sunrise Boulevard pipeline and Anatolia surface water transmission pipeline are proposed as part of the project; a detailed description of these water conveyance facilities is provided in Chapter 2, "Alternatives" and shown on Exhibits 2-9 and 2-10, respectively, and they are described and evaluated below in Impacts 3.17-3 and 3.17-4, respectively.

Groundwater would be provided by the NVWF, the Mather Housing groundwater system, and the SunCreek groundwater wells. The NVWF and Mather Housing groundwater system are summarized below. The SunCreek groundwater wells and SunCreek WTP are proposed as part of the project; therefore, a description of these wells is provided in Chapter 2, "Alternatives" and shown on Exhibit 2-8, and they are described and evaluated below in Impact 3.17-5.

The preferred rate of water supply for the project cannot be delivered until the Vineyard Surface WTP, which is currently under construction; the proposed NSAPP; and proposed NVWF Wells 4 through 6 are online. Where appropriate, the environmental documents evaluating these facilities are hereby incorporated by reference and summarized in this section below. However, as discussed in Chapter 2, "Alternatives," and in Impact 3.17-1, alternatives to the preferred rate of water supply, which would allow phased development, have been developed and are analyzed herein.

Freeport Regional Water Project

The FRWP involves construction of a 185-mgd intake facility and pumping plant located on the Sacramento River, a reservoir and water treatment plant, a terminal facility located at the point of delivery to the Folsom South Canal, a canal pumping plant located at the terminus of the Folsom South Canal, an aqueduct pumping plant and pretreatment facility near the Mokelumne Aqueducts/Camanche Reservoir area, and pipelines to deliver water from the intake facility to the Zone 40 Vineyard Surface WTP and to the Mokelumne Aqueduct (Freeport Regional Water Authority 2003).

Installation of the conveyance pipeline was completed in July 2009 and the intake facility was completed and became operational in April 2010. SCWA plans to begin using FRWP water in 2011 after completion of the Vineyard Surface WTP. The FRWP will provide SCWA with up to 85 mgd of surface water from the Sacramento River that would be conveyed by FRWP to SCWA's Vineyard Surface WTP. The remaining 100 mgd of the 185 mgd diverted from the Sacramento River would be conveyed past the Vineyard Surface WTP by the East Bay Municipal Utility District (EBMUD) to the Folsom South Canal, which would convey the water to the Mokelumne Aqueduct for use within EBMUD's service area during dry years. Pursuant to SWRCB Permit No. 21209, SCWA's total diversions at Freeport intake facility are permitted for up to 132 cubic feet per second, but not to exceed 71,000 afy. On average, however, SCWA's diversions are initially estimated to be 21,700 afy in 2010 (Freeport Regional Water Authority 2009).

Vineyard Surface Water Treatment Plant

SCWA is constructing the Vineyard Surface WTP (previously referred to as the Central Surface WTP) and associated water supply facilities to provide potable water to existing and approved future development within the SCWA Zone 40 area. The Vineyard Surface WTP is located west of the intersection of Florin and Excelsior Roads, at the northeast corner of Florin and Knox Roads in Sacramento County.

The objective of constructing the Vineyard Surface WTP is to provide capacity for treating 100 mgd of raw surface water and remediated groundwater, and to serve approved land uses in the Zone 40 service area. The Vineyard Surface WTP would be constructed in three phases and expanded incrementally to meet water treatment demands in the Zone 40 service area (Sacramento County 2004). Construction of the Vineyard Surface WTP began in March 2008 and will provide 50 mgd of surface water treatment capacity. The plant is anticipated to be operational in November 2011, with full buildout by 2029 (SCWA 2009).

The environmental impacts of the construction and operation of the Vineyard Surface WTP were analyzed at a programmatic level in the Zone 40 WSMP EIR, and at a project-level in an IS/MND (SCH #20047092050), which was circulated for public review in September 2004 (Sacramento County 2004). The Zone 40 WSMP EIR and the Vineyard Surface WTP IS/MND are hereby incorporated by reference into this DEIR/DEIS.

North Service Area Pipeline Project

The NSAPP would include construction of a transmission main and booster tank station to serve the Mather Specific Plan area and SCWA's NSA, which includes the SPA. The NSAP would begin at the Vineyard Surface WTP and convey surface water through one of four alternative alignments to an existing 42-inch transmission main at the intersection of Douglas Road and Sunrise Boulevard. The NSAP would begin at the Vineyard Surface WTP and would travel east to the intersection of Florin Road and Eagles Nest Road and then turn north to the intersection of Kiefer Boulevard. From this point, the following four alternative alignments are proposed (Sacramento County 2010:IS-7 and IS-8):

- **Alternative 1:** The transmission main would continue north along the proposed Eagles Nest Road alignment then turn east along Douglas Road to the Douglas Road booster tank station. The transmission main would then continue east to the existing 42-inch transmission main at the intersection of Douglas Road and Sunrise Boulevard.

- **Alternative 2:** The transmission main would continue north along the proposed Eagles Nest Road alignment then travel east for 3,900 feet to the Mather Field booster tank station. The transmission main would turn north and continue parallel to the Folsom South Canal and then cross over the canal and connect with the Douglas Road booster tank station. The transmission main would then continue east to the existing 42-inch transmission main at the intersection of Douglas Road and Sunrise Boulevard.

- **Alternative 3:** The transmission main would continue east along Kiefer Boulevard then travel north parallel to the Folsom South Canal to the Mather Field booster tank station. The transmission main would turn north and continue parallel to the Folsom South Canal and then cross over the canal and connect with the Douglas Road booster tank station. The transmission main would then continue east to the existing 42-inch transmission main at the intersection of Douglas Road and Sunrise Boulevard.

- **Alternative 3A:** This alternative would be a deviation in alignment between the two tank sites that could be used with any of the previous three alternatives. The transmission main would cross the Folsom South Canal then would either continue to the Douglas Road tank site or Mather Field Tank. The transmission main would then continue to the existing 42-inch transmission main at the intersection of Douglas Road and Sunrise Boulevard.

The following two alternative booster tank station sites are proposed:

- The Douglas Road booster tank station site is proposed to serve the SDCP/SRSP area with up to two 3.5-mgd storage tanks, booster pumps, generators, and a control building on Douglas Road near the southwest corner of Douglas Road and Sunrise Boulevard.

- The Mather Field booster tank station site would serve the Mather Field Specific Plan area with two 1.5-mgd storage tanks, booster pumps, generators, and a control building on the Mather property located near the west bank of the Folsom South Canal and approximately one mile north of Kiefer Boulevard.

The environmental impacts of the construction and operation of the NSAP were analyzed at a programmatic level in the Zone 40 WSMP EIR, and at a project-level in an IS/MND (SCH #2010082044), which was circulated for public review in August 2010 (Sacramento County 2010). The IS/MND was adopted by the County on October 17, 2010. The NSAPP IS/MND is hereby incorporated by reference into this DEIR/DEIS.

North Vineyard Well Field

The NVWF would consist of up to seven wells and would provide for the extraction of up to 10,000 afy of groundwater at buildout. SCWA has constructed the first phase of the NVWF, consisting of three wells (Wells 1-3) and three filters. NVWF Wells 1-3 are operational and are capable of producing approximately 3,600 afy. SCWA has designated one of the three wells as an emergency backup well to increase water supply availability and reliability. Wells 4 through 7 will be constructed as new water supplies are required.

The environmental impacts of the construction and operation of the NVWF were analyzed at a programmatic level in the SDCP/SRSP EIR (specifically the Revised SDCP/SRSP Long-Term Water Supply Plan Draft EIR, which is incorporated by referenced into this DEIR/DEIS). Because the NVWF was identified as a facility necessary to supply groundwater to Zone 40, the well field was also analyzed at a programmatic level in the Zone 40 WSMP EIR.

Project-level IS/MNDs for Well 4 (SCH #2005042042), Well 5 (SCH #2005062109), and Well 6 (SCH #2005072003) analyzed the environmental impacts of the construction and operation of these wells (Sacramento County 2005a, Sacramento County 2005b, and Sacramento County 2005c). The IS/MNDs were circulated for public review and adopted by Sacramento County in 2005. All three of these IS/MNDs are hereby incorporated by referenced into this DEIR/DEIS. Although the project-level CEQA review is complete, there is currently no time frame for construction of wells 4 through 6. Well 7 has not undergone project-level CEQA review and there is currently no time frame for construction of Well 7.

Anatolia Water Treatment Plant

The Anatolia WTP is located east of Sunrise Boulevard, west of Anatolia Drive, and south of Chrysanthy Boulevard in the Anatolia II subdivision. The Anatolia WTP became operational in July 2005 and currently treats raw water from the NVWF. The current design capacity of this facility is approximately 6.5 mgd (4,500 gallons per minute). As of 2009, the average day demand was approximately 2.1 mgd and the maximum day demand was 4.3 mgd. Expansion of the Anatolia WTP to its ultimate capacity of 13.0 mgd is required to provide water treatment for build-out of the NSA. SCWA currently has no set timeframe to upgrade the Anatolia WTP.

The Anatolia WTP utilizes two, 2-mgd storage tanks, which have adequate capacity to provide operational, emergency, and fire requirements. The Anatolia storage tank capacity varies between 40% during peak hours to 100% at off-peak hours. This variability could be modified in the future by enabling the tanks to receive some surface water during the off-peak hours.

Mather Housing Groundwater System

The Mather Housing groundwater system consists of two groundwater wells, a 6.0-mgd groundwater treatment plant, and one 0.5-mgd storage tank. The Mather Housing water transmission pipeline connects to the Sunrise Douglas Community Plan Area at the intersection of Douglas Road and Sunrise Boulevard. However, treated water from the Mather Housing groundwater system is prevented from reaching this area due to differences in pressure, which prevents SCWA from utilizing the full 6.0-mgd capacity of the Mather Housing groundwater system for the SDCP/SRSP area.

3.17.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

There are no Federal plans, policies, regulations, or laws related to water supply that are applicable to the Proposed Project or other alternatives under consideration.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Senate Bills 610 and 221

The State of California has enacted legislation that is applicable to the consideration of larger projects under CEQA. 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" for large developments (i.e., more than 500 dwelling units or nonresidential equivalent), such as the SunCreek Specific Plan. These assessments, prepared by "public water systems" responsible for serving project areas (in this case, SCWA), address whether existing and projected water supplies are adequate to serve the project while also meeting existing urban and agricultural demands and the needs of other anticipated development in the service area in which the project is located. If the most recently adopted UWMP accounted for the projected water demand associated with the project, the public water system may incorporate the requested information from the UWMP. If the UWMP did not account for the project's water demand, or if the public water system has no UWMP, the project's WSA must discuss whether the system's total projected water supplies (available during normal, single-dry, and multiple-dry water years during a 20-year projection) would meet the project's water demand in addition to the system's existing and planned future uses, including agricultural and manufacturing uses. A WSA has been prepared for the project (SCWA 2011b, on behalf of the City) and is included as Appendix V to this EIR/EIS.

Where a WSA concludes that insufficient supplies are available, the public water system must provide to the city or county considering the development project (here, the City of Rancho Cordova) its plans for acquiring and developing additional water supplies. Based on all the information in the record relating to the project, including all applicable WSAs and all other information provided by the relevant public water systems, the city or county must determine whether sufficient water supplies are available to meet the demands of the project, in addition to existing and planned future uses. Where a WSA concludes that insufficient supplies are available, the WSA must lay out the steps that would be required to obtain the necessary supply. The WSA is required to include (but is not limited to) identification of the existing and future water supplies over a 20-year projection period. This information must be provided for average normal, single-dry, and multiple-dry years. The absence of an adequate current water supply does not preclude project approval, but it does require a lead agency to address a water supply shortfall in its project findings.

If the 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 by 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 follows:

> ...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.

A number of factors must be considered in determining the sufficiency of projected supplies:

- the availability of water supplies over a historical record of at least 20 years;
- the applicability of an urban-water-shortage contingency analysis that includes action to be undertaken by the public water system in response to water supply shortages;
- the reduction in water supply allocated to a specific water-use sector under a resolution or ordinance adopted or a contract entered into by the public water system, as long as that resolution, ordinance, or contract does not conflict with statutory provisions giving priority to water needed for domestic use, sanitation, and fire protection; and
- the amount of water that the water supplier can reasonably rely on receiving from other water supply projects, such as conjunctive use, reclaimed water, water conservation, and water transfer, including programs identified under Federal, state, and local water initiatives.

California Water Conservation Act

SBx7-7 was enacted in November 2009 and requires each urban water supplier to select one of four water conservation targets contained in California Water Code Section 10608.20 with the statewide goal of achieving a 20% reduction in urban per capita water use by 2020. Under SBx7-7, urban retail water suppliers (in this case, SCWA) are required to develop water use targets and submit a water management plan to DWR by July 2011. The plan must include the baseline daily per capita water use, water use target, interim water use target, and compliance daily per capita water use. In addition, the State will make incremental progress towards this goal by reducing per capita water use by at least 10% by December 31, 2015.

The 2010 Zone 41 UWMP was completed in June 2011 and includes new requirements for water conservation as set forth in the SBx7-7.

Regional and Local Plans, Policies, Regulations, and Ordinances

Rancho Cordova Landscaping Ordinance (Municipal Code Title 23, Chapter 23.716)

The City of Rancho Cordova's Landscaping Ordinance (Municipal Code Title 23, Chapter 23.716) establishes minimum landscape standards to enhance the appearance of developments, reduce heat and glare, control soil erosion, conserve water, ensure the ongoing maintenance of landscape areas, and ensure that landscape installations do not create hazards for motorists or pedestrians. All new nonresidential, mixed-use, and single-family residential and multifamily residential subdivisions are required to comply with the landscaping requirements.

The Landscaping Ordinance requires all multifamily, nonresidential, and mixed-use development to install a low-pressure irrigation system in 30% of all landscaped areas; to install automatic programmable controllers with check valves in sloping areas with elevation differences of more than 5 feet as defined from the toe to the top of slope; to group landscape materials with the same watering needs together; to design irrigation systems to avoid runoff, excessive low head drainage, overspray, or other similar conditions where water flows or drifts onto

adjacent property, non-irrigated areas, walks, roadways, or structures; and to post an annual maintenance program with the seasonal watering schedule in or near the control box.

Rancho Cordova General Plan

Goals and policies from the *City of Rancho Cordova General Plan* (City General Plan 2006b) relating to water supply that are applicable to the Proposed Project and the other alternatives under consideration are listed in Appendix K.

3.17.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The water supply analysis in a CEQA document is governed by California case law that requires the lead agency to consider both the relative certainty of new water supplies that a project would require and the impacts that could result from the use of those new water supplies. The following discussion introduces the principles governing water supply analyses in CEQA documents and distinguishes between the analysis of the certainty of supplies and the impact of providing those supplies. These principles are as follows:

1. An environmental impact report (EIR) may not assume a solution to problem of water supply, but must instead present sufficient facts to evaluate the pros and cons of supplying the required water (*Santiago County Water District v. Orange* [1981] 118 Cal.App.3d 818, 829).

2. The water supply analysis for large, multiphase projects may not be limited to the first few years or phases. Furthermore, the first or programmatic document for such a project may not defer analysis to future phases, but must analyze reasonably foreseeable impacts of supplying required water. The tiering principle does not allow deferral to future studies or documents (*Santa Clarita Organization for Planning the Environment v. County of Los Angeles* [2003] 106 Cal. App. 4th 715, 723).

3. An EIR evaluating a planned land use project must assume that all phases of the project will eventually be built and will need water. The EIR for such a project must analyze the impacts of supplying water to the entire project (*Stanislaus Natural Heritage Project v. County of Stanislaus* [1996] 48 Cal.App.4th 182, 206).

4. Future water supplies for a project must bear a reasonable likelihood of proving to be available. While absolute certainty is not required, water supplies must be identified with more specificity as projects progress from general to specific phases (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* [2007] 40 Cal. 4th, 412, 434). "Where, despite a full discussion, it is impossible to confidently determine that anticipated water sources will be available, CEQA requires some discussion of possible replacement sources or alternative to use of the anticipated water, and of the environmental consequences of those contingencies." (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* [2007] 40 Cal. 4th 412, 432.)

5. Although much of the case law focuses on the issue of certainty, the ultimate issue under CEQA is not whether an EIR establishes a likely source of water, but whether the document adequately analyzes the reasonably foreseeable impacts of supplying water to the project (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* [2007] 40 Cal. 4th, 412, 434).

The discussion of water supply in this section follows these principles. Accordingly, this analysis looks at both the reasonable likelihood of selected water supplies being available and the impacts that would result from those supplies. An impact is considered significant if the project or a phase of the project would result in a water shortage or another significant adverse physical impact on the environment.

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. The Proposed Project or other alternatives under consideration were determined to result in a significant impact related to water supply if they would do any of the following:

- require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction or operation of which could cause significant environmental effects; or
- have insufficient water supplies available to serve the project from existing or permitted entitlements and resources, or require new or expanded entitlements.

ANALYSIS METHODOLOGY

Impacts of project implementation on potable and nonpotable water supplies and conveyance facilities were identified by comparing existing service capacity and facilities with future demand associated with project implementation. Where possible, a quantitative comparison was used to determine impacts of the project on future demands. Potential demands for water and impacts on infrastructure were evaluated based on a review of the following documents pertaining to the SPA and surrounding area. In accordance with Section 15150 of the State CEQA Guidelines, the following documents are incorporated by reference in this EIR/EIS, and relevant portions of these documents are summarized herein where their analysis has been relied on:

- *Sacramento County Water Agency 2005 Zone 40 Water Supply Master Plan* (SCWA 2005),
- *Sacramento County Water Agency 2010 Zone 41 Urban Water Management Plan* (SCWA 2011a),
- *Sacramento County Water Agency Zone 40 Water System Infrastructure Plan* (SCWA 2006),
- *City of Rancho Cordova Water Supply Evaluation for the City of Rancho Cordova General Plan* (City of Rancho Cordova 2006a),
- *City of Rancho Cordova General Plan* (City of Rancho Cordova 2006b),
- *Environmental Impact Report, City of Rancho Cordova General Plan*. (SCH #2005022137) (City of Rancho Cordova 2006c),
- *Revised Sunrise Douglas Community Plan/Sunridge Specific Plan Long-Term Water Supply Plan Draft Environmental Impact Report* (AECOM 2011),
- *Zone 40 Central Service Water Treatment Plant and Corporation Yard Project Initial Study/Negative Declaration*. (SCH #2004092050) (Sacramento County 2004),
- *Excelsior Road Well Field, Well No. 4 Initial Study/Mitigated Negative Declaration*. (State Clearinghouse Number 2005042042) (Sacramento County 2005a),
- *Anatolia Off-Site Well Field No. 5 Initial Study/Negative Declaration*. (State Clearinghouse Number 2005062109) (Sacramento County 2005b),
- *Anatolia Off-Site Well Field No. 6 Initial Study/Negative Declaration*. (State Clearinghouse Number 2005072003) (Sacramento County 2005c),
- *North Service Area Pipeline, Tank, and Booster Pump Project* (SCH #2010082044) (Sacramento County 2010),

- *Master Water Study for the SunCreek Specific Plan* (MWH 2008, attached as Appendix U),
- *Water Supply Assessment for the SunCreek Specific Plan* (SCWA 2011b),
- *Technical Memorandum No. 2. Groundwater Demands for the SunCreek Specific Plan* (MacKay & Somps 2011a, attached as Appendix W),
- *Technical Memorandum No.8. Regional Water Facilities for the SunCreek Specific Plan* (MacKay & Somps 2011b, attached as Appendix H), and
- *Non-Potable Water Master Plan for the Sunrise Douglas Community Plan Area* (Wood Rogers 2007).

