3.5 UTILITIES AND SERVICE SYSTEMS—WATER SUPPLY

This section is structured in a manner to make clear to agencies, decision-makers, and the public that water for the initial and long-term potable-water needs of the proposed project would come from different sources and would require different conveyance systems. To provide additional clarification for the reader, the discussion of the affected environment is presented first and includes a brief summary of regional and local water supply planning. The regulatory background is presented next; followed by the thresholds of significance, which includes a description of the relationship of the project to recent decisions in applicable California case law along with the applicable thresholds based on Appendix G of the California Environmental Quality Act Guidelines (State CEQA Guidelines); and then the methodology used to analyze potential project impacts related to water supply is presented. Finally, the potential impacts of project implementation on initial and long-term water supplies and conveyance facilities are analyzed; where appropriate, mitigation measures are provided to avoid or minimize impacts to the extent feasible.

To fully evaluate the specific impacts associated with water supply demand and conveyance facilities, this recirculated draft environmental impact report (DEIR)/supplemental draft environmental impact statement (DEIS) separates the initial water supply demands and conveyance facilities and the long-term water supplies and water conveyance facilities into separate impacts at both the program level and the project level. Other available alternatives are identified for both initial and long-term water supplies in the event that the proposed initial or long-term water supplies are delayed or never provided.

3.5.1 AFFECTED ENVIRONMENT

WATER FORUM AGREEMENT

The Water Forum process brought together a diverse group of stakeholders that included water managers, business and agricultural leaders, environmentalists, citizen groups, and representatives of local governments to evaluate available water resources and the future water needs of the Sacramento metropolitan area. The coequal objectives of the Water Forum are (1) to provide a reliable and safe water supply for the region's economic health and planned development through the year 2030; and (2) to preserve the fishery, wildlife, recreational, and aesthetic values of the lower American River. The first objective will be met by additional diversions of surface water for the conjunctive use of surface water and groundwater, expanded water demand management programs, and use of recycled water. The second objective will be met by regulating American River flow patterns (or "modifying" American River flow) to improve instream fish habitat (spawning/hatching/rearing), as well as implementation of the Habitat Management Element of the Water Forum Agreement (WFA).

Demand management/water conservation is essential to meeting the coequal objectives of the WFA. Conservation will reduce the amount of groundwater and surface water (including water from the American River) required for future growth. As a signatory to the WFA and as a water contractor under the U.S. Bureau of Reclamation's (Reclamation's) Central Valley Project (CVP), the Sacramento County Water Agency (SCWA) is committed to implementing the water conservation best management practices (BMPs) defined in the Water Conservation Element of the WFA. Technical studies prepared in support of the WFA indicate that implementation of the BMPs (most notably the provision for water meter retrofits and demand pricing) will result in a demand factor reduction of 25.6% relative to the 1990 baseline by the year 2030.

The 1999 Water Forum EIR evaluated SCWA's water supply needs in combination with other water supply needs in the region. SCWA agreed to a series of actions and commitments related to diversions of surface water, dry-year supplies, fishery flows, habitat management, water conservation, and groundwater management. The 2030 demand and water supplies identified in the Water Forum EIR were used by Sacramento County (County) (in its role as a land use agency) to describe an area of development that could be served by these supplies. The Water Forum EIR evaluated the provision of water for a 30-year planning period based on land use projections. The 2005 Zone 40 Water Supply Master Plan (WSMP) relied on the *County of Sacramento General Plan* to identify

where urban development would occur within the county, consistent with WFA purveyor-specific agreements for water service to those areas.

In Sacramento County, three groundwater subbasins—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)—have been identified. Zone 40 lies entirely within the Central Area. Technical studies conducted in support of the WFA provided a basis for defining the negotiated sustainable yield for each of the three Sacramento County 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 acre-feet per year (afy), including groundwater pumping in the Central Basin.

SACRAMENTO COUNTY WATER AGENCY

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 2005a). The purpose of the Zone 40 WSMP was to identify available water and the infrastructure necessary to deliver water to a subarea within Zone 40 known as the 2030 Study Area. The 2030 Study Area encompasses approximately 46,600 acres (including portions of the cities of Elk Grove and Rancho Cordova) 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).

As a signatory to the WFA, SCWA has agreed to ensure that water conservation and demand 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; 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 within Zone 40, as well as the financing mechanisms to provide water to the 2030 Study Area.

During development of the Zone 40 WSMP, the general plans for the newly incorporated Cities of Elk Grove and Rancho Cordova were not available; therefore, the *County of Sacramento General Plan* (County of Sacramento 1993) was the planning document used to project growth and development anticipated to occur within an area defined as the Urban Policy Area (UPA). The County's UPA is defined as the area anticipated to build out with urban development within the planning horizon of the general plan (year 2024). This area is known as the 2030 Study Area. The southern boundary of the 2030 Study Area generally coincides with the County's UPA. The 2030 Study Area was delineated based on the County's identified growth areas and the area of land that was planned to be served by the negotiated firm water supply identified in the WFA. Because of the time frame of the Zone 40 WSMP and the likelihood that the UPA would be expanded during the next general plan update (currently under way), SCWA identified four likely areas outside the UPA where urban expansion was logical and could occur; however, SCWA acknowledges that it is not a land use agency and is not responsible for approving growth and development within its service area, and it identified Sacramento County, the City of Rancho Cordova, and the City of Elk Grove as the lead agencies responsible for such decisions. The areas included in the 2030 Study Area were selected based on their adjacency to the UPA. The 2030 Study Area also captured active projects and included the newly incorporated City of Rancho Cordova.

SCWA prepared a DEIR to analyze the impacts of implementing the Zone 40 WSMP. The environmental analysis included an evaluation of how environmental conditions would be expected to change as a result of the Zone 40 WSMP, which includes implementation of a conjunctive-use program of groundwater, surface-water, and recycled-water supplies, as well as a financing program for the construction of a new surface-water diversion structure; surface-water treatment plant; water conveyance pipelines; groundwater extraction, treatment, storage, and distribution facilities; and recycled-water storage and distribution facilities. The DEIR was prepared and circulated for public review in November 2003 (SCH #95082041), and the final environmental impact report (FEIR) was certified and the master plan was approved in 2005. Because there was no legal challenge to the WSMP and its EIR, the EIR is deemed as a matter of law to be adequate under CEQA for its intended purposes. (Public Resources Code, Section 21167.2.)

The Rio del Oro project site lies wholly within Zone 40 and partially within the 2030 Study Area. Although the 2030 Study Area does not cover the entire project site, a portion of the water supply demand (1,500 afy) for this area, identified in the Zone 40 WSMP as the Security Park area, has been included within the Zone 40 WSMP.

Related Water Supply Projects

Since approval of the Zone 40 WSMP (SCWA 2005a), SCWA has pursued and is in various stages of planning several projects that would implement specific elements of the WSMP. These projects are briefly summarized below.

Freeport Regional Water Project

The Freeport Regional Water Authority (FRWA) was created by exercise of a joint-powers agreement between SCWA and the East Bay Municipal Utility District (EBMUD). FRWA's basic purpose is to increase the reliability of water service for customers, reduce rationing during droughts, and facilitate conjunctive use of surface-water and groundwater supplies in central Sacramento County. The FRWA developed the Freeport Regional Water Project (FRWP) to meet the objectives of SCWA and EBMUD.

The FRWP involves construction of a 185-million-gallon-per-day (mgd) intake facility and pumping plant located on the Sacramento River, a reservoir and water treatment plant (WTP), 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.)

A DEIR/DEIS was prepared and circulated for public review in July 2003 (SCH #2002032132), and the FEIR was certified in April 2004. No legal challenge was filed under CEQA or NEPA. FRWA subsequently completed federal Endangered Species Act (ESA) compliance in fall 2004, leading to Reclamation's issuance of the record of decision in January 2005. Minor adjustments to the project were made after certification of the FEIR, and a supplemental initial study/mitigated negative declaration (IS/MND) was prepared and circulated for public review in February 2006. The supplemental IS/MND was adopted in March 2006.

The project is currently under construction and estimated to be operation in late 2009 or early 2010. Once operational, the FRWP will provide SCWA with up to 85 mgd of surface water from the Sacramento River that would be conveyed by FRWA 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 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.

Vineyard Surface Water Treatment Plant

SCWA will construct 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 would be 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. Water would be diverted from the Sacramento River via the FRWP facilities and conveyed to the Vineyard Surface WTP for treatment and delivery to SCWA Zone 40. After the water is treated at the Vineyard Surface WTP, it would be delivered to the project site through the North Service Area Pipeline Project (NSAPP).

The environmental impacts of the construction and operation of the Vineyard Surface WTP were analyzed at a programmatic level in the Zone 40 WSMP, and at a project-level in an IS/MND (SCH #20047092050), which was circulated for public review in September 2004. The IS/MND was adopted by the County on October 10, 2004. SCWA awarded a contract for construction of the Vineyard Surface WTP in January 2008. Construction is estimated to begin in spring 2008 and the plant is anticipated to be operational in 2011, with full buildout by 2029 (SCWA 2007b).