These documents are available for review at the City of Rancho Cordova Planning Department, located at 2729 Prospect Park Drive, Rancho Cordova, CA 95670.

IMPACT ANALYSIS

Impacts that would occur under each alternative development scenario are identified as follows: NP (No Project), NCP (No USACE Permit), PP (Proposed Project), BIM (Biological Impact Minimization), CS (Conceptual Strategy), and ID (Increased Development). The impacts for each alternative are compared relative to the PP at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3.17-1 **Increased Demand for Water Supplies.** *Project implementation would result in increased demand for surface water and groundwater supplies.*

NP

Under the No Project Alternative, no project-related development would occur and there would be no new urban uses (e.g., residential or commercial land uses) that would increase the demand for water supplies. Therefore, **no direct** or **indirect** impacts would occur. ***[Lesser]***

NCP, PP, BIM, CS

Presently, there are no public water supply facilities on the SPA. SCWA would provide water supplies to the SPA through its Zone 40 conjunctive-use water supply system in three phases. Phase 1 water service would involve using available groundwater supplies from the NVWF and the Mather Housing groundwater system until NSA water demands approach the capacity of these groundwater wells. Phase 2 water service would entail conjunctive use of available SCWA groundwater supplies and surface water delivered by the NSAP. Phase 3 water service would not occur until the water demands of the NSA begin to approach the capacity of the NSAP. At that time, SCWA anticipates that the Vineyard Surface WTP, NVWF, and Anatolia WTP would be expanded to their full capacity to meet water demands of the NSA, including the SPA. Furthermore, three groundwater wells on the SunCreek SPA are proposed as part of this project in order to provide an additional source of water supply (MacKay & Somps 2011a:6).

The following analysis provides the water demands of the No USACE Permit, Proposed Project, Biological Impact Minimization, Conceptual Strategy, and Increased Development Alternatives, identifies available surface water and groundwater supplies, identifies conjunctive-use water supply scenarios to meet water demands, and discusses the reasonable likelihood of water supplies to meet water demands of the SPA.

SunCreek Specific Plan Water Demand

In compliance with SB 610, a WSA has been prepared based on water supplies identified in the Zone 41 UWMP to determine whether the projected available water supplies would meet the water demand of the Proposed Project Alternative, in addition to the existing and planned future uses in the Zone 40 2030 Study Area (SCWA 2001b, see Appendix V). The SCWA Board of Directors adopted the SunCreek Specific Plan WSA on May 3, 2011.

The water demand for the SPA was estimated in SCWA's Zone 40 WSMP to be 3,176 afy by 2030, and this total is reflected in the Zone 41 UWMP (SCWA 2011b:8). To estimate total future water demands for buildout of the No USACE Permit, Proposed Project, Biological Minimization, Conceptual Strategy, and Increased Development Alternatives, SCWA's Zone 40 water-demand factors were applied to the acreage for each land use designation that generates water use within the SPA. The total projected water demands are 2,033 afy for the No USACE Permit Alternative, 3,058 afy for the Proposed Project Alternative, 2,672 afy for the Biological Impact Minimization Alternative, 2,952 afy for the Conceptual Strategy Alternative, and 3,478 afy for Increased Development Alternative. Table 3.17-9 summarizes the water demands under each action alternative by 5-year increments over a 20-year planning horizon. Because the water supply demand under the No USACE Permit, Proposed Project, Biological Minimization, and Conceptual Strategy Alternatives is less than the water demand estimated by SCWA for the SPA (3,176 afy), the WSA concluded that sufficient water supplies would be available to meet water demands for these alternatives (SCWA 2011b:27). However, the water demand for the Increased Development Alternative (3,478 afy) is greater than the water demand estimated by SCWA for the SPA (3,176 afy) and the WSA concluded that sufficient water supplies may not be available to meet water demands of this alternative (SCWA 2011b:27). The reasonable likelihood of water supplies to meet demands of the Increased Development Alternative is discussed under the heading, "ID," below.

Table 3.17-9
SunCreek Specific Plan Water Demands (2010-2030)

Alternative	Projected Demands (afy)				
	2010	2015	2020	2025	2030
No USACE Permit	0	202	1,019	1,832	2,033
Proposed Project	0	308	1,529	2,750	3,058
Biological Impact Minimization	0	269	1,333	2,403	2,672
Conceptual Strategy	0	297	1,473	2,655	2,952
Increased Development	0	347	1,736	3,131	3,478

Notes: afy = acre-feet per year
Source: MacKay & Somps 2011a:21

SunCreek Specific Plan Water Supply Program

Surface water would be diverted from the Sacramento River via the FRWP facilities and conveyed to the Vineyard Surface WTP for treatment. Treated water would then be conveyed to the NSA through the NSAP and Florin Road/Sunrise Boulevard pipeline (see Impacts 3.17-2 and 3.17-3, below). In addition, surface water could be provided in the interim through the temporary conversion of the Anatolia raw groundwater transmission pipeline to a treated surface water transmission pipeline after the Vineyard Surface WTP becomes operational (see Impact 3.17-4, below). Conversion of the Anatolia surface water transmission pipeline would be capable of conveying 7,853 afy of surface water to the SPA (MacKay & Somps 2011b:16).

Groundwater would be provided by the NVWF, Mather Housing groundwater system, and SunCreek groundwater wells (see Impacts 3.17-2 and 3.17-5, below). It is assumed for this analysis that the NVWF would provide 2,409

afy of groundwater and expansion of the well field would provide 4,996 afy, the Mather Housing groundwater system would provide 3,361 afy, and the SunCreek groundwater wells would produce 2,240 afy of groundwater (MacKay & Somps 2011a:5).

Four water supply scenarios have been developed as options for providing water to the SPA based on the surface water and groundwater supplies identified above:

- Accelerated Construction of the NSAP
- Delayed Construction of the NSAP
- Conversion of the Anatolia Raw Groundwater Transmission Pipeline
- Groundwater Intensive Development with the SunCreek Groundwater Wells

In the long term, SCWA anticipates the majority of water demands in the NSA (including the SPA) would be met with surface water. However, the year-to-year mix of surface and groundwater varies depending on a large number of variables and surface water and groundwater supplies would be adjusted as necessary to meet the demands of the NSA as part of its conjunctive use program. Because the surface and groundwater mix that SCWA may use in the future is unknown, the following analysis assumes SCWA would continue to operate groundwater facilities at maximum capacity after surface water deliveries begin. This represents the worst case scenario that could occur for the SunCreek project with regard to SCWA's operation of its conjunctive-use water supply system (MacKay & Somps 2011b:9). A comparison of water supplies available to meet projected water demands for all five action alternatives under each of the four water supply scenarios is summarized in Tables 3.17-10 through 3.17-13 below.

Table 3.17-10
Comparison of Water Supply and Demand –
Accelerated Construction of the North Service Area Pipeline Scenario (afy)

Alternative	Source	2010	2015	2020	2025	2030
No USACE Permit	**Supply**					
	Groundwater	5,769	5,769	5,769	5,769	5,769
	Surface water	0	5,332	11,734	18,136	24,830
	Total Supply	**5,769**	**11,101**	**17,503**	**23,905**	**30,599**
	Demand					
	NSA (SunCreek project not included)	5,769	10,899	16,484	22,073	28,566
	SunCreek project	0	202	1,019	1,832	2,033
	Total Demand	**5,769**	**11,101**	**17,503**	**23,905**	**30,599**
	Difference (Supply minus Demand)	0	0	0	0	0
Proposed Project	**Supply**					
	Groundwater	5,769	5,769	5,769	5,769	5,769
	Surface water	0	5,444	12,250	19,055	25,860
	Total Supply	**5,769**	**11,213**	**18,018**	**24,824**	**31,629**
	Demand					
	NSA (SunCreek project not included)	5,769	10,905	16,490	22,074	28,571
	SunCreek project	0	308	1,529	2,750	3,058
	Total Demand	**5,769**	**11,213**	**18,019**	**24,824**	**31,629**
	Difference (Supply minus Demand)	0	0	0	0	0

Table 3.17-10
Comparison of Water Supply and Demand –
Accelerated Construction of the North Service Area Pipeline Scenario (afy)

Alternative	Source	2010	2015	2020	2025	2030
Biological Impact Minimization	**Supply**					
	Groundwater	5,769	5,769	5,769	5,769	5,769
	Surface water	0	5,400	12,048	18,708	25,468
	Total Supply	**5,769**	**11,169**	**17,817**	**24,477**	**31,237**
	Demand					
	NSA (SunCreek project not included)	5769	10,900	16,484	22,074	28,565
	SunCreek project	0	269	1,333	2,403	2,672
	Total Demand	**5769**	**11,169**	**17,817**	**24,477**	**31,237**
	Difference (Supply minus Demand)	0	0	0	0	0
Conceptual Strategy	**Supply**					
	Groundwater	5,769	5,769	5,769	5,769	5,769
	Surface water	0	5,433	12,194	18,954	25,748
	Total Supply	**5,769**	**11,202**	**17,693**	**24,723**	**31,517**
	Demand					
	NSA (SunCreek project not included)	5,769	10,905	16,220	22,068	28,565
	SunCreek project	0	297	1,473	2,655	2,952
	Total Demand	**5,769**	**11,202**	**17,693**	**24,723**	**31,517**
	Difference (Supply minus Demand)					
Increased Development Alternative	**Supply**					
	Groundwater	5,769	5,769	5,769	5,769	5,769
	Surface water	0	5,489	12,463	19,436	26,286
	Total Supply	**5,769**	**11,258**	**18,232**	**25,205**	**32,055**
	Demand					
	NSA (SunCreek project not included)	5,769	10,911	16,496	22,074	28,577
	SunCreek project	0	347	1,736	3,131	3,478
	Total Demand	**5,769**	**11,258**	**18,232**	**25,205**	**32,055**
	Difference (Supply minus Demand)	0	0	0	0	0

Notes: afy = acre-feet per year; NSA = North Service Area
Source: MacKay & Somps 2011a:15

Table 3.17-11
Comparison of Water Supply and Demand –
Delayed Construction of the North Service Area Pipeline Scenario (afy)

Alternative	Source	2010	2015	2020	2025	2030
No USACE Permit	**Supply**					
	Groundwater	5,769	8,357	8,357	8,357	8,357
	Surface water	0	2744	9146	15,548	22,242
	Total Supply	**5,769**	**11,101**	**17,503**	**23,905**	**30,599**
	Demand					
	NSA (SunCreek project not included)	5,769	10,899	16,484	22,073	28,566
	SunCreek project	0	202	1,019	1,832	2,033
	Total Demand	**5,769**	**11,101**	**17,503**	**23,905**	**30,599**
	Difference (Supply minus Demand)	0	0	0	0	0
Proposed Project	**Supply**					
	Groundwater	5,769	8,357	8,357	8,357	8,357
	Surface water	0	2,856	9,661	16,467	23,272
	Total Supply	**5,769**	**11,213**	**18,018**	**24,824**	**31,629**
	Demand					
	NSA (SunCreek project not included)	5,769	10,905	16,490	22,074	28,571
	SunCreek project	0	308	1,529	2,750	3,058
	Total Demand	**5,769**	**11,213**	**18,019**	**24,824**	**31,629**
	Difference (Supply minus Demand)	0	0	0	0	0
Biological Impact Minimization	**Supply**					
	Groundwater	5,769	8,357	8,357	8,357	8,357
	Surface water	0	2,812	9,460	16,120	22,880
	Total Supply	**5,769**	**11,169**	**17,817**	**24,477**	**31,237**
	Demand					
	NSA (SunCreek project not included)	5,769	10,900	16,484	22,074	28,565
	SunCreek project	0	269	1,333	2,403	2,672
	Total Demand	**5,769**	**11,169**	**17,817**	**24,477**	**31,237**
	Difference (Supply minus Demand)	0	0	0	0	0
Conceptual Strategy	**Supply**					
	Groundwater	5,769	8,357	8,357	8,357	8,357
	Surface water	0	2,845	9,606	16,366	23,160
	Total Supply	**5,769**	**11,202**	**17,963**	**24,723**	**31,517**
	Demand					
	NSA (SunCreek project not included)	5,769	10,905	16,220	22,068	28,565
	SunCreek project	0	297	1,473	2,655	2,952
	Total Demand	**5,769**	**11,202**	**17,693**	**24,723**	**31,517**
	Difference (Supply minus Demand)	0	0	0	0	0

Table 3.17-11
Comparison of Water Supply and Demand –
Delayed Construction of the North Service Area Pipeline Scenario (afy)

Alternative	Source	2010	2015	2020	2025	2030
Increased Development Alternative	**Supply**					
	Groundwater	5,769	8,357	8,357	8,357	8,357
	Surface water	0	2,901	9,875	16,848	23,698
	Total Supply	**5,769**	**11,258**	**18,232**	**25,205**	**32,055**
	Demand					
	NSA (SunCreek project not included)	5,769	10,911	16,496	22,074	28,577
	SunCreek project	0	347	1,736	3,131	3,478
	Total Demand	**5,769**	**11,258**	**18,232**	**25,205**	**32,055**
	Difference (Supply minus Demand)	0	0	0	0	0

Notes: afy = acre-feet per year; NSA: North Service Area
Source: MacKay & Somps 2011a:16

Table 3.17-12
Comparison of Water Supply and Demand –
Conversion of the Anatolia Raw Groundwater Transmission Pipeline Scenario (afy)

Alternative	Source	2010	2015	2020	2025	2030
No USACE Permit	**Supply**					
	Groundwater	5,769	3,361	5,769	5,769	5,769
	Surface water	0	7,741	11,740	18,136	24,835
	Total Supply	**5,769**	**11,101**	**17,503**	**23,905**	**30,599**
	Demand					
	NSA (SunCreek project not included)	5,769	10,899	16,484	22,073	28,566
	SunCreek project	0	202	1,019	1,832	2,033
	Total Demand	**5,769**	**11,101**	**17,503**	**23,905**	**30,599**
	Difference (Supply minus Demand)	0	0	0	0	0
Proposed Project	**Supply**					
	Groundwater	5,769	3,361	5,769	5,769	5,769
	Surface water	0	7,852	12,255	19,055	25,866
	Total Supply	**5,769**	**11,213**	**18,019**	**24,824**	**31,629**
	Demand					
	NSA (SunCreek project not included)	5,769	10,905	16,490	22,074	28,571
	SunCreek project	0	308	1,529	2,750	3,058
	Total Demand	**5,769**	**11,213**	**18,019**	**24,824**	**31,629**
	Difference (Supply minus Demand)	0	0	0	0	0

Table 3.17-12
Comparison of Water Supply and Demand –
Conversion of the Anatolia Raw Groundwater Transmission Pipeline Scenario (afy)

Alternative	Source	2010	2015	2020	2025	2030
Biological Impact Minimization	**Supply**					
	Groundwater	5,769	3,361	5,769	5,769	5,769
	Surface water	0	7,808	12,054	18,708	25,474
	Total Supply	**5,769**	**11,169**	**17,823**	**24,477**	**31,243**
	Demand					
	NSA (SunCreek project not included)	5,769	10,900	16,484	22,074	28,565
	SunCreek project	0	269	1,333	2,403	2,672
	Total Demand	**5,769**	**11,169**	**17,823**	**24,477**	**31,243**
	Difference (Supply minus Demand)	0	0	0	0	0
Conceptual Strategy	**Supply**					
	Groundwater	5,769	3,361	5,769	5,769	5,769
	Surface water	0	7,841	12,199	18,954	25,754
	Total Supply	**5,769**	**11,202**	**17,962**	**24,723**	**31,517**
	Demand					
	NSA (SunCreek project not included)	5,769	10,905	16,220	22,068	28,565
	SunCreek project	0	297	1,473	2,655	2,952
	Total Demand	**5,769**	**11,202**	**17,962**	**24,723**	**31,517**
	Difference (Supply minus Demand)	0	0	0	0	0
Increased Development Alternative	**Supply**					
	Groundwater	5,769	3,361	5,769	5,769	5,769
	Surface water	0	7,897	12,468	19,436	26,292
	Total Supply	**5,769**	**11,258**	**18,232**	**25,205**	**32,055**
	Demand					
	NSA (SunCreek project not included)	5,769	10,911	16,496	22,074	28,577
	SunCreek project	0	347	1,736	3,131	3,478
	Total Demand	**5,769**	**11,258**	**18,232**	**25,205**	**32,055**
	Difference (Supply minus Demand)	0	0	0	0	0

Notes: afy = acre-feet per year; NSA: North Service Area
Source: MacKay & Somps 2011a:17

Table 3.17-13
Comparison of Water Supply and Demand –
Groundwater Intensive Development Scenario with the SunCreek Groundwater Wells (afy)

Alternative	Source	2010	2015	2020	2025	2030
No USACE Permit	**Supply**					
	Groundwater (NVWF)	5,769	8,357	8,357	8,357	8,357
	Groundwater (SunCreek well field)	0	2,240	2,240	2,240	2,240
	Surface water	0	605	7,136	13,661	20,483
	Total Supply	**5,769**	**11,202**	**17,773**	**24,258**	**31,080**
	Demand					
	NSA (SunCreek project not included)	5,769	11,000	16,754	22,426	29,047
	SunCreek project	0	202	1,019	1,832	2,033
	Total Demand	**5,769**	**11,202**	**17,773**	**24,258**	**31,080**
	Difference (Supply minus Demand)	0	0	0	0	0
Proposed Project	**Supply**					
	Groundwater (NVWF)	5,769	8,357	8,357	8,357	8,357
	Groundwater (SunCreek well field)	0	2,240	2,240	2,240	2,240
	Surface water	0	717	7,651	14,578	21,514
	Total Supply	**5,769**	**11,314**	**18,248**	**25,175**	**32,111**
	Demand					
	NSA (SunCreek project not included)	5,769	11,006	16,719	22,425	29,053
	SunCreek project	0	308	1,529	2,750	3,058
	Total Demand	**5,769**	**11,314**	**18,248**	**25,175**	**32,111**
	Difference (Supply minus Demand)	0	0	0	0	0
Biological Impact Minimization	**Supply**					
	Groundwater (NVWF)	5,769	8,357	8,357	8,357	8,357
	Groundwater (SunCreek well field)	0	2,240	2,240	2,240	2,240
	Surface water	0	672	7,449	14,232	21,122
	Total Supply	**5,769**	**11,269**	**18,046**	**24,829**	**31,719**
	Demand					
	NSA (SunCreek project not included)	5,769	11,000	16,713	22,426	29,047
	SunCreek project	0	269	1,333	2,403	2,672
	Total Demand	**5,769**	**11,269**	**18,046**	**24,829**	**31,719**
	Difference (Supply minus Demand)	0	0	0	0	0

Table 3.17-13
Comparison of Water Supply and Demand –
Groundwater Intensive Development Scenario with the SunCreek Groundwater Wells (afy)

Alternative	Source	2010	2015	2020	2025	2030
Conceptual Strategy	**Supply**					
	Groundwater (NVWF)	5,769	8,357	8,357	8,357	8,357
	Groundwater (SunCreek well field)	0	2,240	2,240	2,240	2,240
	Surface water	0	706	7,595	14,479	21,402
	Total Supply	**5,769**	**11,303**	**18,192**	**25,076**	**31,999**
	Demand					
	NSA (SunCreek project not included)	5,769	11,006	16,719	22,421	29,047
	SunCreek project	0	297	1,473	2,655	2,952
	Total Demand	**5,769**	**11,303**	**18,192**	**25,076**	**31,999**
	Difference (Supply minus Demand)	0	0	0	0	0
Increased Development Alternative	**Supply**					
	Groundwater (NVWF)	5,769	8,357	8,357	8,357	8,357
	Groundwater (SunCreek well field)	0	2,240	2,240	2,240	2,240
	Surface water	0	762	7,864	14,960	21,939
	Total Supply	**5,769**	**11,359**	**18,461**	**25,557**	**32,536**
	Demand					
	NSA (SunCreek project not included)	5,769	11,012	16,725	22,426	29,058
	SunCreek project	0	347	1,736	3,131	3,478
	Total Demand	**5,769**	**11,359**	**18,461**	**25,557**	**32,536**
	Difference (Supply minus Demand)	0	0	0	0	0

Notes: afy = acre-feet per year; NSA = North Service Area; NVWF = North Vineyard Well Field
Source: MacKay & Somps 2011a:19

Accelerated Construction of the North Service Area Pipeline

The Accelerated Construction of the NSAP scenario assumes the existing capacity of the NVWF and Mather Housing groundwater system would meet water demands of the SPA until 2012. This scenario further assumes that the NSAP would be constructed and online by 2012 and would provide surface water to meet the remaining water demands of the SPA at that time. A comparison of water supply and demand under this scenario is shown in Table 3.17-10.

Because water supply would be adjusted by SCWA to meet demand, neither a deficit nor a surplus of water would occur.

Delayed Construction of the North Service Area Pipeline

The Delayed Construction of the NSAP scenario assumes the existing capacity of the NVWF and Mather Housing groundwater system would meet water demands of the SPA until 2012. At this point, the NVWF would require

expansion to its full capacity. Under this scenario, the NSAP is anticipated to be constructed and online by 2013 and would provide surface water to meet the remaining water demands of the SPA at that time. A comparison of water supply and demand under this scenario is shown in Table 3.17-11.

As shown in Table 3.17-10, SCWA has adequate water supplies available to meet projected water demands under the No USACE Permit, Proposed Project, Biological Impact Minimization, and Conceptual Strategy Alternatives.

As shown in Table 3.17-11, SCWA has adequate water supplies available to meet projected water demands under the No USACE Permit, Proposed Project, Biological Impact Minimization, and Conceptual Strategy Alternatives. Because water supply would be adjusted by SCWA to meet demand, neither a deficit nor a surplus of water would occur.

Conversion of the Anatolia Raw Groundwater Transmission Pipeline

The Conversion of the Anatolia Raw Groundwater Transmission Pipeline scenario assumes the existing capacity of the NVWF and Mather Housing groundwater system would meet water demands of the SPA until 2012. At this point, the Vineyard Surface WTP would be operational and the Anatolia raw groundwater transmission pipeline would be converted to a treated surface water transmission pipeline and the NVWF and Anatolia WTP would be temporarily shut down (see Impact 3.17-4, below). Under this scenario, the NSAP is anticipated to be constructed and online by 2019 and would provide surface water to meet the remaining water demands of the SPA at that time. The NVWF and Anatolia WTP would then be reactivated to provide groundwater extraction and treatment to the SPA. A comparison of water supply and demand under this scenario is shown in Table 3.17-12.

As shown in Table 3.17-12, SCWA has adequate water supplies available to meet projected water demands under the No USACE Permit, Proposed Project, Biological Impact Minimization, and Conceptual Strategy Alternatives. Because water supply would be adjusted by SCWA to meet demand, neither a deficit nor a surplus of water would occur.

Groundwater Intensive Development with the SunCreek Groundwater Wells

The Groundwater Intensive Development with the SunCreek Groundwater Wells scenario assumes the existing capacity of the NVWF and Mather Housing groundwater system would meet water demands of the SPA until 2012. At that point, this scenario assumes that the NVWF would require expansion to its full capacity and the SunCreek groundwater wells and treatment plant would be constructed and operational by 2013 (see Impact 3.17-5 below). This scenario further assumes that the NSAP would be operational in 2015 and would provide surface water to meet the remaining water demands of the SPA at that time. A comparison of water supply and demand under this scenario is shown in Table 3.17-13.

As shown in Table 3.17-13, SCWA has adequate water supplies available to meet projected water demands under the No USACE Permit, Proposed Project, Biological Impact Minimization, and Conceptual Strategy Alternatives. Because water supply would be adjusted by SCWA to meet demand, neither a deficit nor a surplus of water would occur.

Impact Conclusion

As shown by the analysis in this EIR/EIS, which is consistent with the Zone 40 WSMP, Zone 41 UWMP, and the WSA prepared by SCWA for the project, reliable, long-term water supplies would be available to serve projected demand from Zone 40 users through 2030, including demand from SPA. As shown in Tables 3.17-10 through 3.17-13, SCWA has adequate water supplies available to meet projected water demands under the No USACE Permit, Proposed Project, Biological Minimization, and Conceptual Strategy Alternatives regardless of the water delivery scenario. In the long term, SCWA anticipates the majority of water demands in the NSA (including the SPA) would be met with surface water. However, the year-to-year mix of surface and groundwater varies depending on a large number of variables and surface water and groundwater supplies would be adjusted as necessary to meet the demands of the NSA as part of its conjunctive use program (MacKay & Somps 2011a:8, SCWA

2006:4-31). Therefore, there is reasonable likelihood that SCWA's long-term water supplies would be available to serve the No USACE Permit, Proposed Project, Biological Impact Minimization, and Conceptual Strategy Alternatives and this impact is considered **direct** and **less than significant**. **No indirect** impacts would occur. ***[Similar]***

In addition, the City would implement General Plan Actions ISF 2.4.1 and 2.4.2 (City of Rancho Cordova 2006b:13 and 14). These actions would require the project applicants for any particular discretionary development application to identify proposed water supplies and delivery systems prior to project approval to the satisfaction of the City. The project applicants any particular discretionary development application would identify that SCWA has legal entitlement to the water source and that the water source is available or reasonably foreseeable under normal, dry, and multiple dry years over a 20-year planning horizon for the amount of development proposed by the project. Therefore, General Plan Actions ISF 2.4.1 and 2.4.2 would ensure that a long-term, reliable water supply for individual projects is available or that needed improvements would be in place before approval of project-specific discretionary land-use entitlements and approvals, including all final small-lot maps; or for nonresidential projects, before issuance of use permits, building permits, or other entitlements.

Although there is a high degree of certainty that SCWA would be able to supply the project in the long term, the preferred rate of water supply for the project cannot be delivered until the Vineyard Surface WTP, the proposed NSAPP, the proposed Florin Road/Sunrise Boulevard pipeline, proposed NVWF Wells 4 through 6, and potentially the Anatolia surface water transmission pipeline are constructed and online. The Vineyard Surface WTP, the proposed NSAPP, and the proposed NVWF Wells 4 through 6 were identified and analyzed programmatically in the Zone 40 WSMP EIR and at the project level in IS/MNDs prepared for these facilities. Potentially significant environmental impacts identified in these project-level CEQA documents for these facilities would be reduced to a less-than-significant level with implementation of the mitigation measures incorporated as part of those projects. The physical impacts of constructing the Florin Road/Sunrise Boulevard pipeline and Anatolia surface water transmission pipeline facilities are addressed below in Impacts 3.17-3 and 3.17-4, respectively, and impacts associated with the construction of these facilities would be reduced to a less-than-significant level with implementation of the mitigation measures identified herein. Therefore, there are no known significant regulatory and environmental obstacles for construction and operation these facilities.

It is assumed that once these facilities are developed, the water supplies would continue to flow to SCWA without interruption, consistent with its existing water supply contracts, barring a major shift in climate or policy, or unless the California water law principles described earlier are applied in a significantly more restrictive manner. Therefore, SCWA would be able to supply the project water in the long term.

Mitigation Measure: No mitigation measures are required.

ID

As discussed above, SCWA would provide water supplies to the SPA through its Zone 40 conjunctive-use water supply system. Surface water would be diverted from the Sacramento River via the FRWP facilities and conveyed to the Vineyard Surface WTP for treatment. Treated water would then be conveyed to the NSA through the NSAP and Florin Road/Sunrise Boulevard pipeline (see Impacts 3.17-2 and 3.17-3, below). Alternatively, during the early phase of SunCreek development, surface water could be provided in the interim through the temporary conversion of the Anatolia raw groundwater transmission pipeline to a treated surface water transmission pipeline after the Vineyard Surface WTP becomes operational (see Impact 3.17-4, below). Groundwater would be provided by the NVWF, Mather Housing groundwater system, and SunCreek groundwater wells (see Impacts 3.17-2 and 3.17-5, below).

Table 3.17-9 summarizes the water demands under the Increased Development Alternative by 5-year increments over a 20-year planning horizon and the total projected water demand for the Increased Development Alternative is 3,478 afy. A comparison of water supplies available to meet projected water demands for the Increase Development Alternative under each of the four water supply scenarios is summarized in Tables 3.17-10 through

3.17-13, above. In the long term, SCWA anticipates the majority of water demands in the NSA (including the SPA) would be met with surface water. The year-to-year mix of surface and groundwater varies depending on a large number of variables and surface water and groundwater supplies would be adjusted as necessary to meet the demands of the NSA as part of its conjunctive use program and neither a deficit nor a surplus of water would occur (MacKay & Somps 2011a:8, SCWA 2006:4-31). As shown in Tables 3.17-10 through 3.17-13, SCWA would have adequate water supplies available to meet projected water demands under the Increased Development Alternative.

However, the WSA prepared for the project concluded that because the water demand under the Increased Development Alternative (3,478 afy) is more than the water demand estimated by SCWA for the SPA (3,176 afy), sufficient water supplies may not be available to meet water demands (SCWA 2011b:27).

City General Plan Actions ISF 2.4.1 and 2.4.2 (City of Rancho Cordova 2006b:13 and 14) require that the project applicants for any particular discretionary development application must identify proposed water supplies and delivery systems prior to project approval to the satisfaction of the City. The project applicants for any particular discretionary development application would be required to identify that SCWA has legal entitlement to the water source and that the water source is available or reasonably foreseeable under normal, dry, and multiple dry years over a 20-year planning horizon for the amount of development proposed by the project. Therefore, General Plan Actions ISF 2.4.1 and 2.4.2 would ensure that a long-term, reliable water supply for individual projects is available or that needed improvements would be in place before approval of project-specific discretionary land-use entitlements and approvals, including all final small-lot maps; or for nonresidential projects, before issuance of use permits, building permits, or other entitlements. Therefore, this **direct** impact is considered **less than significant. No indirect** impacts would occur. ***[Greater]***

It is assumed that once the water facilities are developed, the water supplies would continue to flow to SCWA without interruption, consistent with its existing water supply contracts, barring a major shift in climate or policy, or unless the California water law principles described earlier are applied in a significantly more restrictive manner. Therefore, SCWA would be able to supply the project water in the long term.

Mitigation Measure: No mitigation measures are required.

IMPACT 3.17-2 **Need for Off-Site Water Conveyance, Storage, and Treatment Facilities.** *Project implementation would result in increased demand for water supply. Off-site water conveyance, storage, and treatment facilities would be required to deliver water to customers on the SPA.*

NP

Under the No Project Alternative, no project-related development would occur and there would be no new urban uses (e.g., residential or commercial land uses) that would increase the demand for off-site water conveyance, storage, or treatment facilities. Therefore, **no direct** or **indirect** impacts would occur. ***[Lesser]***

NCP, PP, BIM, CS, ID

As described in Impact 3.17-1 above, four water supply scenarios have been identified as options for providing water to the SPA. Under all four water supply scenarios, surface water would be diverted from the Sacramento River via the FRWP facilities and conveyed to the Vineyard Surface WTP for treatment. The FRWP was completed and became operational in April 2010. SCWA will begin using FRWP after completion of the Vineyard Surface WTP, which is currently under construction and is anticipated to be operational in November 2011. After the water is treated at the Vineyard Surface WTP, it would be delivered to the SPA through the proposed NSAP and proposed Florin Road/Sunrise Boulevard pipeline (see Impact 3.17-3 below). In addition, surface water could be provided in the interim through the temporary conversion of the Anatolia raw groundwater

transmission pipeline to a treated surface water transmission pipeline after the Vineyard Surface WTP becomes operational (see Impact 3.17-4 below).

Groundwater would be provided by the NVWF, the Mather Housing groundwater system, and the SunCreek groundwater wells. Because the SunCreek wells would be located on the SPA, the impacts from construction and operation of these wells are discussed under Impact 3.17-5, "Need for On-Site Water Conveyance Facilities," below.

SCWA has constructed the first phase of the NVWF, consisting of three wells (Wells 1-3) and three filters. Ultimately the well field would consist of up to seven wells, and Wells 4 through 7 will be constructed as new water supplies are required. Groundwater from the NVWF is conveyed and treated at the Anatolia WTP. Currently, the Anatolia WTP has a design capacity of approximately 6.5 mgd (4,500 gallons per minute). As of 2009, the average day demand was approximately 2.1 mgd and the maximum day demand was 4.3 mgd. Expansion of the Anatolia WTP to its ultimate capacity of 13.0 mgd is required to provide water treatment for build-out of the NVWF. SCWA would upgrade the Anatolia WTP when additional water treatment capacity is required.

The Mather Housing groundwater system currently serves development in and around Mather Field as well as development along the Sunrise Boulevard corridor. The Mather Housing water transmission pipeline connects to the Sunrise Douglas Community Plan Area at the intersection of Douglas Road and Sunrise Boulevard. However, treated water from the Mather Housing groundwater system is prevented from reaching this area due to differences in pressure and prevents SCWA from utilizing the full 6.0-mgd capacity of the Mather Housing groundwater system. Modifications to existing pumping facilities by SCWA would allow water currently not being used in Mather Field and the Sunrise Corridor to be conveyed to the SDCP/SRSP, including the SPA, to meet water demands, and no new facilities would be required (MacKay & Somps 2011a:5).

The preferred rate of water supply for the project cannot be delivered until the Vineyard Surface WTP, which is currently under construction; the proposed NSAPP; and proposed NVWF Wells 4 through 6 are online. Because there is a relationship between the project and the need for the Vineyard Surface WTP, the proposed NSAPP, and proposed NVWF Wells 4 through 6, approval of the project would contribute indirectly to impacts identified in the IS/MNDs prepared for these facilities. These IS/MNDs are hereby incorporated by reference and summarized below.

North Vineyard Well Field

The environmental impacts of the construction and operation of the NVWF were analyzed at a programmatic level in the original 2001-2002 SDCP/SRSP EIR (and in the Revised SDCP/SRSP Long-Term Water Supply Plan DEIR [AECOM 2011]). Because the NVWF was identified as a facility necessary to supply groundwater to Zone 40, the well field was also analyzed at a programmatic level in the Zone 40 WSMP EIR. SCWA has constructed the first phase of the NVWF, consisting of three wells (Wells 1-3) and three filters.

Project-level IS/MNDs for Well 4 (SCH #2005042042), Well 5 (SCH #2005062109), and Well 6 (SCH #2005072003) were prepared to analyze the environmental impacts of the construction and operation of these wells. The IS/MNDs were circulated for public review and adopted by Sacramento County in 2005. All potentially significant environmental impacts identified in these project-level CEQA documents for Wells 4, 5, and 6 were identified as being reduced to a less-than-significant level with implementation of mitigation measures included in the MNDs. Although the project-level CEQA review is complete, there is currently no time frame for construction of wells 4 through 6. Well 7 has not undergone project-level CEQA review and there is currently no time frame for construction of well 7.

Vineyard Surface Water Treatment Plant

The Vineyard Surface WTP is required to treat surface water conveyed from the Sacramento River via the FRWP. The environmental impacts of the construction and operation of the Vineyard Surface WTP were analyzed at a

programmatic level in the Zone 40 WSMP EIR, and at a project-level in an IS/MND (SCH #20047092050), which was adopted by the County on October 2004. Mitigation measures were identified in the IS/MND that would reduce potentially significant impacts to a less-than-significant level. Construction of the Vineyard Surface WTP began in March 2008 and the plant is anticipated to be operational in November 2011.

North Service Area Pipeline Project

The NSAPP would be required to convey water treated at the Vineyard Surface WTP to the vicinity of the SPA. The NSAP would begin at the Vineyard Surface WTP and convey surface water through one of four alternative alignments to an existing 42-inch transmission main at the intersection of Douglas Road and Sunrise Boulevard. In addition, the NSAPP would construct a booster tank station at one of two proposed sites. The NSAP alternative alignments and booster tank station sites are described in Section 3.17.1, "Affected Environment," under "North Service Area Pipeline Project." (The pipeline necessary to connect the NSAP with the SPA is evaluated below in Impact 3.17-3.)

The environmental impacts of the construction and operation of the NSAP were analyzed at a programmatic level in the Zone 40 WSMP EIR, and at a project-level in an IS/MND (SCH #2010082044), which was circulated for public review in August 2010 (Sacramento County 2010). The IS/MND was adopted by the County in October 2010.

Implementation of mitigation measures identified in the IS/MND would reduce potentially significant impacts to a less-than-significant level. There is currently no time frame for construction of NSAP; however, it is expected that the NSAP would be constructed as demand for treated water begins to exceed the available groundwater supply (MacKay & Somps 2011a:6).

Impact Conclusion

Because the off-site infrastructure required for water conveyance facilities necessary to serve the No USACE Permit, Proposed Project, Biological Impact Minimization, Conceptual Strategy, and Increased Development Alternatives has not been constructed, this impact is considered **direct** and **potentially significant**. ***[Similar]***

In addition, the project would contribute to impacts associated with the construction and operation of the Vineyard Surface WTP; the NSAPP; and NVWF Wells 4, 5, and 6 that would be needed to serve the SPA, among other areas planned for development. Potentially significant environmental impacts identified in these project-level CEQA documents for these facilities would be reduced to a less-than-significant level with implementation of the mitigation measures incorporated as part of those projects. Therefore, the No USACE Permit, Proposed Project, Biological Impact Minimization, Conceptual Strategy, and Increased Development Alternatives would **not indirectly** contribute to any significant and unavoidable impacts associated with the construction and operation of the Vineyard Surface WTP; the NSAPP; and NVWF Wells 4, 5, and 6. ***[Similar]***

> **Mitigation Measure 3.17-2: Submit Proof of an On- and Off-Site Infrastructure Delivery System or Assure that Adequate Financing is Secured.**
>
> The following shall be required for all legislative-level development projects, including community plans, general plan amendments, specific plans, rezonings, and other plan-level discretionary entitlements, but excluding tentative subdivisions maps, parcel maps, use permits, and other project-specific discretionary land-use entitlements or approvals:
>
> - All required water treatment and delivery infrastructure for the project shall be in place at the time of subsequent, project-specific discretionary land-use entitlements or approvals, or shall be assured prior to occupancy through the use of bonds or other sureties to the City's satisfaction. Water infrastructure may be phased to coincide with the phased development of large-scale projects.

The following shall be required for project-specific discretionary land-use entitlements and approvals including, but not limited to, all tentative subdivision maps, parcel maps, or use permits:

- Off-site and on-site water infrastructure sufficient to provide adequate water to the subdivision shall be in place prior to the issuance of building permits or their financing shall be assured to the satisfaction of the City prior to the approval of the Final Map, consistent with the requirements of the Subdivision Map Act, or prior to the issuance of a similar, project-level entitlement for nonresidential land uses.