Eastern County Replacement Water Supply Project

The SCWA is proposing the Eastern County Replacement Water Supply Project (RWSP) in eastern Sacramento County. The RWSP would consist of a system of conveyance facilities (i.e., pipelines and pump stations) to transport remediated water from groundwater extraction and treatment (GET) facilities to surface streams with discharge points along the American River. The GET-remediated water would be diverted at Reclamation's Folsom South Canal, the City of Sacramento's Fairbairn WTP diversion, and the FRWP intake structure (currently under construction) on the Sacramento River, downstream of the American River confluence. Diverted GET-remediated water would be delivered to the Golden State Water Company (GSWC) and the Cosumnes River via the Folsom South Canal, Cal-American Water Company (Cal-Am) via the Fairbairn diversion, and SCWA wholesale and retail customers via the FRWP intake structure. No new diversion facilities are part proposed as part of the RWSP. Under the proposed RWSP, water for SCWA users would be diverted at the FRWP and treated at the Vineyard Surface WTP. As discussed above, those facilities have already undergone CEQA environmental review and are under construction.

The DEIR (SCH #2004042122) for the RWSP was circulated for public review in October 2006. The DEIR comment period has closed, but currently there is no date scheduled for consideration of approval and certification of a FEIR. As more discussed below, SCWA does not anticipate implementing the RWSP in its entirety as described in the DEIR and will be seeking changes to the current Aerojet-County Agreement, discussed below.

North Service Area Pipeline Project

Water would be conveyed from the Vineyard Surface WTP to the North Service Area via the NSAPP. The preferred alignment would begin at the Vineyard Surface WTP and continue east along Florin Road. At the intersection of Florin Road and Eagles Nest Road, the pipeline would head north along Eagles Nest Road, which transitions into Zinfandel Road at the intersection of Douglas Road. The pipeline continues north along Zinfandel Road to a storage tank and pump station just north of Douglas Road and adjacent to the east side of the Folsom South Canal. In addition to providing water supplies to the project (including the Cal-Am portion where wholesale Zone 40 water supplies would be delivered), the NSAPP would also serve the Mather, Sunrise Corridor, Sunrise Douglas, and Westborough areas.

A proposed North Service Area pipeline alignment was identified in the 2005 Zone 40 WSMP EIR, and the environmental impacts of the construction of the pipeline were analyzed at a programmatic level in the Zone 40

WSMP. The NSAPP has not undergone project-level CEQA review, but SCWA expects that an EIR for the NSAPP will be prepared in 2008. The date that this pipeline would be in service is currently unknown, but is estimated at 2014.

Related Water Supply Planning Documents

In addition to the Zone 40 WSMP, SCWA has adopted other comprehensive water supply planning documents intended to work together to form the planning basis for the Zone 40 service area. These documents are briefly summarized below.

Central Sacramento County Groundwater Management Plan

The Central Sacramento County Groundwater Forum was initiated in 2002 by the Water Forum Successor Effort to carry out a portion of the Water Forum's mission to develop a groundwater management program to protect the health and viability of the central Sacramento County groundwater basin for both current users and future generations.

The Central Sacramento County Groundwater Forum developed the *Central Sacramento County Groundwater Management Plan* (February 2006) (CSCGMP), which sets forth objectives for managing the groundwater basin underlying Zone 40 and establishes parameters for monitoring the performance of the management strategies. The CSGGMP is intended to adapt to changing conditions within the groundwater basin and to be updated and refined to reflect progress made in achieving the CSCGMP objectives.

Zone 40 Groundwater Management Plan

SCWA prepared a groundwater management plan (SCWA 2004b) for Zone 40. Although groundwater management plans are typically prepared for entire groundwater basins (in this case the Central Basin), SCWA's groundwater management plan addresses only the boundaries of Zone 40, which encompasses most but not all of the Central Basin. The goal of the plan is to ensure a viable groundwater resource for beneficial uses, including water for adjacent purveyors; and agricultural, residential, industrial, and municipal supplies that support the WFA's coequal objectives of providing a reliable and safe water supply and preserving the fishery, wildlife, recreational, and aesthetic values of the lower American River. In addition, the plan promotes the enhancement of maintaining ecological flows in the Cosumnes River. The Zone 40 groundwater management plan is now superseded by the CSCGMP. However, before the CSCGMP, groundwater management within Zone 40 by SCWA was based on the Zone 40 groundwater management plan.

2005 Zone 41 Urban Water Management Plan

The *2005 Zone 41 Urban Water Management Plan* (Zone 41 UWMP) (SCWA 2005b) 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 proposed project, 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).

Zone 40 Water System Infrastructure Plan

To build on the 2005 Zone 40 WSMP, SCWA prepared the *Zone 40 Water System Infrastructure Plan* (November 2006) (Zone 40 WSIP) that addresses how identified 2030 water supplies addressed in both the Zone 41 Urban Water Management Plan (UWMP) and the Zone 40 WSMP would be allocated among users within its service area. 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; and it also 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. As such, it is not a document that is formally adopted, and the plan is not required to go through environmental review pursuant to CEQA.

The Zone 40 WSIP divides the Zone 40 service area into three major subareas for planning purposes. From east to west, these areas are identified as the North Service Area, the Central Service Area, and the South Service Area. A portion of the City's planning area, including the project site and areas identified as Mather, Sunrise Corridor, Sunrise Douglas, and Westborough, are located within the boundary of the North Service Area.

Related Water Supply Agreements

In addition to the Zone 40 WSMP, SCWA has entered into agreements that require delivery of water to purveyors and for beneficial uses. These agreements are briefly summarized below.

GET Remediated Water and the Agreement between Sacramento County, the Sacramento County Water Agency, and Aerojet General Corporation

Aerojet General Corporation (Aerojet) currently extracts and treats contaminated groundwater at various GET facilities at or near its property in eastern Sacramento County. The GET facilities are operated under one or more directives from the U.S. Environmental Protection Agency (EPA), the Central Valley Regional Water Quality Control Board (RWQCB), and the California Department of Toxic Substances Control (DTSC). The directives require extraction of contaminated groundwater, treatment of the groundwater, and appropriate discharge of treated groundwater, principally to the American River. The GET facilities currently extract, treat, and discharge to the American River approximately 15,000 afy of GET-Remediated Water, and these facilities are being expanded under government oversight over the next several years to extract, treat, and discharge more than 26,000 afy. Additionally, there are two other GET facilities (also under environmental agency oversight) that presently discharge to Morrison Creek, but can, through construction of new pipelines, discharge to the American River. One of the GET facilities discharging to Morrison Creek is operated by McDonnell Douglas Corporation (MDC)/Boeing, which, along with Aerojet, is obligated to remediate groundwater migrating from portions of property formerly owned by MDC/Boeing and currently owned by Aerojet. Upon completion of all planned GET facilities, and if the water currently discharging to Morrison Creek is redirected to the American River through pipelines, more than 35,000 afy of treated groundwater would be discharged to the American River.

GET-Remediated Water is currently discharged to the American River and is available for diversion at the FRWP on the Sacramento River under agreement between Aerojet and SCWA authorizing that diversion. The agreement, which was entered in 2003, grants to SCWA the GET-Remediated Water discharged to the American River. In exchange for this water, among other matters, SCWA agreed to provide replacement water to GSWC and Cal-Am through a replacement water supply project and to provide water for development for the Aerojet properties (including Rio del Oro) in excess of the replacement water-supply obligations. (*Agreement Between Sacramento County, The Sacramento County Water Agency, and Aerojet General Corporation with Respect to Groundwater and Related Issues within the Eastern Portion of Sacramento County* [August 27, 2003]) (Aerojet-County Agreement).

The Aerojet-SCWA Agreement allowed either party to terminate the agreement if SCWA has not certified the FEIR and approved the RWSP by a specified date. The specified date has now passed. Neither party has yet acted

to terminate the Aerojet-County Agreement and it currently remains in effect; however, SCWA has informed Aerojet that it will require changes to the Aerojet-County Agreement and that it does not anticipate implementation of the RWSP in its entirety as currently described in the RWSP DEIR.

SCWA also entered into an agreement with MDC/Boeing under which SCWA would be granted GET-Remediated Water allocable to MDC/Boeing from the facility that MDC/Boeing operates (*Agreement Between Sacramento County, The Sacramento County Water Agency, and McDonnell Douglas Corporation with Respect to Groundwater and Related Issues within the Eastern Portion of Sacramento County* [August 29, 2003]) (MDC-County Agreement). The MDC-County Agreement contained a different termination clause, and that agreement has been terminated because SCWA had not approved the RWSP by a date specified in that agreement. The water that was contemplated under this MDC-County Agreement is not necessary for the Rio del Oro project.

Approval and implementation of the RWSP by SCWA as described in the RWSP DEIR is not required for GET-Remediated Water to be available to SCWA to meet Rio del Oro's demand in addition to SCWA's existing and other projected future demands. The GET-Remediated Water is already being discharged to the American River at quantities sufficient to meet this increased demand from Rio del Oro and could be made available to SCWA at FRWP through implementation of the Aerojet-County Agreement, a modified agreement, or a new agreement.