- Off-site and on-site water distribution systems required to serve the subdivision shall be in place and contain water at sufficient quantity and pressure prior to the issuance of any building permits. Model homes may be exempted from this policy, as determined appropriate by the City, and subject to approval by the City.

Implementation: Project applicants of any particular discretionary development application.

Timing: Before the approval of project-specific, discretionary land-use entitlements and approvals, including all final small-lot maps, or for nonresidential projects, before the issuance of use permits, building permits, or other entitlements.

Enforcement: City of Rancho Cordova Planning Department.

Implementation of Mitigation Measure 3.17-2 would reduce direct, potentially significant impacts under the No USACE Permit, Proposed Project, Biological Impact Minimization, Conceptual Strategy, and Increased Development, Alternatives to a **less-than-significant** level because off-site water conveyance facilities sufficient to convey water supplies to subdivisions or nonresidential uses would be in place before recordation of any final small-lot subdivision map, or before City approval of any similar project-specific, discretionary approval or entitlement required for nonresidential uses.

IMPACT 3.17-3 **Need for Off-Site Water Conveyance Facilities—Florin Road/Sunrise Boulevard Pipeline.** *The project is required to construct a new off-site pipeline in order to convey water from the North Service Area Pipeline (NSAP) to the project site.*

NP

Because no new project-related construction would occur under the No Project Alternative, **no direct** or **indirect** impacts from construction of new off-site water conveyance facilities would occur. ***[Lesser]***

NCP, PP, BIM, CS, ID

The Florin Road/Sunrise Boulevard pipeline would be an extension of the proposed NSAP and would be required to convey surface water from the NSAP to the SPA (see Impact 3.17-2 above). The Florin Road/Sunrise Boulevard pipeline described below that is necessary to serve the SPA has not been constructed, nor have final design plans and specifications been submitted or approved. This pipeline not been subject to CEQA or NEPA compliance; therefore, the following discussion analyzes environmental impacts associated with the construction of the Florin Road/Sunrise Boulevard pipeline.

The Florin Road/Sunrise Boulevard pipeline would be 30 inches in diameter and would connect to the NSAP at the intersection of Florin Road and Eagles Nest Road (see Exhibit 2-9 in Chapter 2, "Alternatives"). The pipeline would extend east within Florin Road for approximately 5,300 feet to the intersection of Florin Road with Sunrise Boulevard and cross the Folsom South Canal. The pipeline would then turn north and travel 10,500 feet within Sunrise Boulevard to the intersection of Kiefer Boulevard where it would connect to the SPA's proposed on-site

water system. The new pipeline would be placed underground within the existing Florin Road and Sunrise Boulevard road rights-of-way and would be suspended underneath the existing bridge crossing over the Folsom South Canal (MacKay & Somps 2011b:11).

The Florin Road/Sunrise Boulevard pipeline would be installed in open trenches using conventional trenching techniques. The trenching techniques include surface grading, trench excavation, pipeline installation, and backfilling and surface repaving or re-grading. A backhoe or excavator would be used to dig trenches for pipe installation. In general, trenches would be 5 to 6 feet wide and 6 to 10 feet deep. Trenches deeper than 5 feet would require shoring to prevent trench failure. The trenches would have vertical sidewalls to minimize construction easement width and amount of soil excavated. It is anticipated that less than 5 acres per day would be disturbed during construction activities (MacKay & Somps 2011b:13).

Jack-and-bore construction techniques would potentially be used at major intersections, including State Route 16 and Sunrise Boulevard. Construction staging areas may be up to 10 acres in size; the location of proposed construction areas is currently unknown (MacKay & Somps 2011b:13).

SCWA anticipates two crews of 16 to 18 construction workers would install the pipeline and would possibly work at opposite ends of the alignment. (MacKay & Somps 2011b:13). This analysis assumes that all construction activities would occur during the daytime hours.

It is anticipated that of the Florin Road/Sunrise Boulevard pipeline installation would occur after construction of the initial two phases of the NSAP. Installation of the Florin Road/Sunrise Boulevard pipeline would require approximately 8 months. Potential environmental impacts associated with construction of the Florin Road/Sunrise Boulevard are evaluated below.

Aesthetics

Installation of the majority of the water-supply pipeline would occur within an existing urban area that is developed with residential, commercial, and industrial land uses; therefore, installation of the underground pipeline would not degrade the surrounding visual character. Although the alignment along Florin Road and the southern end of Sunrise Boulevard are relatively undeveloped and rural in nature, the pipeline would be installed underground, and therefore would not degrade the surrounding visual character. There are no state-designated scenic highway segments adjacent to the water-supply pipeline. The areas where the pipeline would be installed are not visible from any state- or County-designated scenic highways or roadways. Roadway disturbance during construction would be short-term, temporary, and of relatively short duration. Therefore, the proposed underground water-supply pipeline would result in **direct**, **less-than-significant** impacts on visual resources. **No indirect** impacts would occur.

Air Quality

Temporary and short-term construction-related emissions of criteria air pollutants, ozone precursors, toxic air contaminants (TACs), and odors would be generated during pipeline construction. Pipeline construction emissions were modeled over an 8-month period. Construction was presumed to involve a 15,800-foot (3-mile) stretch of paved roadway that would be excavated to a width of 5 feet and a depth of 5 feet (to accommodate a 30-inch pipe). Digging up the existing road was presumed to take about 1 month, as was repaving after the pipeline. Trenching and excavation, as well as backfilling and grading, was assumed to occur over an approximately 6-monthy period. Lastly, it was assumed that a borer would operate for approximately 1 month over a distance of approximately 50 feet at the Sunrise Boulevard/SR 16 intersection. It was assumed that no additional cut and fill material (and associated hauling trips from borrow or landfill sites) would be needed. Emissions were estimated using the Sacramento Metropolitan Air Quality Management District (SMAQMD's) Roadway Construction Emissions Model (SMAQMD 2009), and are summarized in Table 3.7-14. Particulate matter (PM) emissions were modeled assuming that water trucks would be operating during construction activities.

Table 3.17-14
SunCreek Maximum Daily Construction Emissions, 2012
Florin Road/Sunrise Boulevard Pipeline

	ROG lb/day	CO lb/day	NOx lb/day	Total PM_{10} lb/day	Exhaust PM_{10} lb/day	Fugitive Dust PM_{10} lb/day	Total $PM_{2.5}$ lb/day	Exhaust $PM_{2.5}$ lb/day	Fugitive Dust $PM_{2.5}$ lb/day
Maximum Daily Emissions (lbs/day)	6.6	27.4	40.9	3.2	2.2	1.0	2.2	2.0	0.2
Total Emissions (tons/total pipeline)	0.47	1.80	2.24	0.23	0.17	0.07	0.17	0.15	0.01
SMAQMD Construction-Related Thresholds of Significance	-	-	**85**	-	-	-	-	-	-

Notes: ROG = reactive organic gases; lb/day = pounds per day; CO = carbon monoxide; NO_x = oxides of nitrogen; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = respirable particulate matter with a diameter of 2.5 microns or less; SMAQMD = Sacramento Metropolitan Air Quality Management District.
See Appendices L and N for modeling data.
Source: Data modeled by AECOM in 2011

As shown in Table 3.17-14, construction-related NOx emissions would not exceed the SMAQMD threshold of significance, and emissions of other criteria pollutants are extremely low. Therefore, the **direct** impacts on local air quality (carbon monoxide [CO] and PM hotspots) and regional air quality (i.e. ozone and PM) would be **less-than-significant**. **No indirect** impacts would occur.

There are currently only a few rural residences in the immediate vicinity of the proposed pipeline route (i.e., approximately 500 feet), the closest of which located approximately 150 feet south of Florin Road. However, because construction would progress in a linear fashion along Florin Road and Sunrise Boulevard, diesel equipment would only be operating for a few days in the immediate vicinity of these sensitive receptors during the month of construction. Additionally, the predominant wind direction is from the south-southwest; therefore, the sensitive receptors are located upwind of the proposed pipeline. Both carcinogenic and non-carcinogenic TAC exposures at distances 100 feet or more downwind of pipeline construction are unlikely to result in health hazards for a project of this size, which involves a total disturbed area of about 1.8 acres (Bay Area Air Quality Management District [BAAQMD] 2010:9). Because no development that would entail the placement of new sensitive receptors in the immediate vicinity of the pipeline route is planned along the pipeline route in 2012, the **direct** impact of exposures of sensitive receptors to TAC or odor emissions associated with construction of the proposed pipeline is anticipated to be a **less-than-significant**. **No indirect** impacts would occur.

Biological Resources

Construction of the pipeline would not result in adverse effects on biological resources, because the construction would occur in previously disturbed, existing roadways. However, the location of the construction staging area is presently unknown. If the staging area were located in an area where sensitive biological resources such as special-status plants, animals, or sensitive habitats, including wetlands were located, then **direct significant** impacts related to biological resources could occur. **Indirect** impacts to biological resources are discussed below under "Drainage, Hydrology, and Water Quality."

Mitigation Measure 3.17-3a: Perform Biological Surveys at the Construction Staging Area and Avoid Damage or Destruction to Sensitive Resources by Relocating the Staging Area, if Sensitive Biological Resources are Found.

If a previously disturbed area is not available, prior to the establishment of any construction staging area, the project applicant(s) shall retain the services of a qualified professional biologist to perform surveys at the proposed staging area for special-status plants and wildlife and any sensitive habitats such as wetlands or other waters of the U.S., and special-status species that may not be located within the staging area but could be disturbed by construction activities (e.g., raptors). If sensitive biological resources are found at a proposed staging area, another potential staging area shall be identified and evaluated until a suitable site found to be devoid of sensitive resources is identified. The final construction staging area selected shall not be located in any area that would damage or destroy any special-status plant population or habitat for any state or Federally listed special-status wildlife species (e.g., vernal pools, elderberry shrubs, Swainson's hawk nest site), require fill or result in any indirect impacts to any wetland or other waters of the U.S. or waters of the state, or require take of any special-status wildlife species (as determined by the qualified professional biologist). The project applicant(s) shall first seek a previously disturbed area for staging.

To avoid disturbance to nesting wildlife species (e.g., raptors) the following measures shall be applied:

- Conduct preconstruction surveys for active nests of Swainson's hawks, white-tailed kite, burrowing owls, and other raptors, at the proposed staging area and within 0.5 mile.

- If active nests are found, impacts on nesting Swainson's hawks and other raptors shall be avoided by establishing appropriate buffers around the nests. No project activity shall commence within the buffer area until the young have fledged, the nest is no longer active, or until a qualified biologist has determined in coordination with DFG that reducing the buffer would not result in nest abandonment. DFG guidelines recommend establishing buffers of 0.25- to 0.5-mile, but the size of the buffer may be adjusted if a qualified biologist and the City, in consultation with DFG, determine that such an adjustment would not be likely to adversely affect the nest.

- Monitoring of the nest by a qualified biologist during and after construction activities shall occur (to be funded by the project applicant[s]) if the activity has potential to adversely affect the nest.

Implementation: Before the approval of grading plans and before/during any ground-disturbing activities for the Florin Road/Sunrise Boulevard Pipeline.

Timing: Project applicants of all project phases where construction of the Florin Road/ Sunrise Boulevard Pipeline is required.

Enforcement: City of Rancho Cordova Planning Department.

Cultural Resources

Because the new water-supply pipeline would be placed within the existing roadway, the potential to disturb or destroy any known cultural resources is low (because roadway grading operations would have already affected any resources that previously existed). However, there is always a possibility of encountering intact, unknown buried cultural resources or human remains, and this could result in **direct, potentially significant** impacts on cultural resources. **No indirect** impacts would occur.

Mitigation Measure: Implement Mitigation Measure 3.5-3 (Provide Preconstruction Worker Education and Stop Potentially Damaging Work if Human Remains are Uncovered During Construction).

Mitigation Measure 3.17-3b: Perform Cultural Surveys at the Construction Staging Area and Avoid Damage or Destruction to Archaeological Resources by Relocating the Staging Area if Cultural Resources are Found.

If a previously disturbed area is not available, prior to the establishment of any construction staging area, the project applicants shall retain the services of a qualified professional archaeologist to perform surveys at the proposed staging area for cultural resources. If cultural resources are found at a proposed staging area, another potential staging area shall be identified and evaluated until a suitable site found to be devoid of sensitive resources is identified. The final construction staging area selected shall not be located in any area that would damage or destroy cultural resources. The project applicants shall first seek a previously disturbed area for staging.

To avoid damage or destruction of cultural resources, the project applicants of all project phases where construction of the pipeline is required shall hire a qualified archaeologist to perform a cultural records search and survey, if appropriate. If any cultural resources are discovered along the pipeline route or within the selected construction staging area as a result of the records search, the staging area shall be moved to a different location without any known cultural resources, and Mitigation Measure 3.5-3 shall be implemented in the vicinity of the known resources along the pipeline route.

Implementation: Before the approval of grading plans and before/during any ground-disturbing activities for the Florin Road/Sunrise Boulevard Pipeline.

Timing: Project applicants of all project phases where construction of the Florin Road/Sunrise Boulevard Pipeline is required.

Enforcement: City of Rancho Cordova Planning Department.

Drainage, Hydrology, and Water Quality

The proposed water-supply pipeline would be placed in the rights-of-way of existing roads, and would result in temporary, short-term construction-related impacts. Such activities could result in soil erosion, stormwater discharges of suspended solids, and increased turbidity and potential mobilization of other pollutants from project construction sites to flow as contaminated runoff to drainage channels on-site and ultimately off-site. Many construction-related wastes have the potential to degrade existing water quality by altering the dissolved-oxygen content, temperature, pH, suspended-sediment and turbidity levels, or nutrient content, or by causing toxic effects on the aquatic environment. Project construction activities that are implemented without mitigation could violate water quality standards or cause indirect harm to aquatic organisms. Therefore, construction-related activities could result in **direct** and **indirect, potentially significant** impacts on hydrology, drainage, and water quality.

Mitigation Measure: Implement Mitigation Measure 3.9-1 (Acquire Appropriate Regulatory Permits and Prepare and Implement an Erosion and Sediment Control Plan, SWPPP, and BMPs).

Mitigation Measure: Implement Mitigation Measure 3.17-3a.

Environmental Justice

The proposed water-supply pipeline would provide water supplies to new housing and other land uses identified for the project. The proposed water-supply pipeline itself would not cause a disproportionately high and adverse impact on low-income populations or create a disproportionate placement of adverse environmental impacts on minority communities. Therefore, the water-supply pipeline would result in **no direct** or **indirect** impacts on environmental justice.

Geology, Soils, and Mineral Resources

The proposed pipeline route has relatively flat topography and is not located in or near a landslide hazard area, and known active seismic sources are located more than 30 miles from the pipeline. Therefore, potential damage to the pipeline from seismic activity and related geologic hazards would be a **direct**, **less-than-significant** impact. **No indirect** impacts would occur.

The pipeline would not be located in an area of known mineral resources as designated by the California Division of Mines and Geology, or as designated by the City of Rancho Cordova General Plan. Therefore, there would be **no direct** or **indirect** impact from potential loss of mineral resources.

Construction activities would result in the temporary, short-term disturbance of soil and would expose disturbed areas to winter storm events, which could result in soil runoff and localized erosion. A **direct**, **potentially significant** impact from soil erosion could result from construction activities. **No indirect** impacts would occur.

The pipeline would be placed in soils identified by the Natural Resources Conservation Service [NRCS] (2011) as: Redding gravelly loam, Red Bluff-Redding complex, San Joaquin silt loam, Fiddyment fine sandy loam, and Hicksville loam. There is potential for the sides of trench excavations to cave for all of these soils, and most are moderate to highly expansive (which could render the material unsuitable for backfill). These soils have a moderate to high potential for corrosion of steel and concrete. Therefore, potential damage to the pipeline from soil hazards would be a **potentially significant, direct** impact. **No indirect** impacts would occur.

> **Mitigation Measure: Implement Mitigation Measures 3.7-1a: (Prepare Site-Specific Geotechnical Report per CBC Requirements and Implement Appropriate Recommendations) and 3.9-1 (Acquire Appropriate Regulatory Permits and Prepare and Implement an Erosion and Sediment Control Plan, SWPPP, and BMPs).**

Greenhouse Gases

Greenhouse gas emissions are cumulative by nature. Construction of the proposed Florin Road/Sunrise Boulevard water supply pipeline would result in the generation of temporary and short-term emissions of greenhouse gases (GHGs) (e.g., CO_2) from the use of on-site heavy-duty construction equipment and worker commute and material transport trips. Total project construction emissions of carbon dioxide (CO_2) were estimated to be 239 metric tons (MT) and 3,929 pounds/day for the year 2012. Only CO_2 emissions were estimated for construction, as nitrogen oxide (N_2O) and methane (CH_4) emissions are about 20 to 40 times lower than CO_2 emissions for off-road vehicles (California Resources Board [ARB] 2010:215,218). Because the emissions would be finite in nature (i.e., only occurring during construction, not during operation), would be lower than the lowest operational air quality management district threshold of significance of 1,100 MT CO_2e/year (the BAAQMD "brightline" threshold), construction-related GHGs would not result in a cumulatively considerable increase in GHGs. In addition, the pipeline would not result in any operational GHG emissions. Thus, the proposed Florin Road/Sunrise Boulevard water supply pipeline would result in a **direct, less-than-significant** impact with respect to the generation of greenhouse gases. **No indirect** impact would occur.

Hazards and Hazardous Materials

Project construction would involve the temporary, short-term storage, use, and transport of hazardous materials (e.g., asphalt, fuel, lubricants, and solvents) on local roadways. Transportation of hazardous materials on area roadways is regulated by the California Highway Patrol and the California Department of Transportation, and use of these materials is regulated by California Department of Toxic Substances Control (DTSC), as outlined in Title 22 of the California Code of Regulations. The project's builders, contractors, and suppliers would be required to use, store, and transport hazardous materials in compliance with Federal, state, and local regulations during project construction; therefore, the project would not create a significant hazard to the public or the environment. There are no schools serving kindergarten through 12th grade students within one-half mile of the project site. The pipeline route is not located on the Cortese List of hazardous materials sites. Construction of the underground

pipeline would have no effect on safety related to Mather Airport. Impacts related to implementation of emergency plans are addressed below under "Public Services." Most of the pipeline route and vicinity are in an urban area that is already developed; the rural areas along Florin Road and the southern end of Sunrise Boulevard consist of agricultural land and are not located in a high wildfire hazard zone. Thus, there would be no impact related to wildfire hazards. Therefore, there would be **no direct** or **indirect** impacts related to hazards and hazardous materials.

Land Use and Planning

Because the proposed water-supply pipeline would be placed in the rights-of-way of existing roads, it would not divide an established community, and it would be consistent with the City General Plan, zoning designations, and other adopted land use plans, policies, and regulations. Therefore, the proposed water-supply pipeline would have **no direct** or **indirect** impacts related to land use.

Noise

Noise levels from project construction activities would be short term and the locations would change as construction proceeds along the pipeline route. There are currently only a few rural residences in the immediate vicinity of the proposed pipeline route, the closest of which is located approximately 150 feet south of Florin Road. The predominant wind direction is from the south-southwest and therefore the sensitive receptors along Florin Road are located upwind of the noise from construction of the proposed pipeline. However, construction noise levels could temporarily exceed applicable standards at these noise-sensitive receptors. Typical noise levels attributable to heavy-construction equipment are listed in Table 3.11-8 of Section 3.11, "Noise." Construction noise levels could exceed the City's standards for exterior and interior noise levels of 60 dBA L_{dn} and 45 dBA L_{dn}, respectively. However, the City's noise ordinance provides that any construction occurring between the hours of 7 a.m. and 6 p.m. is exempt from the noise standards. Since pipeline installation would only occur during the daylight hours, construction-generated noise would result in a **direct**, **less-than-significant**, temporary, short-term noise impact on nearby noise-sensitive land uses. **No indirect** impacts would occur.

Paleontological Resources

According to the geologic map prepared by Wagner et al. (1987), the proposed water-supply pipeline would be constructed within the Laguna Formation. In keeping with the significance criteria of the Society of Vertebrate Paleontology (1995), all vertebrate fossils are generally categorized as being of potentially significant scientific value. Sediments referable to the Laguna Formation are generally devoid of vertebrate fossils, and no previously recorded fossil sites from this formation are known from either the project site or the surrounding area. Thus, sediments that underlie the proposed water-supply pipeline are considered to be of low paleontological sensitivity. Furthermore, the pipeline would be placed within the existing roadway where any paleontological resources that may have been present would already have been destroyed by previous road construction activities. Therefore, the potential for project-related construction activities to affect unique paleontological resources would result in a **direct**, **less-than-significant** impact. **No indirect** impacts would occur.

Parks and Recreation

The proposed water-supply pipeline would provide water supplies to new housing and other land uses identified for the project. The proposed water-supply pipeline itself would not increase demand for parks and recreational facilities. Therefore, the water-supply pipeline would result in **no direct** impacts on parks and recreation. The construction of the proposed water-supply pipeline would result in **indirect**, **less-than-significant** impacts on parks and recreation facilities, and these impacts are addressed in Section 3.12, "Parks and Recreation," of this DEIR/DEIS.

Population, Employment, and Housing

The proposed water-supply pipeline would provide water supplies to new housing and other land uses identified for the project. The proposed water-supply pipeline itself would not increase population. Therefore, the water-supply pipeline would result in **no direct** impacts on these population, employment, and housing. The construction of the proposed water-supply pipeline would result in **indirect**, **less-than-significant** impacts on these public services, and these impacts are addressed in Section 3.13, "Population, Employment, and Housing," of this DEIR/DEIS.

Public Services

The proposed water-supply pipeline would provide water supplies to new housing and other land uses identified for the project. The proposed water-supply pipeline itself would not increase demand for fire protection facilities, services, and equipment or police protection facilities, services, and equipment because existing facilities are adequate to serve construction of the pipeline. Construction of the underground pipeline would have no effect on school facilities and services because the pipeline would supply water on to the SPA.

However, with regards to emergency plans, construction activities could result in temporary lane closures, increased truck traffic, and other roadway effects that could slow or stop emergency vehicles, temporarily increasing response times and impeding existing service. Therefore, the proposed water-supply pipeline and pump station would result in **direct**, **potentially significant** impacts related to the temporary obstruction of roadways during construction. **No indirect** impacts would occur.

> **Mitigation Measure: Implement Mitigation Measure 3.14-1 (Prepare and Implement a Construction Traffic Control Plan).**

Traffic and Transportation

Short-term, temporary impacts of construction on traffic are addressed above under "Public Services." Water supply pipeline installation would not result in permanent increases to roadway or intersection level of service standards or increases in peak hour traffic volumes, nor would it affect alternative modes of transportation, because the pipeline would be installed underground. Therefore, the proposed water supply pipeline would result in **no direct** or **indirect** impacts related to traffic and transportation.

Utilities and Service Systems

The proposed water-supply pipeline would provide water supplies to new housing and other land uses identified for the SPA. The proposed water-supply pipeline itself would not increase demand for water; wastewater service; solid-waste disposal, or electricity, natural gas, and communications services and systems.

However, because the new infrastructure required for water conveyance facilities necessary to serve the project (Florin Road/Sunrise Boulevard pipeline) has not been constructed, nor have final design plans and specifications been submitted, this impact is considered **direct** and **potentially significant**. In addition, as described above, environmental impacts associated with the construction of these facilities could result in **potentially significant** impacts on biological resources; cultural resources; drainage, hydrology, and water quality; and public services. Mitigation measures for these indirect impacts are listed above.

> **Mitigation Measure: Implement Mitigation Measure 3.17-2.**

Impact Conclusion

Implementation of Mitigation Measure 3.17-2 would reduce direct, potentially significant impacts under the No USACE Permit, Proposed Project, Biological Impact Minimization, Conceptual Strategy, and Increased

Development Alternatives related to the provision of required off-site water conveyance facilities to a **less-than-significant** level, because off-site water conveyance facilities sufficient to convey water supplies to subdivisions or nonresidential uses would be in place before recordation of any final small-lot subdivision map, or before the City approves any similar project-specific, discretionary approval or entitlement required for nonresidential uses.

Implementation of Mitigation Measures 3.17-3a and 3.9-1 would reduce direct and indirect impacts at the construction staging area to biological resources under the No USACE Permit, Proposed Project, Biological Impact Minimization, Conceptual Strategy, and Increased Development Alternatives to a **less-than-significant** level because project-related construction staging activities would be sited to avoid special-status species or sensitive habitats.

Implementation of Mitigation Measures 3.5-3, 3.7-1a, 3.9-1, 3.14-1, and 3.17-3b would reduce indirect significant impacts under the No USACE Permit, Proposed Project, Biological Impact Minimization, Conceptual Strategy, and Increased Development Alternatives related to off-site water conveyance facilities to a **less-than-significant** level, because adverse impacts on cultural resources would be avoided, appropriate recommendations of a geotechnical engineer would be incorporated into the project design, appropriate BMPs would be implemented to control erosion, and a traffic plan would be developed and implemented during construction activities.

IMPACT 3.17-4 **Need for Off-Site Water Conveyance Facilities—Potential Conversion of the Anatolia Raw Groundwater Transmission Pipeline.** *In the event that construction of the NSAP were to be delayed, the Anatolia raw groundwater transmission pipeline could be converted to a treated surface water transmission pipeline by constructing a surface water transmission pipeline from the Vineyard Surface WTP to the existing Anatolia groundwater transmission pipeline.*

NP

Because no new project-related construction would occur under the No Project Alternative, **no direct** or **indirect** impacts from construction of off-site water conveyance facilities would occur. ***[Lesser]***

NCP, PP, BIM, CS, ID

An option for delivery of surface water to the NSA, including the SPA, in the event that construction of the NSAP was delayed, would be to convert the Anatolia raw groundwater transmission pipeline to a treated surface water transmission pipeline once the Vineyard Surface WTP becomes operational in 2011 (see "Conversion of the Anatolia Groundwater Transmission Pipeline" under Impact 3.17-1 and Exhibit 2-10 in Chapter 2, "Alternatives"). The conversion of the Anatolia transmission pipeline described below has not been constructed, nor have final design plans and specifications been submitted or approved. This transmission pipeline not previously been subject to CEQA or NEPA compliance; therefore, the following discussion analyzes environmental impacts associated with the conversion of the Anatolia raw groundwater transmission pipeline to a treated surface water transmission pipeline.

Before the conversion of the existing Anatolia groundwater transmission pipeline to a surface water transmission pipeline could occur, the project would construct a portion of the NSAP beginning at the Vineyard Surface WTP. A new 66-inch pipeline would travel 4,600 feet east along Florin Road to its intersection with Excelsior Road. From this point, a new section of 30-inch pipeline would extend north along Excelsior Road for approximately 2,500 feet where it would then connect to the existing 30-inch raw groundwater transmission pipeline in Sunrise Boulevard that currently conveys raw groundwater from the NVWF to the Anatolia WTP. Once connected, the NVWF and Anatolia WTP would be temporarily shutdown. The existing NVWF wells would be retrofitted for periodic exercising during the interim shutdown period, which could include minor piping changes to allow for the recirculation of pumped groundwater during exercise periods. Minor piping modifications in and around the

vicinity of the Anatolia WTP would be required to connect the converted transmission pipeline to the existing treated water transmission pipelines and on-site storage tanks (MacKay & Somps 2011b:16).

The Anatolia surface water transmission pipeline would be installed in open trenches using conventional trenching techniques. The trenching techniques include surface grading, trench excavation, pipeline installation, and backfilling and surface repaving or re-grading. A backhoe or excavator would be used to dig trenches for pipe installation. In general, trenches would be 5 to 6 feet wide and 6 to 10 feet deep. Trenches deeper than 5 feet would require shoring to prevent trench failure. The trenches would have vertical sidewalls to minimize construction easement width and amount of soil excavated.

SCWA anticipates two crews of 16 to 18 construction workers would install the pipeline and would possibly work at opposite ends of the alignment. Construction work would occur during the daytime hours. This analysis assumes that all construction activities would take place during the daytime. The potential environmental impacts associated with the Anatolia pipeline conversion are evaluated below.

Aesthetics

Installation of the water-supply pipeline would occur within an existing urban area that is developed with residential, commercial, and industrial land uses; therefore, installation of the underground pipeline would not degrade the surrounding visual character. Minor modifications to above-ground structures to provide pipeline connections and pumping connections would not change the existing visual character at the Anatolia WTP. There are no state-designated scenic highway segments adjacent to the water-supply pipeline or the Anatolia WTP. The areas where the improvements would be installed are not visible from any state- or County-designated scenic highways or roadways. Roadway disturbance and modifications at the Anatolia WTP during construction would be short-term, temporary, and of relatively short duration. Therefore, the proposed Anatolia pipeline conversion would result in **direct**, **less-than-significant** impacts on visual resources. **No indirect** impacts would occur.

Air Quality

Temporary and short-term construction-related emissions of criteria air pollutants, ozone precursors, TACs, and odors would be generated during pipeline construction. For purposes of air quality modeling, construction of the new pipeline associated with the Anatolia raw groundwater conversion was assumed to occur for one month in 2012. Construction was presumed to involve a 7,100-foot (1.3-mile) stretch of paved roadway that would be excavated to a width of 5 feet and a depth of 5 feet (to accommodate a 66-inch pipe for 4,600 feet and a 30-inch pipe for 2,500 feet), conservatively. Digging up the existing road was presumed to take about a week, as was repaving after the pipeline. Trenching and excavation, as well as backfilling and grading, was assumed to require approximately two weeks. It was assumed that no additional cut and fill material (and associated hauling trips from borrow or landfill sites) would be needed. Emissions were estimated using SMAQMD's Roadway Construction Emissions Model (SMAQMD 2009), and are summarized in Table 3.7-15. Particulate matter (PM) emissions were modeled assuming that water trucks would be operating during construction activities.

As shown in Table 3.17-15, construction-related NO_x emissions would not exceed the SMAQMD threshold of significance, and emissions of other criteria pollutants are extremely low. Therefore, the **direct** impacts on local air quality (CO and PM hotspots) and regional air quality (i.e. ozone and PM) would be **less-than-significant**. **No indirect** impacts would occur.

There are currently several rural residences in the immediate vicinity (i.e., approximately 500 feet) of the proposed Anatolia pipeline conversion, located within approximately 100 feet of Florin Road, both to the north and to the south. However, construction would progress in a linear fashion along Florin Road, and diesel equipment would only be operating for a few days in the immediate vicinity of each existing sensitive receptor during the month of construction. Additionally, the predominant wind direction is from the south-southwest, and the majority of the sensitive receptors are located upwind of the proposed pipeline. Because no development that would result in the placement of new sensitive receptors in the immediate vicinity of the pipeline route is planned

Table 3.17-15
SunCreek Maximum Daily Construction Emissions, 2012
Conversion of Anatolia Raw Groundwater Transmission Pipeline

	ROG lb/day	CO lb/day	NOx lb/day	Total PM_{10} lb/day	Exhaust PM_{10} lb/day	Fugitive Dust PM_{10} lb/day	Total $PM_{2.5}$ lb/day	Exhaust $PM_{2.5}$ lb/day	Fugitive Dust $PM_{2.5}$ lb/day
Maximum Daily Emissions (lb/day)	4.4	18.0	28.8	3.9	1.9	2.0	2.1	1.7	0.4
Total Project Emissions (tons/project)	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0
SMAQMD Construction-Related Thresholds of Significance	-	-	**85**	-	-	-	-	-	-

Notes: ROG = reactive organic gases; lb/day = pounds per day; CO = carbon monoxide; NO_x = oxides of nitrogen; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = respirable particulate matter with a diameter of 2.5 microns or less; SMAQMD = Sacramento Metropolitan Air Quality Management District.
See Appendices L and N for modeling data.
Source: Data modeled by AECOM in 2011

in 2012, the **direct** impact of exposure of sensitive receptors to TAC or odor emissions associated with the proposed pipeline is anticipated to be a **less-than-significant** during the 2012 construction year. **No indirect** impacts would occur.

Biological Resources

Construction of the pipeline would not result in adverse effects on biological resources, because the construction would occur in previously disturbed, existing roadways. Minor modifications and pipeline connections at the Anatolia WTP would not result in adverse effects on biological resources because the construction would occur in within the previously disturbed area within the perimeter fence at the WTP, which does not contain sensitive biological resources or habitats. However, the location of the construction staging area is presently unknown. If the staging area were located in an area where sensitive biological resources such as special-status plants, animals, or sensitive habitats including wetlands were located, then **direct significant** impacts related to biological resources could occur. **Indirect** impacts to biological resources are discussed below under "Drainage, Hydrology, and Water Quality."

Mitigation Measure: Implement Mitigation Measure 3.17-3a.

Cultural Resources

Because the new water-supply pipeline would be placed within the existing roadway and within the existing perimeter fence at the Anatolia WTP, the potential to disturb or destroy any known cultural resources is low (because grading operations would have already affected any resources that previously existed). However, there is always a possibility of encountering intact, unknown buried cultural resources or human remains, and this could result in **direct, potentially significant** impacts on cultural resources. **No indirect** impacts would occur.

Mitigation Measure: Implement Mitigation Measure 3.5-3 (Provide Preconstruction Worker Education and Stop Potentially Damaging Work if Human Remains are Uncovered During Construction).

Mitigation Measure: Implement Mitigation Measure 3.17-3b.

Drainage, Hydrology, and Water Quality

The proposed water-supply pipeline and minor modifications at the Anatolia WTP would result in temporary, short-term construction-related impacts. Such activities could result in soil erosion, stormwater discharges of suspended solids, and increased turbidity and potential mobilization of other pollutants from project construction sites to flow as contaminated runoff to drainage channels on-site and ultimately off-site. Many construction-related wastes have the potential to degrade existing water quality by altering the dissolved-oxygen content, temperature, pH, suspended-sediment and turbidity levels, or nutrient content, or by causing toxic effects on the aquatic environment. Project construction activities that are implemented without mitigation could violate water quality standards or cause indirect harm to aquatic organisms. Therefore, construction-related activities could result in **direct** and **indirect, potentially significant** impacts on hydrology, drainage, and water quality.

Mitigation Measure: Implement Mitigation Measure 3.9-1 (Acquire Appropriate Regulatory Permits and Prepare and Implement an Erosion and Sediment Control Plan, SWPPP, and BMPs).

Mitigation Measure: Implement Mitigation Measure 3.17-3a.

Environmental Justice

The Anatolia pipeline conversion would provide water supplies to new housing and other land uses identified for the project. The Anatolia pipeline conversion itself would not cause a disproportionately high and adverse impact on low-income populations or create a disproportionate placement of adverse environmental impacts on minority communities. Therefore, the Anatolia pipeline conversion would result in **no direct** or **indirect** impacts on environmental justice.

Geology, Soils, and Mineral Resources

The pipeline route and Anatolia WTP have relatively flat topography and are not located in or near a landslide hazard area, and known active seismic sources are located more than 30 miles from the pipeline. Therefore, potential damage to structures from seismic activity and related geologic hazards would be a **direct**, **less-than-significant** impact. **No indirect** impacts would occur.

The pipeline route and the Anatolia WTP modifications would not be located in an area of known mineral resources as designated by the California Division of Mines and Geology, or as designated by the City of Rancho Cordova General Plan. Therefore, there would be **no direct** or **indirect** impact from potential loss of mineral resources.

Construction activities would result in the temporary, short-term disturbance of soil and would expose disturbed areas to winter storm events, which could result in soil runoff and localized erosion. A **direct**, **potentially significant** impact from soil erosion could result from construction activities. **No indirect** impacts would occur.

The pipeline alignment would pass through soils identified by the NRCS (2011) as: San Joaquin-Xerarents, Red Bluff loam, Red Bluff-Redding complex, Redding gravelly loam, and San Joaquin silt loam. There is potential for the sides of trench excavations to cave for all of these soils, and most are moderate to highly expansive (which could render the material unsuitable for backfill). These soils have a moderate to high potential for corrosion of steel and concrete. Therefore, potential damage to the pipeline from soil hazards would be a **potentially significant, direct** impact. **No indirect** impacts would occur.

Mitigation Measure: Implement Mitigation Measure 3.7-1a: (Prepare Site-Specific Geotechnical Report per CBC Requirements and Implement Appropriate Recommendations)

Mitigation Measure: Implement Mitigation Measure 3.9-1 (Acquire Appropriate Regulatory Permits and Prepare and Implement an Erosion and Sediment Control Plan, SWPPP, and BMPs).

Greenhouse Gases

Greenhouse gas emissions are cumulative by nature. Construction of the water supply pipeline associated with the Anatolia raw groundwater conversion would result in the generation of temporary and short-term emissions of GHGs (e.g., CO_2) from the use of on-site heavy-duty construction equipment and worker commute and material transport trips. Total project construction emissions of CO_2 were estimated to be 25 MT and 3,360 pounds/day for the year 2012. Only CO_2 emissions were estimated for construction, because N_2O and CH_4 emissions are about 20 to 40 times lower than CO_2 emissions for off-road vehicles (ARB 2010:215,218). Because the emissions would be finite in nature (i.e., only occurring during construction, not during operation), would be lower than the lowest operational AQMD threshold of significance of 1,100 MT CO_2e/year (the BAAQMD "brightline" threshold), construction-related GHGs would not result in a cumulatively considerable increase in GHGs. In addition, the pipeline would not result in any operational GHG emissions over and above those that are already occurring in association with operation of the Anatolia WTP. Thus, the proposed water supply pipeline associated with the Anatolia raw groundwater conversion would result in a **direct, less-than-significant** impact with respect to the generation of greenhouse gases. **No indirect** impact would occur.

Hazards and Hazardous Materials

Project construction would involve the temporary, short-term storage, use, and transport of hazardous materials (e.g., asphalt, fuel, lubricants, and solvents) on local roadways. Transportation of hazardous materials on area roadways is regulated by the California Highway Patrol and the California Department of Transportation, and use of these materials is regulated by DTSC, as outlined in Title 22 of the California Code of Regulations. The project's builders, contractors, and suppliers would be required to use, store, and transport hazardous materials in compliance with Federal, state, and local regulations during project construction; therefore, the Anatolia pipeline conversion would not create a significant hazard to the public or the environment. There is one school, the Sunrise Elementary School, that is located within one-half mile of the Anatolia WTP; however, the WTP is an existing facility that is already permitted to use and store hazardous materials. The Anatolia pipeline conversion would not change the amounts or types of hazardous materials used at the facility. Neither pipeline route nor the Anatolia WTP are located on the Cortese List of hazardous materials sites. Construction of the underground pipeline would have no effect on safety related to Mather Airport. Impacts related to implementation of emergency plans are addressed below under "Public Services." Because the project site and vicinity are in an urban area that is already developed, there would be no impact related to wildfire hazards. Therefore, there would be **no direct** or **indirect** impacts related to hazards and hazardous materials.