Golden State Water Company Agreement

Aerojet and GSWC entered in a Master Settlement Agreement (MSA) under which both parties agreed to Aerojet's obligations to provide replacement water, as needed, for supply lost as a result of groundwater contamination from past activities by Aerojet. The MSA contains a contingency plan under which Aerojet and GSWC have reached agreement on certain actions, and which provides for a mechanism to resolve disputes if changes in the contingency plan are required. GSWC entered into a water supply agreement with Sacramento County and SCWA concurrent with the MSA. The water supply agreement assists with the implementation of the MSA, and the Aerojet-County Agreement by establishing the terms and conditions under which SCWA would be responsible for providing replacement groundwater to GSWC. The agreements provide a negotiated solution to sharing the groundwater resources in this portion of Sacramento County. The water supply agreement requires that the County approve a replacement water supply project (as such the County has circulated the RWSP DEIR). Should the RWSP be approved, the water supply agreement requires SCWA to make replacement water available to GSWC, the SCWA would be required to deliver 5,000 afy of replacement water to GSWC's intake facilities on the Folsom South Canal. GSWC's need for additional replacement water (i.e., water amounts greater than 5,000 afy) would be determined annually in a meet-and-confer session with SCWA. Regardless of demonstrated need, GSWC's total maximum allocation of replacement water supply in any year could not exceed 15,200 acre-feet (af) (i.e., 5,000 afy delivered to GSWC at the Folsom South Canal plus a maximum of 10,200 afy through FRWP facilities). (City of Rancho Cordova 2006b, Golden State Water Company 2005.)

Cal-Am Agreement

Currently, no separate replacement water supply agreement exists between SCWA and Cal-Am. To the extent that the County is obligated to provide replacement water to Cal-Am under the Aerojet-County Agreement (or modified agreement), it is the intent of SCWA to negotiate such an agreement. SCWA has been working cooperatively with the City of Sacramento to investigate ways to deliver Place of Use (POU) surface water (or replacement water in dry years) to Cal-Am's service area, which lies within the POU (this includes up to 5,000 afy of either POU or replacement water). This would allow groundwater currently being extracted in the POU area to be imported into areas affected by groundwater contamination within Zone 40. (City of Rancho Cordova 2006b.)

Lower Cosumnes River Environmental and Water Management MOA

The *Memorandum of Agreement for the Management for Water and Environmental Resources Associated with the Lower Cosumnes River* has been entered into by SCWA, the Southeast Sacramento County Agricultural Water

Authority, and The Nature Conservancy (TNC). The goal of the memorandum of agreement (MOA) is to restore and maintain key functions of the Cosumnes River corridor while furthering conjunctive use in the agricultural areas between the American and Cosumnes Rivers and from the Cosumnes River to the southern boundary of Sacramento County. The signatories to the MOA seek to ensure the viability of both the agricultural economic base and ecosystems associated with the Cosumnes River. Through the MOA, the signatories are committed to working together to enhance conjunctive use within the region to reduce groundwater pumping and improve flow conditions in the Cosumnes River. The proposed project would make available approximately 5,000 afy to SCWA, which would make the water available to TNC. TNC would need to obtain the necessary agreements to divert the water from Folsom South Canal to the Cosumnes River for supplemental flows on a schedule that is beneficial for fisheries enhancement and groundwater recharge.

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. Table 3.5-1 identifies existing and projected land uses and water demands for 2000 and 2030 within SCWA's Zone 40 2030 Study Area.

Table 3.5-1
Current and Projected Water Demands for SCWA Zone 40

Land Use Category	Year 2000 Land Use and Water Demand			Year 2030 Water Demand		
	Unit Water Demand Factors (af/ac/yr)	Land Use (acres)	Water Demand (afy)	Unit Water Demand Factors (af/ac/yr)	Land Use (acres)	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		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.
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.
Minor discrepancies in acreage totals are a result of rounding in land use data.
Source: SCWA 2005a

The project site lies wholly within Zone 40, and a portion (1,505 acres) of the project site lies within the 2030 Study Area. Specifically, this portion falls within what SCWA identified in the Zone 40 WSMP as the Security Park area, where a water demand of 1,500 afy was assumed. (The Security Park region of the WSMP includes both the Security Park and lands immediately surrounding it, and therefore includes some of the lands that are located within the project site. However, the Security Park itself is not part of the project site.) The remaining water demand for the project site would be met with GET-Remediated Water and infrastructure made available through the FRWP and NSAPP.

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, recycled water, and remediated water (GET-Remediated 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 3.5-2 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 (not including GET-Remediated Water).

Table 3.5-2
Water Supplies for SCWA Zone 40[1]

Component of Water Supply	Average Annual Supply (afy)
Surface Water[2]	68,637
Groundwater	40,900
Recycled Water	4,400
Total Supplies	**113,937**

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 groundwater extraction and treatment (GET)–Remediated Water supply.
[2] The total estimated average annual supply of surface water is the sum of existing entitlements and proposed future entitlements.
Sources: SCWA 2005a, 2005b

SURFACE-WATER SUPPLIES FOR SCWA ZONE 40

SCWA surface-water supplies come from the American and Sacramento Rivers. The components of the surface-water supply in Zone 40 are shown in Table 3.5-3 and described below. SCWA's total estimated long-term average annual supply of surface water (existing entitlements and proposed future entitlements) is 68,637 afy.

Table 3.5-3
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)
SMUD Assignment	American River	Existing	30,000	26,000
"Fazio" Water (PL 101-514)	American River	Existing	15,000	13,551
Appropriative Water Supplies	Sacramento River	Planned [1]	Undetermined	14,586
Other Transfer-Water Supplies	American River	Planned	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	Planned [1]	9,300	9,300
Total Surface Water				**68,637**

Notes:
afy = acre-feet per year; PL = Public Law; POU = Place of Use; SCWA = Sacramento County Water Agency; SMUD = Sacramento Municipal Utility District;
[1] Per SCWA, final agreement for this water is expected to be negotiated by spring 2008.
Sources: SCWA 2005a, 2005b; Coppola, pers. comm., 2008

Existing Central Valley Project Water Supply Entitlements for SCWA Zone 40

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, has assigned 15,000 afy of its CVP contract water to SCWA for municipal and industrial use. Each of these contracts remains in effect until they expire in 2010.

SMUD's WFA purveyor-specific agreements directs SMUD to assign a second 15,000 afy of surface water 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 cogeneration facility during water shortages in dry years.

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

In April 1999, 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. The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) issued biological opinions (BOs) on the contract in accordance with the federal ESA. Reclamation issued a record of decision on the water service contracts on April 7, 1999. The BO issued by NMFS limited the water diversion amount to 7,200 afy until new fish screens were installed at the City of Sacramento's Sacramento River water treatment plant. Construction of a fish screen was completed in 2004 for the City of Sacramento's municipal intake facility along the Sacramento River, and now the full contract amount of 15,000 afy is available and authorized through the contract. This screen protects outmigrating spring-, fall-, and winter-run chinook salmon; Central Valley steelhead; Delta smelt; Sacramento splittail; and resident game and nongame fish from entrainment. 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.

SCWA's Planned Entitlements to Surface-Water Supply

Appropriative Water Supplies

SCWA has submitted an application to the State Water Resources Control Board (SWRCB) for appropriation of water from the Sacramento River (the County Board of Supervisors authorized submittal of this application on June 13, 1995). 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 could be 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 is 71,000 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 the surface water. SCWA expects that final agreement for this water will be negotiated by spring 2008 (Coppola, pers. comm., 2008).

City of Sacramento's American River Place of Use Agreement

SCWA is pursuing an agreement under which the City of Sacramento would 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. SCWA expects that final agreement for this water will be negotiated by spring 2008 (Coppola, pers. comm., 2008).

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 agreements have been executed at this time; they are still in the preliminary negotiation stage.

Surface-Water Supplies for Dry Years

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 to not divert from the American River during dry years. During dry years, SCWA would increase groundwater pumping so that it could continue to meet customers' water demand, and it would implement a water-shortage contingency plan that would result in a 28% reduction in water demand (SCWA 2005b).

Groundwater within SCWA Zone 40

The Central Area groundwater subbasin (i.e., the Central Basin) corresponds to the South American Sub-Basin (California Department of Water Resources [DWR] Basin Number 5-21.65) and is located between the American River and the Cosumnes River. Zone 40 is located within the Central Basin.

Groundwater in the Central Basin is classified as occurring in a shallow aquifer zone or in an underlying deeper aquifer zone. Within Zone 40, the shallow aquifer extends to approximately 200–300 feet below the ground surface; in general, the water quality in this zone is considered good, except for the occurrence of low levels of

arsenic in some locations. The shallow aquifer is typically used for private domestic wells and requires no treatment unless naturally occurring arsenic is encountered.

The deep aquifer is semiconfined by and separated from the shallow aquifer by a discontinuous clay layer. The base of the deep aquifer averages approximately 1,400 feet below the ground surface. Water at the base of the deep aquifer has higher concentrations of total dissolved solids. Iron and manganese typically found in the deep aquifer are at levels requiring treatment. Groundwater used in Zone 40 is supplied from both the shallow and deeper aquifer systems.

Recharge to the aquifer system occurs along river and stream channels where extensive sand and gravel deposits exist, particularly along the American, Cosumnes, and Sacramento River channels. Additional recharge occurs along the eastern boundary of Sacramento County at the transition point from the consolidated rocks of the Sierra Nevada.

Groundwater elevations through much of the Central Basin generally declined from the 1950s to about 1980 by about 20–30 feet. From 1980 to 1983, water levels recovered by about 10 feet and remained stable until 1987, which was the beginning of the 1987–1992 drought. From 1987 to 1995, water levels declined by about 15 feet. From 1995 to 2003, most water levels recovered to higher levels than before the 1987–1992 drought. Much of this recovery can be attributed to increased use of surface water in the Central Basin and the fallowing of previously irrigated agricultural lands for development of urban uses.

Groundwater Supplies in SCWA Zone 40

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. Total groundwater pumping (i.e., urban and agricultural pumping) within the Central Basin is approximately 248,500 afy, of which approximately 59,700 afy is pumped within Zone 40 (agricultural demand, 21,900 afy; urban demand, 37,800 afy) (SCWA 2005a). The remaining groundwater is pumped by the City of Sacramento, Elk Grove Water Service, Cal-Am, GSWC, and private and agricultural pumpers. Projected groundwater pumping volumes from the Central Basin in 2030 would range from 235,000 afy to 253,000 afy for urban and agricultural demands (SCWA 2005a). 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 2030 (Table 3.5-4).

Table 3.5-4
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; SCWA = Sacramento County Water Agency; WSMP = *Water Supply Master Plan*.

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

Source: SCWA 2005a

Potential Future Groundwater Supplies in SCWA Zone 40

Additional Groundwater Pumping

The Zone 40 WSMP evaluated a suite of options for the conjunctive-use water supply system, including surface-water entitlements, groundwater, and GET-Remediated Water from the Aerojet and MDC/Boeing properties. Within the suite of groundwater and surface-water supplies contemplated in the EIR for the Zone 40 WSMP, SCWA evaluated the impacts of groundwater extraction that would occur as a result of remediation activities by Aerojet and MDC/Boeing. At the time the EIR for the Zone 40 WSMP was being prepared (2003–2004), groundwater extraction volumes at the Aerojet and MDC/Boeing properties totaled an estimated 18,664 afy. Based on existing agreements at that time, the WSMP EIR projected that groundwater extraction rates would increase to an estimated 35,890 afy by 2030 (see Table 6.3 of Appendix F of the EIR for the Zone 40 WSMP). These projected future groundwater-extraction volumes for the Aerojet and MDC/Boeing properties were evaluated to determine whether these volumes, when combined with other groundwater pumping in Zone 40 and other groundwater pumping in the Central Basin, would exceed the negotiated sustainable yield of the Central Basin (i.e., 273,000 afy) as determined through the WFA stakeholder process. (See Alternatives 2a, 2b, 2c, and 3 in Appendix F of the EIR for the Zone 40 WSMP.) The EIR for the Zone 40 WSMP concluded that under various scenarios contemplating different levels of reuse of the estimated 35,890 afy of remediated groundwater, groundwater extraction volumes within the Central Basin would be slightly less than the negotiated sustainable yield, and groundwater levels would be higher than the minimum levels determined by the WFA. At the time the EIR for the Zone 40 WSMP was prepared, remaining groundwater-pumping capacity within the Central Basin varied from 20,000 afy to 40,000 afy. In the future, groundwater extraction rates at the Aerojet and MDC/Boeing facilities may exceed the estimated 2030 extraction rate (i.e., 35,890 afy) because of the need to better contain plumes. Going forward, the parties will determine whether this additional remediated groundwater be available to serve new development within the SCWA service area. In addressing this question, the parties will make inquiries regarding whether the additional pumping volumes would be within remaining sustainable-yield pumping capacity, whether these volumes would cause total groundwater pumping volumes within the Central Basin to exceed the negotiated sustainable yield, and whether these extraction rates would have greater impacts on groundwater hydrology (e.g., elevations, cone of depression) within Zone 40. Additional pumping to supply new development would occur only if it was within the sustainable yield.

Improved Sustainability of Groundwater

An opportunity may exist to investigate the sensitivity of the Central Basin's negotiated sustainable yield and determine whether any additional pumping capacity may exist without causing the basin to become overdrafted. The sustainable yield for the Central Basin was negotiated by a variety of stakeholders through the Water Forum process. The City of Rancho Cordova would need to coordinate with the Water Forum successor effort—the Central Sacramento County Groundwater Forum—and other groundwater appropriators to scientifically and comprehensively evaluate whether the Central Basin could support a higher yield (more than 273,000 afy) while still maintaining the objectives of the WFA.

If it is determined that a higher yield could be supported, there may be additional long-term water supplies that could serve new development within the Central Basin. A portion of these supplies may be available to serve the project. However, the feasibility of this water supply source and the volume of available water supply are currently unknown and cannot be determined with any certainty based on the analysis provided in existing environmental documents (e.g., the EIRs for the WFA and the Zone 40 WSMP). The impacts of additional pumping would need to be evaluated through a separate environmental review process. This option would be utilized only if the additional pumping necessary to supply the project is within the sustainable yield. The Rio del Oro project area does not depend on this supply and is not intending to rely on this supply as others are more certain and readily available.

GET-Remediated Groundwater

Aerojet currently extracts and treats groundwater for contaminants at various GET facilities at or near its property in Eastern Sacramento County. The GET facilities are operated under one or more directives from the EPA, the Central Valley RWQCB, and DTSC. These directives require extraction of contaminated groundwater, treatment of the groundwater, and appropriate discharge of treated groundwater, principally to the American River. The GET facilities currently extract, treat, and discharge to the American River approximately 15,000 afy of GET-Remediated Water; the facilities are being expanded under government oversight over the next several years to extract, treat, and discharge more than 26,000 afy. Additionally, there are two other GET facilities (also under environmental agency oversight) that presently discharge to Morrison Creek, but that can discharge to the American River if new pipelines are constructed. One of the GET facilities discharging to Morrison Creek is operated by Boeing/MDC. (MDC/Boeing and Aerojet are obligated to remediate groundwater migrating from portions of property formerly owned by MDC/Boeing and currently owned by Aerojet.) Upon completion of all planned GET facilities, and if the water currently discharging to Morrison Creek is redirected to the American River through pipelines, more than 35,000 afy of treated groundwater would be discharged to the river. Approximately 15,000 afy of GET-Remediated Water is currently discharged to the American River and is currently available for diversion at the FRWP on the Sacramento River under the terms of an agreement between Aerojet and SCWA.

Reasonable Likelihood of Zone 40 Water Supplies

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. As detailed in the Rio del Oro Water Supply Assessment (WSA) (SCWA 2006a), the hydrologic effects of implementing the 2005 Zone 40 WSMP were analyzed using the Sacramento County Integrated Groundwater Surface Water Model (IGSM) (WRIME 2003). 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. The IGSM model runs performed to analyze the effects of the Zone 40 WSMP evaluated the 2030 Study Area, as well as surrounding areas, 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 2000 level of development, held constant over a 74-year period of historical hydrology. The 2030 Condition represents the long-term effects of the 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 and increases in surface-water supplies 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 WFA projected level of 116 feet below msl to 130 feet below msl.

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 those determined to be acceptable to the Water Forum, and this impact was considered less than significant in the EIR for the Zone 40 WSMP.

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 2030 water demands. SCWA intends to continue to extract groundwater to meet its customer demands within the limits of the negotiated sustainable yield of the Central Basin. In addition, SCWA has the transfer of ownership rights of GET Remediated Water discharged by Aerojet for beneficial use within Zone 40. Therefore, SCWA's groundwater supplies are considered reliable, as are those surface water supplies for which SCWA enjoys existing CVP contracts (the SMUD and Fazio supplies), and there is reasonable likelihood that these water supplies will continue to be available.

Circumstances Affecting the Likelihood of Long-Term Water Supplies

Competing Users

Because Zone 40 water is allocated on a first-come, first-served basis, the water available to the project under the Zone 40 WSMP and the Zone 41 UWMP could be affected by rapid development in other portions of Zone 40 or by expansion of the City of Elk Grove's urban services area. Neither scenario has occurred or is anticipated to occur in the immediate future. As development occurs, SCWA will track service demands in relation to available supplies. Specific projects that are planned for in the future would be served with water supplies as the necessary conveyance and treatment facilities to deliver water to the newly developing areas are developed.

Endangered Species Act Clearance for CVP Water at the Freeport Intake Facility

The surface water that SCWA receives from the CVP is supplied by Reclamation, which operates its CVP system in coordination with DWR's operation of the State Water Project (SWP). These two public agencies prepared an updated document for the Operations Criteria and Plan (OCAP) governing ongoing operation of the joint federal-state system. The federal interagency "Section 7 consultation" required for ESA compliance, as conducted in 2004 by USFWS, has been found to be legally insufficient, as described below. There is a possibility that, due to this problem, diversion of CVP surface waters (including SCWA's surface water entitlements), could be subject to future curtailment to satisfy new requirements developed through a new Section 7 consultation; thus there is some uncertainty about these long-term supplies. However, these waters are not likely to be curtailed, and thus they are sufficiently secure to satisfy the degree of certainty required for water supply in the court's ruling in *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007, 40 Cal. 4th 412). In short, the CVP supplies are "reasonably likely" supplies within the meaning of the legal discussion in that court case.