Land Use and Planning

Because the proposed water-supply pipeline would be placed in the rights-of-way of existing roads, and because the minor modifications at the Anatolia WTP would occur at an existing facility, they would not divide an established community, and they would be consistent with the City General Plan, zoning designations, and other adopted land use plans, policies, and regulations. Therefore, the Anatolia pipeline conversion would have **no direct** or **indirect** impacts related to land use.

Noise

Noise levels from project construction activities would be short-term in nature and the locations would change as construction proceeds along the pipeline route and at the Anatolia WTP. There are currently several rural residences in the immediate vicinity (i.e., approximately 500 feet) of the proposed Anatolia pipeline conversion, located within approximately 100 feet of Florin Road, both to the north and to the south. Typical noise levels attributable to heavy-construction equipment are listed in Table 3.11-8 of Section 3.11, "Noise." Construction noise levels could exceed the City's standards for exterior and interior noise levels of 60 dBA L_{dn} and 45 dBA L_{dn}, respectively where sensitive receptors are located in close proximity to the Anatolia WTP or the new pipeline installation. However, the City's noise ordinance provides that any construction occurring between the hours of

7 a.m. and 6 p.m. is exempt from the noise standards. Therefore, project-related construction-generated noise would result in a **direct**, **less-than-significant**, temporary, short-term noise impact on nearby noise-sensitive land uses. **No indirect** impacts would occur.

Paleontological Resources

According to the geologic map prepared by Wagner et al. (1987), the proposed water-supply pipeline and minor modifications to the Anatolia WTP would be constructed within the Laguna Formation. In keeping with the significance criteria of the Society of Vertebrate Paleontology (1995), all vertebrate fossils are generally categorized as being of potentially significant scientific value. Sediments referable to the Laguna Formation are generally devoid of vertebrate fossils, and no previously recorded fossil sites from this formation are known from either the project site or the surrounding area. Thus, sediments that underlie the proposed water-supply pipeline and the Anatolia WTP are considered to be of low paleontological sensitivity. Furthermore, the pipeline would be placed within the existing roadway and existing WTP where any paleontological resources that may have been present would already have been destroyed by previous road construction and grading activities. Therefore, the potential for project-related construction activities to affect unique paleontological resources would result in a **direct**, **less-than-significant** impact. **No indirect** impacts would occur.

Parks and Recreation

The Anatolia pipeline conversion would provide water supplies to new housing and other land uses identified for the SPA. The Anatolia pipeline conversion itself would not increase demand for parks and recreational facilities. Therefore, the Anatolia pipeline conversion would result in **no direct** or **indirect** impacts on parks and recreation.

Population, Employment, and Housing

The Anatolia pipeline conversion would provide water supplies to new housing and other land uses identified for the SPA. The Anatolia pipeline conversion itself would not increase population because it would supply water only for the SPA and adequate construction workers are available from the region. Therefore, the Anatolia pipeline conversion would result in **no direct** or **indirect** impacts on these population, employment, and housing.

Public Services

The Anatolia pipeline conversion would provide water supplies to new housing and other land uses identified for the SPA. The Anatolia pipeline conversion itself would not increase demand for fire protection facilities, services, and equipment or police protection facilities, services, and equipment because existing facilities are adequate to serve construction of the pipeline. Construction of the pipeline would have no effect on school facilities and services.

However, with regard to emergency plans, construction activities could result in temporary lane closures, increased truck traffic, and other roadway effects that could slow or stop emergency vehicles, temporarily increasing response times and impeding existing service. Therefore, the Anatolia pipeline conversion would result in **direct**, **potentially significant** impacts related to the temporary obstruction of roadways during construction. **No indirect** impacts would occur.

> **Mitigation Measure: Implement Mitigation Measure 3.14-1 (Prepare and Implement a Construction Traffic Control Plan).**

Traffic and Transportation

Short-term, temporary impacts of construction on traffic are addressed above under "Public Services." Water supply pipeline installation and minor modifications at the Anatolia WTP would not result in permanent increases to roadway or intersection level of service standards or increases in peak hour traffic volumes, nor would it affect

alternative modes of transportation, because the pipeline would be installed underground. Therefore, the Anatolia pipeline conversion would result in **no direct** or **indirect** impacts related to traffic and transportation.

Utilities and Service Systems

The Anatolia pipeline conversion would provide water supplies to new housing and other land uses identified for the SPA. The Anatolia pipeline conversion itself would not increase demand for water; wastewater service; solid-waste disposal, or electricity, natural gas, and communications services and systems.

However, because new infrastructure required for Anatolia pipeline conversion has not been constructed, nor have final design plans and specifications been submitted, this impact is considered **direct** and **potentially significant**. In addition, as described above, environmental impacts associated with the construction of these facilities could result in **indirect** and **potentially significant** impacts on biological resources; cultural resources; drainage, hydrology, and water quality; and public services. Mitigation measures for these indirect impacts are listed above.

Mitigation Measure: Implement Mitigation Measure 3.17-2.

Impact Conclusion

Because the infrastructure required for water conveyance facilities necessary to serve the project (Anatolia pipeline conversion) has not been constructed, nor have final design plans and specifications been submitted, this impact is considered **direct** and **potentially significant**. In addition, as described above, environmental impacts associated with the construction of these facilities could result in **indirect** and **potentially significant** impacts on biological resources; cultural resources; drainage, hydrology, and water quality; and public services. Mitigation measures for these impacts are listed above.

Implementation of Mitigation Measure 3.17-2 would reduce direct, potentially significant impacts under the No USACE Permit, Proposed Project, Biological Impact Minimization, Conceptual Strategy, and Increased Development Alternatives related to the provision of required off-site water conveyance facilities to a **less-than-significant** level, because off-site water conveyance facilities sufficient to convey water supplies to subdivisions or nonresidential uses would be in place before recordation of any final small-lot subdivision map, or before the City approves any similar project-specific, discretionary approval or entitlement required for nonresidential uses.

Implementation of Mitigation Measures 3.17-3a and 3.9-1 would reduce direct and indirect impacts at the construction staging area to biological resources under the No USACE Permit, Proposed Project, Biological Impact Minimization, Conceptual Strategy, and Increased Development Alternatives to a **less-than-significant** level because no special-status species or sensitive habitats would be adversely affected by project-related construction staging activities.

Implementation of Mitigation Measures 3.5-3, 3.7-1a, 3.9-1, 3.14-1, and 3.17-3b would reduce indirect significant impacts under the No USACE Permit, Proposed Project, Biological Impact Minimization, Conceptual Strategy, and Increased Development Alternatives related to off-site water conveyance facilities to a **less-than-significant** level, because adverse impacts on cultural resources would be avoided, appropriate design recommendations of a geotechnical engineer would be incorporated into project design, appropriate BMPs would be implemented to control erosion, and a traffic plan would be developed and implemented during construction activities.

IMPACT 3.17-5 **Need for Off-Site Water Conveyance Facilities—Americanos Boulevard Pipelines.** *The project is required to construct new off-site pipelines to convey Zone 6 water from the North Douglas storage tanks to the project site.*

NP

Because no new project-related construction would occur under the No Project Alternative, **no direct** or **indirect** impacts from construction of off-site water conveyance facilities would occur. ***[Lesser]***

NCP, PP, BIM, CS, ID

Pipelines within the future right-of-way of Americanos Boulevard are required to bring Zone 6 water service to the project site (see Exhibit 2-10 in Chapter 2, "Alternatives" and Appendices H and U). The Americanos Boulevard pipelines described below that are necessary to serve the SPA have not been constructed, nor have final design plans and specifications been submitted or approved. This pipeline has not been subject to CEQA or NEPA compliance; therefore, the following discussion analyzes environmental impacts associated with the construction of the Americanos Boulevard pipelines that would be expected to occur.

The Americanos Boulevard pipelines would convey water from existing North Douglas storage tanks to the SPA through two new 24-inch-diameter parallel pipelines. The North Douglas storage tanks are located north of Douglas Road and east of Americanos Boulevard along Edington Drive. An existing 30-inch-diameter pipeline currently conveys water from the North Douglas storage tanks south along Edington Drive to its intersection with Americanos Boulevard. From this point, the existing pipeline travels south to a check valve on Douglas Road. The new Americanos Boulevard pipelines would begin at this check valve and travel approximately 6,800 feet south along the future Americanos Boulevard road right-of-way then connect with the SPA's proposed on-site water system at the future intersection of Americano Boulevard and Chrysanthy Boulevard (MacKay & Somps 2011b:19).

The Americanos Boulevard pipelines would be installed in open trenches using conventional trenching techniques. The trenching techniques include surface grading, trench excavation, pipeline installation, and backfilling and surface grading. A backhoe or excavator would be used to dig trenches for pipe installation. In general, trenches would be 4 to 5 feet wide and 5 to 10 feet deep. Trenches deeper than 5 feet would require shoring to prevent trench failure. The trenches would have vertical sidewalls to minimize construction easement width and amount of soil excavated. Excavated roadways would be repaved. For unpaved areas, restoration would generally involve re-grading and planting with annual grasses (MacKay & Somps 2011b:19). Where the pipelines would cross the tributary of Morrison Creek within the Douglas 103 property, jack-and-bore techniques would be employed to avoid work in the bed or bank of this tributary. Boring would likely occur to a depth of approximately 10 feet.

Staging areas may be up to 5 acres in size and their potential locations are presently unknown. It is anticipated that less than 5 acres per day would be disturbed during construction activities. SCWA anticipates two crews of 16 to 18 construction workers would install the pipeline and would possibly work at opposite ends of the alignment. Construction activities would only occur during the daytime hours. Jack-and-bore activities underneath the Morrison Creek tributary are assumed to require approximately three weeks.

Aesthetics

The proposed Americanos Boulevard pipeline route is currently undeveloped and sporadically used for grazing. There are no existing urban land uses (e.g., residential or commercial land uses) immediately adjacent to the proposed pipeline route; the closest residences are within the Anatolia subdivision approximately 1,600 feet to the west. Installation of the pipeline would only be visible in the background (as opposed to the near- or middle-ground), and since the pipeline would be installed underground, the pipeline would not degrade the surrounding

visual character. There are no state-designated scenic highway segments adjacent to the water-supply pipeline route. The areas where the pipelines would be installed are not visible from any state- or County-designated scenic highways or roadways. Construction would be short-term, temporary, and of relatively short duration. Therefore, the proposed underground Americanos Boulevard pipelines would result in **direct**, **less-than-significant** impacts on visual resources. **No indirect** impacts would occur.

Air Quality

Temporary and short-term construction-related emissions of criteria air pollutants, ozone precursors, TACs, and odors would be generated during pipeline construction. For purposes of air quality modeling, the Americanos Boulevard pipeline construction was assumed to occur for 1.25 months in 2012. Construction was presumed to involve a 5,000-foot (0.95-mile) stretch of unpaved earth that would be excavated to a width of 8 feet and a depth of 10 feet (to accommodate two, 24-inch pipes). Since the pipelines would entail jack and bore methods underneath the tributary to Morrison Creek on the Douglas 103 property, a borer was presumed to operate for three weeks. Trenching and excavation, as well as backfilling and grading, was assumed to occur over a four-week period, and it was also assumed that no additional cut and fill material (and associated hauling trips from borrow or landfill sites) would be needed. Emissions were estimated using SMAQMD's Roadway Construction Emissions Model (SMAQMD 2009), and are summarized in Table 3.7-16. Particulate matter (PM) emissions were modeled assuming that water trucks would be operating during construction activities.

Table 3.17-16
SunCreek Maximum Daily Construction Emissions, 2012
Americanos Boulevard Parallel Pipelines

	ROG lb/day	CO lb/day	NO_x lb/day	Total PM_{10} lb/day	Exhaust PM_{10} lb/day	Fugitive Dust PM_{10} lb/day	Total $PM_{2.5}$ lb/day	Exhaust $PM_{2.5}$ lb/day	Fugitive Dust $PM_{2.5}$ lb/day
Maximum Daily Emissions (lb/day)	4.2	18.4	27.8	3.0	1.7	1.3	1.8	1.5	0.3
Total Project Emissions (tons/project)	0.1	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0
SMAQMD Construction-Related Thresholds of Significance	-	-	**85**	-	-	-	-	-	-

Notes: ROG = reactive organic gases; lb/day = pounds per day; CO = carbon monoxide; NO_x = oxides of nitrogen; PM_{10} = respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = respirable particulate matter with a diameter of 2.5 microns or less; SMAQMD = Sacramento Metropolitan Air Quality Management District.
See Appendices L and N for modeling data.
Source: Data modeled by AECOM in 2011

As shown in Table 3.17-16, construction-related NO_x emissions do not exceed the SMAQMD threshold of significance, and emissions of other criteria pollutants are extremely low. Therefore, the **direct** impacts on local air quality (CO and PM hotspots) and regional air quality (i.e. ozone and PM) would be **less-than-significant** during the 2012 construction year. **No indirect** impacts would occur.

There are currently no sensitive receptors in the immediate vicinity (i.e., approximately 500 feet) of the proposed Americanos Boulevard pipeline construction. The Sunridge development is currently located approximately 1,600 feet to the west of the proposed pipeline route, and one rural residence is currently located approximately 2,500 feet to the east of the proposed pipeline route. Because no development that would entail the placement of new sensitive receptors within the immediate vicinity of the pipeline is planned in 2012, the **direct** impact of exposure

of sensitive receptors to TAC or odor emissions associated with the proposed pipeline would be a **less-than-significant** during the 2012 construction year. **No indirect** impacts would occur.

Biological Resources

Biological resources in the vicinity of the proposed Americanos Boulevard pipelines are similar to those found within the SPA. The pipeline route follows the proposed alignment of Americanos Boulevard, which is characterized by mima mound topography with an underlying hardpan soil that supports a mosaic of vernal pools and seasonal wetland swales interspersed within a matrix of annual grassland vegetation. The proposed pipeline route would intersect an intermittent headwater tributary to Morrison Creek. This vernal pool grassland habitat has the potential to support a number of special-status plant and animal species, including species protected under the Federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA).

A 1993 special-status species determination conducted for the Sunrise-Douglas Property Owners Association identified vernal pool fairy shrimp, vernal pool tadpole shrimp, and western spadefoot on the properties traversed by the proposed Americanos Boulevard pipeline route (Sugnet & Associates 1993) and there are numerous accounts of these species recorded in the California Natural Diversity Database (CNDDB) within a 5-mile radius of the proposed pipeline. Additional special-status wildlife species documented in the vicinity that could be present in habitats found in the pipeline route or vicinity are western pond turtle, grasshopper sparrow, burrowing owl, Swainson's hawk, northern harrier, and American badger. Additionally, there are several special-status plant species associated with vernal pool habitats, as identified in Table 3.3-1 (see Section 3.3, "Biological Resources"), that have been documented in the vicinity, and could occur in wetlands along the pipeline route, including the following state and Federally listed species: Bogg's Lake hedge hyssop, slender Orcutt grass, and Sacramento Orcutt grass.

Potential impacts on grasshopper sparrow and American badger would be less than significant because temporary disturbance of grassland habitat would not likely result in a substantial decline in local population numbers.

The parallel pipeline would be installed underneath the intermittent tributary using jack-and-bore techniques to avoid impacts on this water of the U.S.; however, the pipeline route would cross properties supporting an extremely high density of vernal pools making it infeasible to avoid impacts to all wetlands. Creating a trench 5 feet wide and 5 feet deep from Douglas Road to the northern SPA boundary (approximately 1 mile) would result in destruction of vernal pools within high quality vernal pool grassland habitat. Therefore, constructing the proposed Americanos Boulevard pipeline would result in **direct** and **indirect significant** impacts to wetlands. Construction activities affecting vernal pools and other seasonal wetlands could also affect special-status species that occur in wetlands through the loss and degradation of habitat, if they are present. There are a few clusters of large trees in the pipeline vicinity that may provide suitable nest sites for nesting raptors. If Swainson's hawks or other raptors are nesting in these trees during construction activities, construction disturbances could result in nest abandonment and mortality of chicks or eggs. Therefore, construction activities could result in **direct** and **indirect, potentially significant** impacts on special-status species.

> **Mitigation Measure: Implement Mitigation Measure 3.3-1a (Include in Drainage Plans All Wetlands that Remain On-site, Submit Plans to the City and USACE for Review and Approval, and Implement all Measures in Drainage Plans).**
>
> **Mitigation Measure: Implement Mitigation Measure 3.3-1b (Secure CWA Section 404 Permit and Implement All Permit Conditions, and Ensure No Net Loss of Wetlands and other Waters of the United States and Associated Functions).**
>
> **Mitigation Measure: Implement Mitigation Measure 3.3-3a (Conduct Preconstruction Surveys for Nesting Swainson's hawk, White-Tailed Kite, Burrowing Owls, and Other Raptors, and if Found, Establish Appropriate Buffers, and Implement Avoidance or Appropriate Mitigation).**

Mitigation Measure: Implement Mitigation Measure 3.3-3c (Secure Take Authorization of Federally Listed Vernal Pool Invertebrates and Implement Permit Conditions, Develop and Implement a Habitat Mitigation and Monitoring Plan).

Mitigation Measure: Implement Mitigation Measure 3.9-3d (Conduct Preconstruction Surveys to Avoid Western Pond Turtle).

Mitigation Measure: Implement Mitigation Measure 3.17-3a (Perform Biological Surveys at the Construction Staging Area and Avoid Damage or Destruction to Sensitive Resources by Relocating the Staging Area, if Sensitive Biological Resources are Found).

Mitigation Measure 3.17-5: Conduct Protocol-Level Preconstruction Surveys for Special-Status Plants.

The project applicants shall retain a qualified botanist to conduct protocol-level preconstruction special-status plant surveys for all potentially occurring plant species. If no special-status plants are found during focused surveys, the botanist shall document the findings in a letter report to U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (DFG), and the City of Rancho Cordova, and no further mitigation shall be required.

If special-status plant populations are found, the project applicants of affected project phases shall consult with the City, DFG, and USFWS, as appropriate depending on species status, to determine the appropriate mitigation measures for direct and indirect impacts on any special-status plant population that could result from project implementation. Mitigation measures may include preserving and enhancing existing populations, creation of off-site populations on project mitigation sites through seed collection or transplantation, and/or restoring or creating suitable habitat in sufficient quantities to achieve no net loss of occupied habitat or individuals.

If potential impacts on special-status plant species are likely as determined by the botanist, a mitigation and monitoring plan shall be developed before the approval of grading plans or any ground-breaking activity within 250 feet of a special-status plant population. The mitigation plan shall be submitted to the City of Rancho Cordova for review and approval. It shall be submitted concurrently to DFG or USFWS, as appropriate depending on species status, for review and comment. The plan shall require the following:

- Viable plant populations shall be maintained on site and avoidance measures shall be identified for any existing population(s) to be retained and compensatory measures for any populations directly affected. Possible avoidance measures include fencing populations before construction and exclusion of project activities from the fenced-off areas, and construction monitoring by a qualified botanist to keep construction crews away from the population. The mitigation plan shall also include monitoring and reporting requirements for populations to be preserved on site or protected or enhanced off-site.

- If relocation efforts are part of the mitigation plan, the plan shall include details on the methods to be used, including collection, storage, propagation, receptor site preparation, installation, long-term protection and management, monitoring and reporting requirements, and remedial action responsibilities should the initial effort fail to meet long-term monitoring requirements.

- If off-site mitigation includes dedication of conservation easements, purchase of mitigation credits, or other off-site conservation measures, the details of these measures shall be included in the mitigation plan, including information on responsible parties for long-term management, conservation easement holders, long-term management requirements, and other details, as appropriate to target the preservation of long term viable populations.