On May 25, 2007, a court order was filed in the U.S. Eastern District Court in Fresno in the matter of *NRDC v. Kempthorne* (Case No. 1:05-CV-01207) (Order). Issued by Judge Oliver W. Wanger, the Order holds that USFWS violated the federal ESA in preparing its BO for Delta smelt for the OCAP, by which Reclamation and DWR jointly operate the CVP and the SWP. The OCAP outlines the joint operation of the CVP and SWP systems, including the pumps in the Sacramento–San Joaquin Delta (Delta) that send water to the San Joaquin Valley and Southern California.

Along with the OCAP, Reclamation included the FRWP and several other pending water-related projects in the ESA Section 7 consultation to avoid having to do separate consultations for these water projects. Prepared by USFWS in response to a request from Reclamation, the BO evaluated how the OCAP, together with the FRWP and these other water projects, could adversely affect the Delta smelt, a species listed as threatened under ESA, under various projected future conditions, including increased pumping from the Delta pumps. The BO concluded that, with certain "reasonable and prudent measures" to mitigate adverse impacts, the OCAP and the water projects would not jeopardize the continued existence of the Delta smelt or adversely modify or destroy its critical habitat. The federal court found, however, that the "no jeopardy" finding in the 2005 BO was arbitrary, capricious, and contrary to law (see page 119 of the Order).

The implication of this federal order is that the OCAP and the operation of its constituent parts, including the FRWP, are left without a valid BO and, thus, are not compliant with the ESA with respect to the Delta smelt. Importantly, the actual construction of the FRWP is not affected by this federal order, as the OCAP Section 7 consultation and 2005 BO expressly excluded examination of the impacts of the construction associated with the FRWP (see page 113 of the Order). The FRWP was issued a separate BO for its construction and facilities footprint, and the facility is scheduled to be completed and operational by 2010. On December, a final written order by Judge Wanger was issued that puts in place a decision he initially made on August 31 regarding remedies and will curtail Delta pumping to protect the threatened Delta smelt. The Order will primarily affect export pumping between January and June, when juvenile Delta smelt are at greatest risk of entrainment in pumps. The actual impact on water supply will depend on a number of factors including the locations where adult smelt spawn and offspring hatch, levels of precipitation for the year, and water temperatures affecting how quickly the fish migrate.

Despite this court order and the need for USFWS to undertake a new Section 7 consultation for the OCAP (and the FRWP), SCWA's existing CVP supplies should continue to be reliable sources of water for customers within Zone 40. As described above, SCWA Zone 40 currently has the right to use, but is not yet using, 30,000 afy of SMUD water. SCWA also has a right to use, and is using some of, the 15,000 afy of "Fazio" water, which is currently diverted at a City of Sacramento diversion and wheeled through the City of Sacramento's piping system into the unincorporated areas of Sacramento County. Despite the inclusion of the FRWP in the OCAP Section 7 consultation, these CVP supplies are not expected to be adversely affected by Judge Wanger's decision. The focus of Judge Wanger's decision is on the OCAP itself, and in particular on federal and state pumps in the Delta, which have directly killed Delta smelt. SCWA's CVP supplies are small components of the overall subject of the Section 7 consultations, and involve relatively modest amounts of water in the context of the overall CVP. It is the supplies south of the Delta that have been, and will continue to be, adversely affected by this decision; the relatively small diversions north of the Delta are not thought to be problematic for Delta smelt.

Furthermore, it is new diversions of CVP water that may be adversely affected by Judge Wanger's decision, whereas SCWA's CVP water at issue—a total of 45,000 afy—has been the subject of past CVP contracts, and thus would not represent water being diverted for consumptive uses for the first time. Since 1999, SCWA has been a signatory to a contract with Reclamation for the "Fazio" water, and is the assignee of SMUD with respect to the SMUD CVP contracts. Each of these contracts remains in effect until it expires, which will be in 2010 for the two SMUD CVP contracts assigned to SCWA and 2024 for the Fazio contracts.

Because the CVP water for SCWA Zone 40 is planned to be diverted at the FRWP, which is subject to Judge Wanger's order, a new BO will need to be issued by USFWS for SCWA to enter into new long-term (40-year) contracts with Reclamation for these supplies. In the meantime, however, the FRWP should be able to operate even under a reasonable worst-case scenario. Even in the unlikely event that USFWS does not prepare a new BO for OCAP/FRWP before the expiration of the SMUD CVP contracts, it is extremely unlikely that Reclamation would disallow diversions of SCWA's CVP water at the FRWP. Based on past practices and provisions of federal law related to Reclamation, Reclamation may enter into short-term (up to 10 years) contracts with SCWA for these supplies until the long-term contracts can be renewed. Many municipalities in California rely in whole or in part on CVP contract water; and, when the time for long-term renewals is imminent but, for various reasons, long-term commitments cannot be made, Reclamation enters into short-term contract extensions for such supplies until the long-term contracts can be renewed. Such short-term contracts avoid unacceptable scenarios in which the primary water supplies to existing developed areas are cut off. In other words, the federal government realizes that, having agreed to supply water for municipal uses, it cannot very well refuse to do so in the future, as the homes and businesses supplied with federal water have relied in good faith on those supplies. The City and SCWA expect that Reclamation will take the same approach with respect to the Fazio and SMUD CVP contracts.

SCWA also anticipates that by the time the FRWP is operational (approximately 2011), USFWS and Reclamation will have completed the necessary steps, including obtaining a new BO for OCAP/FRWP, to allow SCWA to divert all of its current CVP contract supplies and to enter into long-term contract renewals when such renewals are needed. Although Judge Wanger has required a considerable amount of work to fashion a new BO, USFWS still has 3 years or more to accomplish that task. Past experience indicates that this is a sufficient amount of time. USFWS, moreover, has strong incentives to complete its task in a timely fashion, as south-of-Delta water users will suffer as long as current pumping restrictions remain in place.

Regardless of the remedy ordered in the above-described federal litigation, and despite the theoretical possibility that the FRWP supplies might be affected by protracted problems with the Delta smelt, SCWA should nevertheless be able to provide the Rio del Oro project with a separate, reliable long-term supply of surface water—GET-Remediated Water. Because the federal order implicates only diversions of CVP water, it will not affect the construction of the FRWP. Diversion and distribution of the GET- Remediated Water (up to 15,500 afy) by the FRWP for the project would be unaffected even under an extremely unlikely scenario in which diversion of CVP water is held up by Delta smelt problems. Aerojet has rights under its contracts with SCWA to use GET-Remediated Water, which is sufficient to serve all of the project under a scenario in which CVP supplies are temporarily reduced in magnitude. This GET-Remediated Water is not associated with Reclamation's CVP system, and thus is not affected by the federal court litigation mentioned above. Importantly, the water at issue already exists, and is in fact already being discharged to the American River, from which it flows downstream, without being diverted, all the way to the Pacific Ocean. The only details to be worked out have to do with infrastructure, not the availability of the water for diversion and eventual delivery to the project site. This water is therefore "certain" or "likely" within the meaning of the *Vineyard Area Citizens* ruling. Because the possibility of any problems with diversion of the CVP supplies at the FRWP is remote, the FRWP's CVP supplies are reasonably likely within the meaning of the *Vineyard Area Citizens*, ruling as well.

This is not to say that the City claims to predict the future with absolute certainty, or that the CVP supplies might not be affected by future events that cannot be foreseen. Virtually all water supplies in California suffer from some uncertainty because of a combination of evolving environmental factors. One such factor is possible future species listings under the ESA and its state analogue, the California Endangered Species Act. Such listings could affect both CVP and SWP operations, as well as the timing and extent of other water diversions throughout California.

Consistent with the obligation under the California Supreme Court's *Vineyard Area Citizens* decision to address possible sources of uncertainty for anticipated water supplies, the City notes several principles of California water law that create some amount of uncertainty for virtually any post-1914 surface-water supply based on appropriative water rights, regardless of how firm the underlying appropriative water rights may be. Taken

together, these principles provide that water supplies can, in effect, be reallocated over time, from human uses to environmental uses, from relatively inefficient or wasteful human uses to more efficient and less wasteful human uses, from agricultural uses to municipal and industrial uses, and from Southern California to Northern California. Notably, some of these principles could ultimately favor the urban customers of a Northern California supplier such as SCWA.

First, the California Constitution and the California Water Code prohibit wasteful or unreasonable use of water (see Article X, Section 2 of the California Constitution and Section 100 of the Water Code). Article X, Section 2 of the California Constitution states: "[T]he general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use … of water be prevented …" Case law has interpreted this provision as follows: "What may be a reasonable beneficial use, where water is present in excess of needs, would not be a reasonable beneficial use in an area of great scarcity and great need. What is a beneficial use at one time may, because of changed conditions, become a waste of water at a later time" (*Tulare Irrigation Dist. v. Lindsay-Strathmore Irrigation Dist.* [1935] 3 Cal.2d 489, 547).

A second, and related, principle is that the limited availability of water for use in California means that those water resources that are available must be applied to the maximum beneficial use of which they are capable (Water Code Section 100, 23 California Code of Regulations Sections 659–672). As with the constitutional provisions discussed immediately above, the statutes and regulations embodying this latter principle recognize that societal notions of efficiency and beneficial use evolve over time, as the state's increasing population requires all water users to use their water supplies more wisely.

Third, there are priorities related to the watershed of origin and county of origin (Water Code Sections 1215.6 and 1216). These priorities were put in place primarily to assure Northern California and rural interests that the CVP and SWP, by sending water southward from the Delta, would not foreclose their eventual use of water as their demands for such water increased over time. The legal basis for the watershed-of-origin and county-of-origin priorities derives from specific statutes or from conditions and reservations attached to appropriative rights issued by the SWRCB. For example, in 1927, pursuant to statute, the State of California sought and obtained permits that reserved large amounts of water from watersheds such as the American River watershed for eventual assignment to water users within such watersheds.

Fourth, provisions of the California Water Code provide that in times of water shortage, municipal and industrial water users should have priority over agricultural users (Water Code Section 106 et seq.). Although there is little case law on the subject, Water Code Section 106.5 is thought to express the policy that municipalities are exempt from the due diligence requirement generally applicable to perfecting an appropriative right. Coupled with the interim appropriation permits issued under Sections 1203 and 1462 of the Water Code, it is argued that the exemption strikes a balance between the needs of municipalities to secure a reliable water supply and the constitutionally mandated requirement that water be placed for beneficial use to the maximum extent feasible (California Constitution Article X, Section 2). Another policy consideration at work here is the pragmatic notion that, while agricultural lands can be temporarily fallowed during drought conditions, houses and businesses cannot be similarly deprived of the minimum amounts of water needed for public health and safety purposes related to domestic water usage.

A final legal principle with the potential to require periodic adjustments of water allocations between human and environmental purposes is the public-trust doctrine, which has historically been defined in relationship to the federal and state governments' sovereign ownership of navigable waters, tidelands, and submerged lands of navigable waters. In the early 1980s, the California Supreme Court adopted an expanded interpretation of trust uses. The court held that state sovereign ownership was not limited to the traditional triad (commerce, navigation, and fishing), but is rather an evolving legal doctrine designed to accommodate the public's needs as they change over time; as a result, the SWRCB, in administering post-1914 appropriative water rights, must now account for environmental considerations (see *National Audubon Society v. Superior Court* [1983] 33 Cal.3d 419, 434–445).

Recycled-Water Component

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. “Recycled water” refers to wastewater treated to a tertiary level—filtration and disinfection (Title 22, unrestricted use)—and is used for nonpotable uses such as landscape irrigation at parks, schools, and rights-of-way.

North Service Area

The Zone 40 WSIP, prepared in April 2004 and revised in November 2006, 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; and it also 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. The project site is located in the northern portion of Zone 40 identified in the Zone 40 WSIP as the North Service Area.

Water would be conveyed from the Vineyard Surface WTP to the North Service Area via the NSAPP. The preferred alignment would begin at the Vineyard Surface WTP and continue east along Florin Road. At the intersection of Florin Road and Eagles Nest Road, the pipeline would head north along Eagles Nest Road, which transitions into Zinfandel Road at the intersection of Douglas Road. The pipeline continues north along Zinfandel Road to a storage tank and pump station just north of Douglas Road and adjacent to the east side of the Folsom South Canal. In addition to providing water supplies to the project (including the Cal-Am portion where wholesale Zone 40 water supplies would be delivered), the NSAPP would also serve the Mather, Sunrise Corridor, Sunrise Douglas, and Westborough areas.

A proposed North Service Area pipeline alignment was identified in the 2005 Zone 40 WSMP EIR, and the environmental impacts of the construction of the pipeline were analyzed at a programmatic level in the Zone 40 WSMP. The NSAPP has not undergone project-level CEQA review, but SCWA expects that an EIR for the NSAPP will be prepared in 2008. The date that this pipeline would be in service is currently unknown, but is estimated at 2014.

Golden State Water Company

Permanent long-term water supplies cannot be delivered to the Rio del Oro project site until the water supplies and conveyance facilities identified in the Zone 40 WSMP (i.e., the Vineyard Surface WTP, the NSAPP, and the FRWP) have been constructed and are online. Pending completion of these facilities, the initial water for the project would be supplied to SCWA by GSWC (formerly known as Southern California Water Company), a privately owned retail purveyor regulated by the California Public Utilities Commission. The following discussion provides an overview of GSWC’s existing and projected demands and water supply sources, as well as the reliability of supplies to meet projected demands within GSWC’s service area.

GSWC generally serves the northeastern portion of Rancho Cordova. Its service area is generally bounded by Sunrise Boulevard and Hazel Avenue to the east, Mather Air Force Base to the south, Mather Field Road to the west, and the American River to the north. GSWC owns and operates the Cordova System, which includes the Coloma WTP and Pyrites WTP, six water storage tanks, and a conveyance system. GSWC relies on both surface water and groundwater to meet water demands and is projecting buildout within its service area by 2020.

Existing and Projected GSWC Water Demands

Projections of the existing and projected future water demands within GSWC’s service area were calculated for the years 2005–2030 in 5-year increments. Future water demands were estimated based on population projections prepared by the Sacramento Area Council of Governments. Similarly, employment growth projections were used

to determine growth for commercial, industrial, landscape, agricultural, and other land uses. Billing data for metered water connections from 1999–2004 were analyzed to obtain unit water-use factors (i.e., the average water use per land use) for various land use categories within GSWC's service area.

To provide an accurate projection of total water demand, other water uses (e.g., sales) and any water lost during conveyance (e.g., evaporation, leaks) have been incorporated in the total projections of water demand. "Lost water" is defined as the difference between annual production and supply and annual sales. Included in the lost water are system losses (from leaks, reservoir overflows, or inaccurate meters) and water used in operations (e.g., system flushing). Because the Cordova System is not completely metered, the percentage of unaccounted-for water for the metered accounts was used for both metered and unmetered areas. From 1999 through 2004, unaccounted-for water averaged 3.25% of the total production for the metered connections (Golden State Water Company 2005). Table 3.5-5 summarizes the past, current, and projected water sales; water system losses; and total water demand through the year 2030.

Table 3.5-5
Past, Current, and Projected Water Demands for GSWC's Cordova System

Year	Water Sales (afy)	Water System Losses (afy)	Total Water Demand (afy)
2000	15,880	533	16,413
2005	17,528	588	18,116
2010	18,885	633	19,518
2015	19,833	665	20,499
2020	20,139	675	20,814
2025	20,153	676	20,829
2030	20,153	676	20,829

Notes: afy = acre-feet per year; GSWC = Golden State Water Company
Source: City of Rancho Cordova 2006b

GSWC's Water-Supply Sources

GSWC's water supply for the Cordova System consists of surface water from the American River, groundwater extracted from the Central Basin, Aerojet replacement water via the Folsom South Canal, and other future Aerojet replacement water. Table 3.5-6 summarizes current and future water supplies available to GSWC for the Cordova System, as identified in GSWC's 2005 UWMP, which would meet the projected water demands in normal water years. Surface water from the American River, the SMUD water transfer, and Aerojet replacement water diverted through the Folsom South Canal accounts for approximately 50% of GSWC's water supplies; the remainder is provided by groundwater pumping and Aerojet replacement water.

GSWC's Surface-Water Supplies

American River Water Supplies

GSWC possesses a pre-1914 appropriative right to divert up to 10,000 afy from the American River via the Folsom South Canal at a maximum withdrawal rate of 13 mgd. Appropriative surface-water rights initiated before 1914 are not subject to the Water Commission Act and successor laws relating to water right permitting requirements, and thus do not require a permit from the SWRCB. In 1994, GSWC entered into an "Agreement for Reallocation of Water under Co-Tenancy Agreement" with the City of Folsom to indefinitely lease 5,000 afy of its water rights to the city. GSWC diverts the remaining 5,000 afy of water from the Folsom South Canal for use within the Cordova System. During the last 20 years, GSWC has used as much as 4,784 afy of this entitlement.

Table 3.5-6
Sources of Current and Future Water Supplies for GSWC's Cordova System (afy)

Source	Year					
	2005	2010	2015	2020	2025	2030
Surface Water from the American River[1]	5,000	5,000	5,000	5,000	5,000	5,000
SMUD Water Transfer[2]	5,000	0	0	0	0	0
Aerojet Replacement Water via the Folsom South Canal[3]	0	5,000	5,000	5,000	5,000	5,000
GSWC Groundwater[4]	13,250	7,450	4,500	4,500	4,500	4,500
Other Aerojet Replacement Water [5]	0	10,200	10,200	10,200	10,200	10,200
Total Supplies	**23,250**	**27,650**	**24,700**	**24,700**	**24,700**	**24,700**
Total Demand	16,413	18,116	19,518	20,499	20,829	20,829
Difference (Supply minus Demand)	**+6,837**	**+9,534**	**+5,182**	**+4,201**	**+3,871**	**+3,871**

Notes:
afy = acre-feet per year; GSWC = Golden State Water Company; SMUD = Sacramento Municipal Utility District

[1] GSWC American River rights.