Implementation: Before the approval of grading plans and before/during any ground-disturbing activities for the Americanos Boulevard pipeline.

Timing: Project applicants of all project phases where construction of the Americanos Boulevard pipeline is required.

Enforcement: City of Rancho Cordova Planning Department.

Cultural Resources

The proposed water-supply pipeline route is currently undeveloped and sporadically used for grazing. The future Americanos Boulevard right-of-way is within the Sunridge Specific Plan area and the North Central Information Center reported that several cultural resources inventories have been conducted for this area (see Table 3.5-1 in Section 3.5, "Cultural Resources"). There are no known cultural resources located within the proposed water-supply pipeline route. However, there is always a possibility of encountering intact, unknown buried cultural resources or human remains, and this could result in **direct, potentially significant** impacts on cultural resources. **No indirect** impacts would occur.

Mitigation Measure: Implement Mitigation Measure 3.5-2 (Reduce Potential Impacts on Cultural Resources through Preconstruction Worker Education and Consultation if Resources are Encountered).

Mitigation Measure: Implement Mitigation Measure 3.5-3 (Provide Preconstruction Worker Education and Stop Potentially Damaging Work if Human Remains are Uncovered During Construction).

Mitigation Measure: Implement Mitigation Measure 3.17-3b.

Drainage, Hydrology, and Water Quality

The proposed water-supply pipeline route is undeveloped, and installation of the Americanos Boulevard pipelines would result in temporary, short-term construction-related impacts. Such activities could result in soil erosion, stormwater discharges of suspended solids, and increased turbidity and potential mobilization of other pollutants from project construction sites to flow as contaminated runoff to drainage channels on-site and ultimately off-site. Many construction-related wastes have the potential to degrade existing water quality by altering the dissolved-oxygen content, temperature, pH, suspended-sediment and turbidity levels, or nutrient content, or by causing toxic effects on the aquatic environment. Project construction activities that are implemented without mitigation could violate water quality standards or cause indirect harm to aquatic organisms. Therefore, construction-related activities could result in **direct** and **indirect, potentially significant** impacts on hydrology, drainage, and water quality.

Mitigation Measure: Implement Mitigation Measure 3.9-1 (Acquire Appropriate Regulatory Permits and Prepare and Implement an Erosion and Sediment Control Plan, SWPPP, and BMPs).

Mitigation Measure: Implement Mitigation Measure 3.17-3a.

Environmental Justice

The proposed Americanos Boulevard pipelines would provide water supplies to new housing and other land uses identified for the SPA. The proposed Americanos Boulevard pipelines in and of themselves would not cause a disproportionately high and adverse impact on low-income populations or create a disproportionate placement of adverse environmental impacts on minority communities, because there is no development present along the pipeline route, and the pipelines would be installed underground. Therefore, the Americanos Boulevard pipelines would result in **no direct** or **indirect** impacts on environmental justice.

Geology, Soils, and Mineral Resources

The Americanos Boulevard pipeline route has a relatively flat topography and is not located in or near a landslide hazard area, and known active seismic sources are located more than 30 miles from the pipeline. Therefore, potential damage to structures from seismic activity and related geologic hazards would be a **direct**, **less-than-significant** impact. **No indirect** impacts would occur.

The Americanos Boulevard pipeline route would not be located in an area of known mineral resources as designated by the California Division of Mines and Geology, or as designated by the City of Rancho Cordova General Plan. Therefore, there would be **no direct** or **indirect** impact from potential loss of mineral resources.

Construction activities would result in the temporary, short-term disturbance of soil and would expose disturbed areas to winter storm events, which could result in soil runoff and localized erosion. A **direct**, **potentially significant** impact from soil erosion could result from construction activities. **No indirect** impacts would occur.

The Americanos Boulevard pipeline alignment would pass through soils identified by the NRCS (2011) as: Corning complex, Hicksville gravelly loam, Fiddyment fine sandy loam, Red Bluff loam, Red Bluff-Redding complex, Redding loam, and Redding gravelly loam. There is potential for the sides of trench excavations to cave for all of these soils, and most are moderate to highly expansive (which could render the material unsuitable for backfill). These soils have a moderate to high potential for corrosion of steel and concrete. Therefore, potential damage to the pipeline from soil hazards would be a **potentially significant, direct** impact. **No indirect** impacts would occur.

> **Mitigation Measure: Implement Mitigation Measure 3.7-1a: (Prepare Site-Specific Geotechnical Report per CBC Requirements and Implement Appropriate Recommendations)**
>
> **Mitigation Measure: Implement Mitigation Measure 3.9-1 (Acquire Appropriate Regulatory Permits and Prepare and Implement an Erosion and Sediment Control Plan, SWPPP, and BMPs).**

Greenhouse Gas Emissions

Greenhouse gas emissions are cumulative by nature. Construction of the Americanos Boulevard parallel water supply pipelines would result in the generation of temporary and short-term emissions of GHGs (e.g., CO_2) from the use of on-site heavy-duty construction equipment and worker commute and material transport trips. Total project construction emissions of CO_2 were estimated to be 45 MT and 3,929 pounds/day for the year 2012. Only CO_2 emissions were estimated for construction, because N_2O and CH_4 emissions are about 20 to 40 times lower than CO_2 emissions for off-road vehicles (ARB 2010:215,218). Because the emissions would be finite in nature (i.e., only occurring during construction, not during operation), would be lower than the lowest operational air quality management district threshold of significance of 1,100 MT CO_2e/year (the BAAQMD "brightline" threshold), construction-related GHGs would not result in a cumulatively considerable increase in GHGs. In addition, the pipeline would not result in any operational GHG emissions. Thus, the proposed Americanos Boulevard parallel water supply pipelines would result in a **direct, less-than-significant** impact with respect to the generation of greenhouse gases. **No indirect** impact would occur.

Hazards and Hazardous Materials

Project construction would involve the temporary, short-term storage, use, and transport of hazardous materials (e.g., asphalt, fuel, lubricants, and solvents) on local roadways. Transportation of hazardous materials on area roadways is regulated by the California Highway Patrol and the California Department of Transportation, and use of these materials is regulated by DTSC, as outlined in Title 22 of the California Code of Regulations. The project's builders, contractors, and suppliers would be required to use, store, and transport hazardous materials in compliance with Federal, state, and local regulations during project construction; therefore, installation of the proposed Americanos Boulevard pipelines would not create a significant hazard to the public or the environment.

There are no schools serving kindergarten through 12th grade students within ½ mile of the proposed water-supply pipeline route. The pipeline route is not located on the Cortese List of hazardous materials sites. Construction of the underground Americanos Boulevard pipelines would have no effect on safety related to Mather Airport. Impacts related to implementation of emergency plans are addressed below under "Public Services." Because the proposed water-supply pipeline route is not located in a wildland fire hazard zone, there would be no impact related to wildfire hazards. Therefore, there would be **no direct** or **indirect** impacts related to hazards and hazardous materials.

Land Use and Planning

The proposed Americanos Boulevard pipeline route is undeveloped and sporadically used for grazing. The proposed pipeline route is within the Sunridge Specific Plan and would transect the proposed Arista del Sol, Grantline 208, and Douglas 103 project sites. Because there are no existing residences located within the proposed water-supply pipeline route, the proposed pipelines would not divide an established community. The proposed pipeline route is identified in the City General Plan as the future Americanos Boulevard right-of-way. Therefore, the proposed Americanos Boulevard pipelines would be consistent with the City General Plan, zoning designations, and other adopted land use plans, policies, and regulations and the proposed Americanos Boulevard pipelines would have **no direct** or **indirect** impacts related to land use and planning.

The Sacramento County Important Farmland map, published by the California Department of Conservation's (DOC's) Division of Land Resource Protection, designates the proposed water-supply pipeline route as Grazing Land (DOC 2012). This farmland designation is not considered Important Farmland under CEQA (California Public Resources Code Sections 21060.1 and 21095 and State CEQA Guidelines Appendix G). Therefore, the proposed Americanos Boulevard pipelines would not **directly** or **indirectly** convert Important Farmland to nonagricultural uses or result in changes that could convert Important Farmland to nonagricultural uses.

None of the proposed water-supply pipeline route is held under Williamson Act contracts (DOC 2009); therefore, the proposed Americanos Boulevard pipelines would **not directly** or **indirectly** conflict with existing Williamson Act contracts or result in the cancellation of Williamson Act contracts.

Based on review of aerial photographs of the proposed water-supply pipeline route, the pipeline route does not contain 10% native tree cover that would be classified as forestland under PRC Section 12220(g). Therefore, there would be **no direct** or **indirect** impact related to conversion of forest land to non-forest use.

Noise

Noise levels from project construction activities would be temporary and short term and the locations would change as construction proceeds along the pipeline route. There are currently no sensitive receptors in the immediate vicinity (i.e., approximately 500 feet) of the proposed Americanos Boulevard pipeline construction. The Sunridge development is currently located approximately 1,600 feet to the west of the proposed pipeline route, and one rural residence is currently located approximately 2,500 feet to the east of the proposed pipeline route. Typical noise levels attributable to heavy-construction equipment are listed in Table 3.11-8 of Section 3.11, "Noise." The City's noise ordinance provides that any construction occurring between the hours of 7 a.m. and 6 p.m. is exempt from the noise standards, and sensitive receptors are located far enough away such that exceedance of the City's noise standards would not occur. Therefore, project-related construction-generated noise would result in a **direct**, **less-than-significant**, temporary, short-term noise impact on nearby noise-sensitive land uses. **No indirect** impacts would occur.

Paleontological Resources

According to the geologic map prepared by Wagner et al. (1987), the proposed Americanos Boulevard pipelines would be constructed within the Laguna Formation. In keeping with the significance criteria of the Society of Vertebrate Paleontology (1995), all vertebrate fossils are generally categorized as being of potentially significant

scientific value. Sediments referable to the Laguna Formation are generally devoid of vertebrate fossils, and no previously recorded fossil sites from this formation are known from either the project site or the surrounding area. Thus, sediments that underlie the proposed Americanos Boulevard pipelines are considered to be of low paleontological sensitivity. Furthermore, the pipeline would be placed within the existing roadway where any paleontological resources that may have been present would already have been destroyed by previous road construction activities. Therefore, the potential for project-related construction activities to affect unique paleontological resources would result in a **direct**, **less-than-significant** impact. **No indirect** impacts would occur.

Parks and Recreation

The proposed Americanos Boulevard pipelines would provide water supplies to new housing and other land uses identified for the SPA. The proposed Americanos Boulevard pipelines in and of themselves would not increase demand for parks and recreational facilities, nor would they indirectly increase demand because the water would only be used to supply the SPA. Therefore, the proposed Americanos Boulevard pipelines would result in **no direct** or **indirect** impacts on parks and recreation.

Population, Employment, and Housing

There are no existing residences located within the proposed water-supply pipeline route and the proposed Americanos Boulevard pipelines would not displace substantial numbers of existing housing or people because it would be installed in an undeveloped area. The proposed Americanos Boulevard pipelines would provide water supplies to new housing and other land uses identified for the SPA. The proposed Americanos Boulevard pipelines in and of themselves would not increase population, because sufficient construction workers are available in the region, and water supply carried by the pipeline is intended only for the SPA. Therefore, the proposed Americanos Boulevard pipelines would result in **no direct** or **indirect** impacts on population, employment, and housing.

Public Services

The proposed Americanos Boulevard pipelines would provide water supplies to new housing and other land uses identified for the SPA. The proposed Americanos Boulevard pipelines in and of themselves would not increase demand for fire protection facilities, services, and equipment or police protection facilities, services, and equipment because construction would be temporary in nature and of short duration, and adequate fire and police services are already available within the City. Installation of underground water-supply pipelines that are only intended to serve the SPA would have no effect on school facilities and services.

However, with regard to emergency services, construction activities could result in temporary lane closures, increased truck traffic, and other roadway effects that could slow or stop emergency vehicles, temporarily increasing response times and impeding existing service. Therefore, the Americanos Boulevard pipeline could result in **direct**, **potentially significant** impacts related to the temporary obstruction of roadways during construction. **No indirect** impacts would occur.

> **Mitigation Measure: Implement Mitigation Measure 3.14-1 (Prepare and Implement a Construction Traffic Control Plan).**

Traffic and Transportation

The Americanos Boulevard pipeline installation would not result in permanent increases to roadway or intersection level of service standards or increases in peak-hour traffic volumes, nor would it affect alternative means of transportation, because the pipeline would be installed underground in an undeveloped area. Therefore, the Americanos Boulevard pipeline would result in **no direct** or **indirect** impacts related to traffic and transportation.

Utilities and Service Systems

The proposed Americanos Boulevard pipelines would provide water supplies to new housing and other land uses identified for the SPA. The proposed Americanos Boulevard pipelines in and of themselves would not increase demand for water; wastewater service; solid-waste disposal, or electricity, natural gas, and communications services and systems.

However, because final design plans and specifications have not been submitted, this impact is considered **direct** and **potentially significant**. In addition, as described above, environmental impacts associated with the construction of these parallel pipelines could result in **potentially significant** impacts on biological resources; cultural resources; drainage, hydrology, and water quality; and public services. Mitigation measures for these **indirect** impacts are listed above.

Mitigation Measure: Implement Mitigation Measure 3.17-2.

Impact Conclusion

Because the infrastructure required for water conveyance facilities necessary to serve the project (Americanos Boulevard pipelines) has not been constructed, nor have final design plans and specifications been submitted, this impact is considered **direct** and **potentially significant**. In addition, as described above, environmental impacts associated with the construction of these facilities could result in **potentially significant** impacts on biological resources; cultural resources; drainage, hydrology, and water quality; and public services.

Implementation of Mitigation Measure 3.17-2 would reduce direct, potentially significant impacts under the No USACE Permit, Proposed Project, Biological Impact Minimization, Conceptual Strategy, and Increased Development Alternatives related to the provision of required off-site water conveyance facilities to a **less-than-significant** level, because off-site water conveyance facilities sufficient to convey water supplies to subdivisions or nonresidential uses would be in place before recordation of any final small-lot subdivision map, or before the City approves any similar project-specific, discretionary approval or entitlement required for nonresidential uses.

Implementation of Mitigation Measures 3.3-1a. 3.3-1b, 3.3-3a, 3.3-3c, 3.3-3d, 3.17-3a, and 3.17-5 would reduce direct and indirect significant impacts under the No USACE Permit, Proposed Project, Biological Impact Minimization, Conceptual Strategy, and Increased Development Alternatives on Swainson's hawks, white-tailed kites, burrowing owls, and other raptors; western spadefoot; western pond turtle; and special-status plants resulting from the Americanos Boulevard pipeline installation to a **less-than-significant** level because they would: ensure that wetland habitat removed from the pipeline route would be replaced on a no net loss basis; require measures to minimize adverse effects on water quality and wetland hydrology that could indirectly affect wetland habitat and species; ensure that nesting raptors are identified prior to construction and requires avoidance measures or buffers to ensure nesting raptors are not disturbed; require surveys to identify and avoid western pond turtles; and require plant surveys to identify and avoid or compensate for special-status plants.

Implementing Mitigation Measures 3.3-1a, 3.3-1b, and 3.3-3c would reduce direct significant impacts on jurisdictional wetlands and other waters of the U.S. and on vernal pool fairy shrimp and vernal pool tadpole shrimp resulting from pipeline construction, but not necessarily to a less-than-significant level for the same reasons indicated in Section 3.3, "Biological Resources." Therefore direct and indirect impacts on wetlands and other waters of the U.S. and on vernal pool fairy shrimp and vernal pool tadpole shrimp would remain **significant and unavoidable**.

Implementation of Mitigation Measures 3.5-2, 3.5-3, 3.7-1a, 3.9-1, 3.14-1, and 3.17-3b would reduce indirect significant impacts under the No USACE Permit, Proposed Project, Biological Impact Minimization, Conceptual Strategy, and Increased Development Alternatives related to off-site water conveyance facilities to a **less-than-significant** level, because adverse impacts on cultural resources would be avoided, appropriate design recommendations of a geotechnical engineer would be incorporated into project design, appropriate BMPs would

be implemented to control erosion, and a traffic plan would be developed and implemented during construction activities.

IMPACT 3.17-6 **Need for On-Site Water Conveyance and Storage Facilities.** *Project implementation would require construction of on-site water conveyance facilities to deliver water from SCWA's off-site conveyance facilities to the SPA.*

NP

Under the No Project Alternative, no project-related development would occur and there would be no new urban uses (e.g., residential or commercial land uses) that would increase the demand for on-site water conveyance and storage facilities. Therefore, **no direct** or **indirect** impacts would occur. ***[Lesser]***

NCP, PP, BIM, CS, ID

There are no public water supply facilities within the SPA, and therefore the project would require construction of a new water system.

The master water study prepared for the Proposed Project Alternative (MWH 2008) addressed the viability of providing water conveyance facilities to the SPA, identified on-site facility needs and design, and evaluated designs for consistency with the Zone 40 WSMP and WSIP. The location of the water distribution facilities to serve the No USACE Permit, Biological Impact Minimization, Conceptual Strategy, and Increased Development Alternatives would vary somewhat from the Proposed Project Alternative due to the difference in street alignments and the spatial distribution of the developable areas. In spite of these differences, the physical impacts of the on-site water system to serve the No USACE Permit, Biological Impact Minimization, Conceptual Strategy, and Increased Development Alternatives would be substantially the same as those of the Proposed Project Alternative.

The on-site water conveyance facilities would provide adequate flow deliveries to maintain acceptable service pressures to all customers within the SPA. A preliminary on-site water system has been designed as a looping system following the major street alignments (see Exhibit 2-5 in Chapter 2, "Alternatives"). The transmission system would incorporate mainline pipe sizes from 16 inches to 24 inches in diameter. The on-site distribution system would consist of 8- to 12-inch diameter pipes, with the 12-inch lines looping near sites that require higher fire flow requirements, such as commercial, industrial, and school sites. Transmission facilities would meet SCWA's standards for water system improvements identified in the WSIP and distribution facilities would meet Sacramento County Improvement Standards (MWH 2008:2-4). In addition, fire flow requirements would meet the Sacramento Metropolitan Fire District standards. The internal water transmission system would be developed in phases, and incrementally expanded to meet the demands of the SPA.

Four water supply scenarios have been identified as options for providing water to the SPA (see Impact 3.17-1 above). Regardless of which water supply scenario is ultimately selected, the on-site water conveyance facilities would connect to the existing and proposed off-site water conveyance facilities at the same points. The on-site water transmission system would connect to the existing off-site conveyance facilities in the vicinity of the SPA, including the 24-inch treated water transmission main in Kiefer Boulevard, the 16-inch treated water transmission main in Rancho Cordova Parkway south of Kiefer Road, the 24-inch treated water transmission main in Rancho Cordova Parkway north of Kiefer Road, and the 16-inch treated water transmission main in Sunrise Boulevard at its intersection with Kiefer Road, and the on-site water conveyance facilities would connect to the proposed 30-inch Florin Road/Sunrise Boulevard pipeline at the intersection of Sunrise Boulevard and Kiefer Road (see Impact 3.17-3 above).

Two 2.0-mgd storage tanks, known as the Sunrise Douglas 2 tanks, would be located on the SPA approximately 3,500 feet east of Rancho Cordova Boulevard. Two 30-inch treated water transmission mains would be constructed

from the tanks. One transmission main would travel east and connect to the existing 24-inch main in Rancho Cordova Boulevard and the other transmission main would travel west to connect with the proposed 24-inch transmission main in the future Americanos Boulevard within the SPA.

To meet water demands of the NSA, including the SPA, three groundwater wells, the SunCreek WTP, a storage tank, and booster pump stations could potentially be constructed east of Sunrise Boulevard and south of Kiefer Boulevard in the southern portion of the SPA (see Impact 3.17-1 above). Treated groundwater would be conveyed from the SunCreek WTP to the SPA through a proposed 24-inch transmission main that would travel north to Rancho Cordova Boulevard where it would then connect to the existing 24-inch transmission main. In addition, the SunCreek WTP would have capacity to treat raw groundwater that could be conveyed from the NVWF to the SunCreek WTP through the existing 30-inch raw groundwater transmission main at Sunrise Boulevard and Kiefer Boulevard and this groundwater would then be delivered to the SPA through the proposed on-site water conveyance system (MWH 2008:5-14). Although the physical impacts of constructing these on-site facilities are addressed throughout this DEIR/DEIS in connection with discussions of the impacts of overall site development, this DEIR/DEIS does not provide CEQA or NEPA coverage for operation of the SunCreek WTP, because that facility has not been designed. SCWA and/or the City of Rancho Cordova would conduct a separate CEQA or NEPA analysis, if necessary, to analyze specific operational impacts associated with the SunCreek WTP and identify any required mitigation measures for operation of that facility.

Because the on-site infrastructure required for water conveyance facilities necessary to serve the No USACE Permit, Proposed Project, Biological Impact Minimization, Conceptual Strategy, and Increased Development Alternatives has not been constructed, nor have final design plans and specifications been submitted, this impact is considered **direct** and **potentially significant**. The **indirect** physical impacts of constructing these on-site facilities are addressed throughout this DEIR/DEIS in connection with discussions of the impacts of overall site development.

Mitigation Measure: Implement Mitigation Measure 3.17-2.

Implementation of Mitigation Measure 3.17-2 would reduce direct, potentially significant impacts under the No USACE Permit, Proposed Project, Biological Impact Minimization, Conceptual Strategy, and Increased Development Alternatives to a **less-than-significant** level because on-site water conveyance facilities sufficient to convey water supplies to subdivisions or nonresidential uses would be in place before recordation of any final small-lot subdivision map, or before City approval of any similar project-specific, discretionary approval or entitlement required for nonresidential uses.

IMPACT 3.17-7 **Use of Nonpotable Water Supplies and Infrastructure.** *Project implementation could result in the use of nonpotable-water supplies and infrastructure to provide landscaping irrigation of parks, streetscapes, schools, and commercial land uses. Initially, the nonpotable water supply demands would be met by the potable water supplies. In the long term, it is assumed that future nonpotable water supply would be provided by SRCSD, when a sufficient supply of nonpotable water is available to meet project demands.*

NP

Under the No Project Alternative, no project-related development would occur and there would be no new urban uses (e.g., residential or commercial land uses) that result in the use of nonpotable-water supplies and infrastructure. Therefore, **no direct** or **indirect** impacts would occur. ***[Lesser]***

NCP, PP, BIM, CS, ID

The City adopted a Citywide Recycled Water Distribution Ordinance (Resolution No. 11-2006) stating that new development should install a "purple pipe" recycled-water distribution system. Therefore, while it may not occur for

many years, the project includes a component to implement a recycled-water-use program. All areas identified as parks, streetscapes, schools, and commercial land uses within the SPA would be irrigated via a recycled water system that could be easily converted from a potable to nonpotable water supply at some future date.

The draft *Sunrise Douglas Community Plan Area Non-Potable Water Master Plan* (Wood Rodgers 2007) defined nonpotable water service areas and demands, addressed the viability of providing nonpotable water supplies to the SPA, and identified infrastructure needs that would meet the SCWA operating goals (Wood Rodgers 2007:1). The proposed nonpotable water system is shown in Exhibits 2-11 and 2-12 in Chapter 2, "Alternatives." Nonpotable water demands were calculated based on land uses designated for parks, streetscapes, schools, and commercial land uses consistent with the City's Recycled Water Distribution Ordinance (Resolution No. 11-2006). The project's demands for nonpotable water at buildout were determined by applying an irrigated-surface-area factor to each proposed land use.

Initially, the demands for nonpotable water would be met by the project's supplies of potable water, which were identified and evaluated in Impact 3.17-1 above. Therefore, impacts associated with nonpotable-water supplies would be the same as those identified for the potable-water supplies (see Impact 3.17-1). In the long term, it is assumed that future supplies of nonpotable water would be provided by SRCSD, when a sufficient supply of nonpotable water is available to meet project demands. As shown in Tables 3.17-17 through 3.17-21 below, the total projected demands for nonpotable water are 204.9 afy for the No USACE Permit Alternative, 797.5 afy for the Proposed Project Alternative, 443.1 afy for the Biological Impact Minimization Alternative, 612.5 afy for the Conceptual Strategy Alternative, and 584.3 afy for the Increased Development Alternative.

The on-site recycled-water conveyance facilities would follow the same alignment as, and would be installed at the same time as, the potable-water conveyance facilities. Several potential connections between the recycled-water system and the potable-water system have been proposed, but these connections are subject to change in the future after a source of nonpotable water has been identified and off-site infrastructure has been installed. After a supply of nonpotable water is available to serve the project site, the connections to the potable-water system would be closed (Exhibit 3.17-2).

Table 3.17-17
Summary of Land Uses and Demands for Nonpotable Water—Proposed Project Alternative

Land Use	Area (acres)[1]	Irrigated-Surface-Area Factor[2]	Site Area Irrigated (acres)	Water Demand (afy)[3]
Commercial	91.3	0.5	45.7	165.4
Schools	110.9	0.7	77.6	280.9
Parks	91.4	0.9	82.3	297.9
Public/quasi-public	13.0	0.5	6.5	23.5
Pedestrian/landscape corridor and parkways	9.1	0.9	8.2	29.6
Total	**315.7**		**220.3**	**797.5**

Notes: afy = acre-feet per year

[1] Total area includes the total surface area of each land use, including those areas that do not require nonpotable water for irrigation (i.e., structures, parking lots, sidewalks).

[2] Site area irrigated is the amount of irrigated surface area assumed to require nonpotable water, as a percentage of the total area.

[3] Annual water demand (afy) = total site area irrigated (acres) x 3.62 acre-feet per acre per year (annual irrigation demand for Sacramento County).

Source: Wood Rodgers 2007, data compiled by AECOM in 2010

Table 3.17-18
Summary of Land Uses and Demands for Nonpotable Water—No USACE Permit Alternative

Land Use	Area (acres)[1]	Irrigated-Surface-Area Factor[2]	Site Area Irrigated (acres)	Water Demand (afy)[3]
Commercial	6.7	0.5	3.4	12.3
Schools	29.2	0.7	20.4	73.9
Parks	33.2	0.9	29.9	108.2
Public/quasi-public	4.8	0.5	2.4	8.7
Pedestrian/landscape corridor and parkways	0.6	0.9	0.5	1.8
Total	**74.5**		**56.6**	**204.9**

Notes: afy = acre-feet per year

[1] Total area includes the total surface area of each land use, including those areas that do not require nonpotable water for irrigation (i.e., structures, parking lots, sidewalks).

[2] Site area irrigated is the amount of irrigated surface area assumed to require nonpotable water, as a percentage of the total area.

[3] Annual water demand (afy) = total site area irrigated (acres) x 3.62 acre-feet per acre per year (annual irrigation demand for Sacramento County).

Source: Wood Rodgers 2007, data compiled by AECOM in 2010

Table 3.17-19
Summary of Land Uses and Demands for Nonpotable Water—Biological Impact Minimization Alternative

Land Use	Area (acres)[1]	Irrigated-Surface-Area Factor[2]	Site Area Irrigated (acres)	Water Demand (afy)[3]
Schools	52.0	0.7	36.4	131.8
Parks	86.6	0.9	77.9	282.0
Public/quasi-public	4.1	0.5	2.1	7.6
Pedestrian/landscape corridor and parkways	6.7	0.9	6.0	21.7
Total	**149.4**		**122.4**	**443.1**

Notes: afy = acre-feet per year

[1] Total area includes the total surface area of each land use, including those areas that do not require nonpotable water for irrigation (i.e., structures, parking lots, sidewalks).

[2] Site area irrigated is the amount of irrigated surface area assumed to require nonpotable water, as a percentage of the total area.

[3] Annual water demand (afy) = total site area irrigated (acres) x 3.62 acre-feet per acre per year (annual irrigation demand for Sacramento County).

Source: Wood Rodgers 2007, data compiled by AECOM in 2010

Table 3.17-20
Summary of Land Uses and Demands for Nonpotable Water—Conceptual Strategy Alternative

Land Use	Area (acres)[1]	Irrigated-Surface-Area Factor[2]	Site Area Irrigated (acres)	Water Demand (afy)[3]
Commercial	10.9	0.5	5.5	19.9
Schools	108.4	0.7	75.9	274.8
Parks	82.0	0.9	73.8	267.2
Public/quasi-public	7.2	0.5	3.6	13.0
Pedestrian/landscape corridor and parkways	11.6	0.9	10.4	37.6
Total	**220.1**		**169.2**	**612.5**

Notes: afy = acre-feet per year

[1] Total area includes the total surface area of each land use, including those areas that do not require nonpotable water for irrigation (i.e., structures, parking lots, sidewalks).

[2] Site area irrigated is the amount of irrigated surface area assumed to require nonpotable water, as a percentage of the total area.

[3] Annual water demand (afy) = total site area irrigated (acres) x 3.62 acre-feet per acre per year (annual irrigation demand for Sacramento County).

Source: Wood Rodgers 2007, data compiled by AECOM in 2010

Table 3.17-21
Summary of Land Uses and Demands for Nonpotable Water—Increased Development Alternative

Land Use	Area (acres)[1]	Irrigated-Surface-Area Factor[2]	Site Area Irrigated (acres)	Water Demand (afy)[3]
Commercial	17.7	0.5	8.9	32.2
Schools	94.4	0.7	66.1	239.3
Parks	96.0	0.9	86.4	312.8
Total	**208.1**		**161.4**	**584.3**

Notes: afy = acre-feet per year

[1] Total area includes the total surface area of each land use, including those areas that do not require nonpotable water for irrigation (i.e., structures, parking lots, sidewalks).

[2] Site area irrigated is the amount of irrigated surface area assumed to require nonpotable water, as a percentage of the total area.

[3] Annual water demand (afy) = total site area irrigated (acres) x 3.62 acre-feet per acre per year (annual irrigation demand for Sacramento County).

Source: Wood Rodgers 2007, data compiled by AECOM in 2010

A planned expansion of the SRCSD water recycling facility plant could serve new areas of planned and expected growth and areas of public open space, including Zone 40 and the city of Rancho Cordova. The expanded water-recycling facility and new water-recycling service areas will be called Phase II of the SRCSD Water Recycling Program. Phase II construction will be timed with the need for the higher capacity and is currently expected to be in service within 5 to 10 years. Off-site facilities (i.e., infrastructure, storage tanks, and booster pumps), including those that would serve the project, would be constructed by SRCSD through Phase II of the SRCSD Water Recycling Program.

Because the No USACE Permit, Proposed Project, Biological Impact Minimization, Conceptual Strategy, and Increase Development Alternatives would install a nonpotable-water system at the same time as the potable water system that would supply recycled water to the SPA in the future when such water becomes available, all five

action alternatives would comply with the City's recycled-water ordinance and all other regulatory requirements; therefore, the impacts related to the use of nonpotable-water supplies and infrastructure would be **direct** and **less-than-significant**. The **indirect** impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

3.17.4 RESIDUAL SIGNIFICANT IMPACTS

Impacts associated with increased demand for potable nonpotable water supplies and infrastructure are considered less than significant. Implementation of mitigation measures referenced in Impacts 3.17-3 and 3.17-4 would reduce direct and indirect impacts associated with increased demands for on-site and off-site water conveyance facilities to a less-than-significant level. Implementation of Mitigation Measures 3.3-1a, 3.3-1b, and 3.3-3c would reduce direct significant impacts on jurisdictional wetlands and other waters of the U.S. and on vernal pool fairy shrimp and vernal pool tadpole shrimp resulting from construction of the Americanos Boulevard parallel pipelines, but not necessarily to a less-than-significant level because the project would contribute substantially to the regional loss of these resources and habitat fragmentation and permanent loss/displacement of these special-status wildlife species would result and there are no feasible mitigation measures to fully reduce this impact to a less-than-significant level. Regarding the construction and operation of the Vineyard Surface WTP; the proposed NSAPP; and proposed NVWF Wells 4 through 6, all potentially significant environmental impacts identified in project-level CEQA documents for these facilities would be reduced to a less-than-significant level with implementation of mitigation measures contained in those CEQA documents; therefore, the project would not contribute to any significant and unavoidable impacts associated with that infrastructure. Therefore, there would be no direct or indirect residual significant impacts related to increased demands for water supplies and on-site and off-site water conveyance facilities.

3.17.5 CUMULATIVE IMPACTS

SCWA would provide water supplies to the SPA through its Zone 40 conjunctive-use water supply system. The SPA is identified as a subarea within Zone 40 known as the NSA and includes areas identified as the Sunrise Corridor, Sunrise Douglas Community Plan, Mather Field, Rio del Oro within Zone 40, and Rio del Oro within Cal-Am where wholesale of Zone 40 water supplies would be delivered. The SPA is located within the Sunrise Douglas Community Plan area.

Future development in Zone 40, and in the NSA in particular, would increase demand for potable and nonpotable water supplies and on-site and off-site conveyance facilities in the NSA.

WATER SUPPLY

Four water supply scenarios have been developed as options for providing water to the SPA based on the surface water and groundwater supplies identified above:

- Accelerated Construction of the North Service Area Pipeline
- Delayed Construction of the North Service Area Pipeline
- Conversion of the Anatolia Raw Groundwater Transmission Pipeline
- Groundwater Intensive Development with the SunCreek Groundwater Wells

The total projected water demands are 2,033 afy for the No USACE Permit Alternative, 3,058 afy for the Proposed Project Alternative, 2,672 afy for the Biological Impact Minimization Alternative, 2,952 afy for the Conceptual Strategy Alternative, and 3,478 afy for Increased Development Alternative. As shown in Tables 3.17-10 through 3.17-13 above, SCWA has adequate water supplies available to meet projected water demands under all five action alternatives regardless of the water delivery scenario (see Impact 3.17-1). In the long term,

SCWA anticipates the majority of water demands in the NSA (including the SPA) would be met with surface water. However, the year-to-year mix of surface and groundwater varies depending on a large number of variables and surface water and groundwater supplies would be adjusted as necessary to meet the demands of the NSA as part of its conjunctive use program (MacKay & Somps 2011a:8, SCWA 2006:4-31).

In compliance with SB 610, a WSA has been prepared based on water supplies identified in the Zone 41 UWMP to evaluate the adequacy of existing and future water supplies to meet the water demand created by the project in conjunction with existing and future development in the Zone 40 2030 Study Area (SCWA 2011a). Based on implementation of SBx7-7 requirements and a slower than previously anticipated growth rate, it is projected that the ultimate water demand for the 2030 Study Area as described in the Zone 41 UWMP will probably not occur until 2050. The WSA concluded that SCWA would have sufficient surface water supplies to serve the No USACE Permit, Proposed Project, Biological Impact Minimization, Agency and Conceptual Strategy Alternatives while meeting the projected demands of existing customers and other anticipated future water demands within its service area. Because the WSA considers cumulative development and the cumulative need for water supplies throughout Zone 40's service area (including the 2030 Study Area), and because SCWA has determined that there is adequate water supply to serve this cumulative development (including the project), the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to increased demands for water supplies.

The WSA prepared for the project concluded that because the water supply demand under the Increased Development Alternative (3,478 afy) is more than the water demand estimated by SCWA for the SPA (3,176 afy), sufficient water supplies may not be available to meet water demands (SCWA 2011b:27). However, because the City's general plan requires written certification verifying the availability of a long-term, reliable water supply for the project or that needed improvements will be in place prior to occupancy, the Increased Development Alternative would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to increased demands for water supplies.

WATER CONVEYANCE FACILITIES

There are no public water supply facilities within the SPA, and therefore the project would require construction of a new on-site water system (see Impact 3.17-2). Implementation of Mitigation Measure 3.17-2 would reduce potentially significant project-related impacts related to on-site water conveyance facilities to a less-than-significant level by ensuring water conveyance facilities sufficient to convey water supplies to subdivisions or nonresidential uses would be in place or adequate financing would be secured. The related projects would also need to construct their own on-site water supply systems. These individual on-site systems are site-specific, and would not combine together to result in direct cumulative water supply infrastructure impacts. Therefore, the project would not result in a cumulatively considerable incremental contribution to a significant direct cumulative impact related to on-site water conveyance facilities. However, the needs of the related projects for on-site water infrastructure could result in indirect significant impacts as a result of construction activities. These indirect construction-related impacts, and the project's potential cumulative contribution, are evaluated in the cumulative analysis portions of Sections 3.1 through 3.16 of this DEIR/DEIS.

The preferred rate of water supply for the project cannot be delivered until the Vineyard Surface WTP, the proposed NSAPP, the proposed Florin Road/Sunrise Boulevard pipeline, proposed NVWF Wells 4 through 6, and potentially the Anatolia surface water transmission pipeline are constructed and online.

The physical impacts of constructing the Florin Road/Sunrise Boulevard pipeline and Anatolia surface water transmission pipeline facilities are addressed above in Impacts 3.17-3 and 3.17-4, respectively, and impacts associated with the construction of these facilities would be reduced to a less-than-significant level with implementation of the mitigation measures identified above. In addition, implementation of Mitigation Measure 3.17-2 would reduce potentially significant project-related impacts related to on-site and off-site water conveyance facilities to a less-than-significant level by ensuring water conveyance facilities sufficient to convey

water supplies to subdivisions or nonresidential uses would be in place or adequate financing would be secured. Therefore, the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to these two off-site water conveyance facilities.

The Vineyard Surface WTP, the proposed NSAPP, and the proposed NVWF Wells 4 through 6 were identified and analyzed programmatically in the Zone 40 WSMP EIR and at the project level in IS/MNDs prepared for these facilities. Because there is a relationship between the project and the need for the Vineyard Surface WTP, the proposed NSAPP, and proposed NVWF Wells 4 through 6, approval of the project would contribute indirectly to impacts identified in the IS/MNDs prepared for these facilities. All potentially significant environmental impacts identified in project-level CEQA documents for the Vineyard Surface WTP, the NSAPP, and NVWF Wells 4 through 6 would be reduced to a less-than-significant level with implementation of the mitigation measures incorporated as part of those projects. Therefore, the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to the construction and operation of the Vineyard Surface WTP, the NSAPP, and NVWF Wells 4 through 6.

NONPOTABLE-WATER SUPPLIES AND INFRASTRUCTURE

The City adopted a Citywide Recycled Water Distribution Ordinance (Resolution No. 11-2006) stating that new development should install a "purple pipe" recycled-water distribution system. Therefore, while it may not occur for many years, the project includes a component to implement a recycled-water-use program. Construction of the necessary "purple pipe" at the project site would occur concurrently with installation of the potable water piping. It is expected that related projects would install a purple-pipe system as required by the Citywide Recycled Water Distribution Ordinance, and it is assumed that future supplies of nonpotable water would be provided to these related projects by the SRCSD, when sufficient supplies are available to meet each project's demands. Therefore, implementation of the project and the related projects would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to the use of nonpotable-water supplies and infrastructure.