[2] The agreement between GSWC and SMUD expired on July 29, 2007. GSWC and SMUD are currently working with the U.S. Bureau of Reclamation to extend the water agreement for an additional 5 years. GSWC plans to use only 5,000 afy of this entitlement because of limited surface-water treatment capacity and its desire to maintain its groundwater rights through the Aerojet replacement water operations. It should be noted that at this time, GSWC has adequate water supplies without the SMUD water, which would not necessarily be required for base supply.

[3] Aerojet's and SCWA's agreement with GSWC requires delivery of 5,000 afy of replacement water supplies via discharge to the American River system and conveyed within the Folsom South Canal to existing GSWC intake facilities. The RWSP DEIR describes the alternatives for delivery of water using GET Remediated Water.

[4] GSWC's maximum annual extractions before 2005 were equal to 13,250 afy. GSWC has projected that by 2015, all but two of GSWC's wells would experience contamination levels that may cause their inactivation. The two remaining wells are not expected to be affected by contamination until at least 2032 and have a combined production capacity of 4,500 afy.

[5] To the extent replacement water is required and not available through the SCWA system (e.g., wellhead treatment), GET Remediated Water could be made available, up to an additional 10,200 afy of remediated groundwater to GSWC via the Freeport Regional Water Project, which is anticipated to be operational by late 2009 or early 2010, and the Vineyard Surface Water Treatment Plant, which is anticipated to be completed by 2011.

Sources: Golden State Water Company 2005, City of Rancho Cordova 2006b

SMUD Water Transfer

GSWC also entered into a temporary water transfer agreement with SMUD to allow GSWC to divert up to an additional 10,000 afy from the Folsom South Canal under SMUD's CVP contract entitlement. SMUD has a water service contract with Reclamation (Contract No. 12-06-200-5198A) for delivery of as much as 30,000 afy of surface water to SCWA for municipal and industrial uses.

The agreement between GSWC and SMUD expired on July 29, 2007. GSWC and SMUD are currently working with Reclamation to extend the water agreement for an additional 5 years. GSWC plans to use only 5,000 afy of this entitlement because of limited surface-water treatment capacity and its desire to maintain its groundwater rights through the Aerojet replacement-water operations. It should be noted that at this time, the SMUD water, while currently used as part of the base supply because of the provisions in the MSA between Aerojet and GSWC, is in excess of current needs and can be replaced by groundwater, and thus would not necessarily be required for base supply (Gisler, pers. comm., 2007).

GSWC's Groundwater Supplies

GSWC pumps groundwater for the Cordova System from 15 production wells located in the Central Basin. The Cordova System has a total maximum capacity of 31,500 afy in normal years. Since 1995, GSWC has extracted a long-term average of 11,753 afy of groundwater from the Central Basin. GSWC's highest historical production occurred in 2001 when 13,257 afy was pumped. Portions of the basin are severely impaired by groundwater contamination, caused primarily by past operations at Aerojet, which is located immediately east of the Cordova System. This contamination has caused GSWC to suspend operation of several groundwater wells. However, decommissioning the wells has not lowered GSWC's overall system production capacity because GSWC has expanded its surface-water treatment and has increased extraction of noncontaminated groundwater.

It has been predicted that by 2015, all but two of GSWC's wells will experience contamination levels that may cause their inactivation. The two remaining wells are not expected to be affected by contamination until at least 2032. These two wells have a combined production capacity of 4,500 afy (Table 3.5-7). Because of existing groundwater contamination, and the anticipation that these wells would be removed from service by 2032, groundwater pumped by GSWC is considered to have a moderate reliability of being delivered.

Table 3.5-7
Projected Groundwater Pumping Volumes in GSWC's Cordova System (afy)

Water Source	Year					
	2005	2010	2015	2020	2025	2030
Central Basin	8,116	7,450	4,500	4,500	4,500	4,500

Notes: afy = acre-feet per year; GSWC = Golden State Water Company
Source: Golden State Water Company 2005

Table 3.5-7 presents the projected groundwater pumping volumes by GSWC's Cordova System. As a result of changes in groundwater quality, the groundwater supply for GSWC's Cordova System is potentially expected to decrease between 2005 and 2015.

Aerojet Replacement Water

Aerojet and GSWC entered in a MSA under which both parties agreed to Aerojet's obligations to provide replacement water, as needed, for supply lost as a result of groundwater contamination from past activities by Aerojet. The MSA contains a contingency plan under which Aerojet and GSWC have reached agreement on certain actions, and which provides for a mechanism to resolve disputes if changes in the contingency plan are required. GSWC entered into a waster supply agreement with Sacramento County and SCWA concurrent with the MSA. The water supply agreement assists with the implementation of the MSA, and the Aerojet-County Agreement by establishing the terms and conditions under which SCWA would be responsible for providing replacement groundwater to GSWC. The agreements provide a negotiated solution to sharing the groundwater resources in this portion of Sacramento County. The water supply agreement requires that the County approve a replacement water supply project (as such the County has circulated the RWSP DEIR). Should the RWSP be approved, the water supply agreement requires SCWA to make replacement water available to GSWC.

Therefore, SCWA's would deliver 5,000 afy of replacement water supplies from Aerojet GET facilities via discharge to the American River system and conveyance within the Folsom South Canal to GSWC's existing intake facilities. GSWC's need for additional replacement water (i.e., water amounts greater than 5,000 afy) would be determined annually in a meet-and-confer session with SCWA. Based on GSWC's current UWMP, GSWC has conservatively projected that it may require up to 6,329 afy of replacement water in addition to the 5,000 afy from the Folsom South Canal (for a total of 11,329 afy in replacement water supplies). Up to an additional 10,200 afy of remediated groundwater could be delivered to GSWC via the FRWP, which is

anticipated to be operational in late 2009 or early 2010, and the Vineyard Surface WTP, which is anticipated to be completed in 2011. Regardless of demonstrated need, GSWC's total maximum allocation of replacement water supply in any year could not exceed 15,200 af (i.e., 5,000 afy delivered to GSWC at the Folsom South Canal plus a maximum of 10,200 afy delivered through FRWP facilities).

The County would be responsible for construction and operation of facilities necessary to deliver the remaining replacement water to GSWC at the delivery points identified in the agreement. The County's obligation to provide replacement water to GSWC is also limited to an appropriate share of the total amount of remediated water conveyed by Aerojet to the County. As discussed above, the County's obligation to provide GSWC with replacement water depends on the approval of a replacement water approval project.

Reasonable Likelihood of GSWC's Water Supplies

The certainty of GSWC's water supplies for the Cordova System depends on the reliability of the surface-water rights, groundwater production, and replacement water supplied via the MSA between GSWC, Aerojet, and SCWA.

The American River is considered a reliable source of water supply because appropriative rights are granted by priority based on the year of initiation and GSWC possesses an early priority date (pre-1914). With respect to groundwater supply, GSWC has projected that by 2015, all but two of GSWC's wells will experience contamination levels that may cause their inactivation. The two remaining wells are projected by GSWC not to be affected by contamination until at least 2032 and have a combined production capacity of 4,500 afy; therefore, this groundwater supply is considered moderately reliable.

However, the MSA establishes a contingency plan for actions to be taken, including specific actions such as blending and wellhead treatment, to manage short-term well impacts, and GSWC has advised the EPA that such actions are adequate. In addition, the current WSA provides additional assurance that necessary actions to meet GSWC's long-term projected water supply demands through 2030 will be met, should additional wells be shut down.

GSWC's Water-Supply Conveyance and Treatment

The GSWC Cordova System's distribution facilities have been designed with several interconnections to neighboring water purveyors for emergency purposes. GSWC maintains three 6-inch interconnections with Cal-Am's distribution system on the west side of the Cordova System and a 12-inch interconnection with the City of Folsom's distribution system at the eastern edge of the Cordova System. In addition, the Cordova System has six water storage reservoirs with a total capacity of 14.5 million gallons.

American River water is withdrawn from the Folsom South Canal, which extends through the Cordova System's service area, and is treated at the Coloma WTP and the Pyrites WTP. The maximum reliable daily treatment capacities of the Coloma WTP and the Pyrites WTP are approximately 7,140 gallons per minute (gpm) and 3,150 gpm, respectively. Collectively, the Coloma WTP and the Pyrites WTP provide sufficient capacity for treatment of more than 17,000 afy (10,290 gpm) of surface water diverted from the Folsom South Canal.

No GSWC water conveyance facilities are located on or adjacent to the Rio del Oro project site. A 5.0-mgd water storage tank and 16-inch conveyance pipeline are located southwest of the project site, west of Sunrise Boulevard.

CITY OF RANCHO CORDOVA

City of Rancho Cordova Water Supply Evaluation

The City conducted a water supply evaluation for the City General Plan (City of Rancho Cordova 2006b). The evaluation included information about all of the following:

- the regulatory and planning environment with regard to the regional water supply;
- water purveyors that currently provide water service within Rancho Cordova;
- water demands associated with buildout of the City's corporate limits, including the demand from the Rio del Oro project (which is estimated to build out by 2030) and larger planning area (which is assumed to build out by 2050);
- existing available water supplies that could meet a portion of the City's projected buildout water demands (e.g., buildout of the planning area);
- the area within the City's corporate limits for which long-term water supplies have been secured (e.g., approved and planned projects, including the Rio Del Oro project, and existing development);
- potential future sources of water to meet remaining buildout water demands; and
- a brief summary of the potential environmental impacts associated with delivering future water supplies to Rancho Cordova.

The City's water supply evaluation concluded that water supplies are currently available to meet the water demands associated with buildout of the City's corporate limits, including the demand from the Rio del Oro project (which is estimated to build out by 2030), but to meet water demands from land uses in the expanded 2050 planning area. The City would be required to secure additional water supplies to meet its projected 2050 demands. Increased water demands could result in increased groundwater pumping, an increased demand for new surface-water supplies, an increased demand for recycling and water conservation programs, and/or an increased demand for local water purveyors to expand their service areas. Potential projects to secure additional supplies could include the negotiation of new water right transfers; construction of new diversion structures; expansion or construction of new water treatment plants; and construction of new potable-water and recycled-water distribution facilities. (City of Rancho Cordova 2006b.)

City of Rancho Cordova's Recycled-Water Supplies

SRCSD is responsible for the collection, treatment, disposal, and reuse (of recycled water) of up to 5 mgd of wastewater throughout most of the urbanized areas of Sacramento County, including the majority of the SWCA retail service areas. SRCSD implemented a water recycling program on the Sacramento Regional Water Treatment Plant (SRWTP) site, which began service to communities in southern Sacramento County in 2003.

Through an agreement between SCWA and SRCSD, SCWA has successfully implemented a water recycling program. Approximately 4,400 afy of recycled water is currently provided to SCWA by SRCSD and used within the Zone 40 service area. This program provides recycled water for SRCSD's on-site uses and for large commercial irrigation customers within Zone 40 (e.g., commercial uses, industrial uses, right-of-way landscaping, schools, and parks). Because of its high reliability and its independence of hydrologic conditions in any given year, recycled water is a desirable source of water for a community's outdoor irrigation demands—parks, schools, street medians, landscaping of residential front and back yards, and public open space. It is also desirable for industrial uses such as cooling water. In addition, recycled water is commonly used for environmental purposes such as wetlands and habitat restoration. SRCSD is working in partnership with SCWA to serve areas in Zone 40, including 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 in five to ten years.

The City emphasizes the use of recycled water for nonpotable uses, such as landscape irrigation, wherever feasible. The City adopted a Citywide Recycled Water Distribution Ordinance (Resolution No. 11-2006) on February 6, 2006, stating that new development should install a "purple pipe" recycled-water distribution system

(City of Rancho Cordova 2006c). Because of the City's commitment to the use of recycled water, SCWA and SRCSD are investigating the feasibility of providing recycled-water service.

SCWA has indicated that the expanded use of recycled water for nonpotable purposes could reduce demands for potable water by as much as 10%–50%, depending on the level of reuse that is prescribed. Using recycled water for public areas such as medians and park strips would reduce demands for potable water by approximately 10%–15%, and using recycled water for public area and residential outdoor areas (e.g., residential landscaping) could reduce overall demands for potable water by as much as 50%. (City of Rancho Cordova 2006b.)

Expanded Use of Recycled Water

The water recycling program on the SRWTP site was designed and constructed to be readily expandable from 5 mgd to 10 mgd in accordance with SRCSD's Master Reclamation Permit (WDR #97-146). To plan for water recycling projects beyond 2010, a planned plant expansion of the water recycling facility from 5 mgd to 10 mgd could serve new areas of planned and expected growth and public open space areas. The increased use of recycled water within Zone 40 would increase the total volume of supplies available to SCWA to meet its projected demands within Zone 40.

SRCSD has prepared a *Water Recycling Opportunities Study* (SRCSD 2007) to study the feasibility of meeting its goal to increase water recycling throughout the Sacramento region on the scale of 30–40 mgd over the next 20 years. The study serves to:

- identify potential opportunities for water recycling throughout the Sacramento region and SRCSD service area;
- engage potential water-recycling partners and stakeholders;
- develop, assess, and prioritize potential water-recycling projects; and
- provide a strategy to further develop and implement the projects initially selected to move forward in achieving the stated goals of the large-scale water-recycling program.

The study also ranks potential projects based on water demand, feasibility of implementation, costs, and other factors to prioritize projects for implementation. Implementation of a large-scale Water Recycling Program would be required to undergo a comprehensive review of the program elements to satisfy CEQA requirements. The Water Recycling Opportunities Study provides technical information to support a programmatic-level EIR.

Future projects to provide recycled water to Rancho Cordova include diversion of wastewater from the Bradshaw/Folsom Interceptor System and require construction of a new wastewater treatment plant, an aboveground storage tank, a pump station, and new infrastructure to convey recycled water. (SRCSD 2007.)

Future expansion and use of recycled water within Zone 40 would increase the total volume of supplies available to SCWA to meet its projected demands within Zone 40. However, it unknown what portion of the expanded recycled water supplies would be available to Zone 40.

GLOBAL CLIMATE CHANGE AND WATER SUPPLY LINKAGES

Theories about climate change and global warming existed as early as the late 1800s. It was not until the late 1900s that understanding of Earth's atmosphere had advanced to the point where many atmospheric and climate scientists began to accept that Earth's climate is changing (IPCC 2001a, 2001b; DWR 2006).

In recent years, the scientific consensus has broadened to consider increasing concentrations of greenhouse gases, attributable to anthropogenic (human) activities, as a primary cause of global climate change. The United Nations

Intergovernmental Panel on Climate Change (IPCC) predicts that changes in Earth's climate will continue through the 21st century and that the rate of change may increase significantly in the future because of human activity (IPCC 2001b, 2007).

Today, the issue of global climate change has begun to play an increasing role in scientific and policy debates over multiple issue areas, such as land use planning, transportation planning, energy production, habitat and species conservation, use of ocean resources, and agricultural production. Of particular concern are the existing and potential future effects of global climate change on hydrologic systems and water management (e.g., domestic water supply, agricultural water supplies, flood control, and water quality). There is evidence that global climate change has already had an effect on California's hydrologic system; for example, historical data indicate a trend toward declining volumes of spring and summer runoff from the Sierra Nevada.

California water planners and managers have been among the first groups in the nation to seriously consider the implications of statewide and regional climate change (rather than global-scale changes) on the reliability and safety of their systems. Initial research and analysis on climate risks facing California water resources began in the early 1980s; by the end of the decade, state agencies such as the California Energy Commission had prepared the first assessments of state greenhouse gas emissions and possible impacts on a wide range of sectors. The *California Water Plan* (Bulletin 160) first briefly addressed climate change in 1993 (DWR 1993). More recently, DWR and the Public Interest Energy Research program of the California Energy Commission expanded and refined the analysis of climate change effects in California in the 2005 update of the *California Water Plan*, which explores a wide range of climate impacts and risks, including risks to water resources (Kiparsky and Gleick 2005, Roos 2005). The 2005 update also describes efforts that should be taken to quantitatively evaluate climate change effects for the next update of the *California Water Plan* (DWR 2005). DWR has also followed up on these issues with a technical memorandum report that specifically discusses progress on modeling climate change in the state, characterizes the effects of climate change, and incorporates climate change into planning and management of California's water resources (DWR 2006).

The following discussion briefly describes the current state of the science surrounding climate change and associated effects. It discusses projections that have application to Delta waterways and the Rio del Oro project, as well as projected future changes and the accuracy and variability of modeling results, and identifies results presumed to be too speculative for meaningful conclusive analysis.

Variability in Regional Modeling of Climate Change

Much of the available trend data and modeling and many of the projections related to climate change are on a global scale. Projecting impacts of climate change often relies on general circulation models, which develop large-scale scenarios of changing climate parameters, usually comparing scenarios with different concentrations of greenhouse gases in the atmosphere. This information is typically at too coarse a scale to make accurate regional assessments. As a result, more effort has recently been put into reducing the scale and increasing the resolution of climate models through various techniques such as "downscaling" or integrating regional models into the global models (Kiparsky and Gleick 2005, Roos 2005, DWR 2006). However, the level of uncertainty related to regional climate change is generally higher than that related to global projections because downscaling and similar activities add uncertainty.

Variability in the results of climate change modeling is based in large part on which global climate model is used, what inputs are selected for the model (e.g., increases in the world's population and emissions of greenhouse gases), and how the model is downscaled to provide region-specific data. For example, in DWR's report *Progress on Incorporating Climate Change into Management of California's Water Resources, Technical Memorandum Report* (DWR 2006), four scenarios projecting regional climate change were selected, consisting of combinations of two different global climate models and two different emissions scenarios. These four scenarios provided temperature results ranging from weak warming to relatively strong warming, and precipitation results ranging from modest reductions to weak increases (DWR 2006).

It should be remembered that results of climate change modeling, particularly for regional models, should not be considered as specific quantified predictions. There is a significant amount of uncertainty about the magnitude of climate change that will occur during this century. It is unlikely that this level of uncertainty will diminish significantly in the foreseeable future (Dettinger 2005). Therefore, effects on the environment anticipated under various climate change models should be considered as general projections of potential future conditions, with actual environmental effects likely falling within the range of results provided by a variety of model outputs.

Water-Supply Status and Trends

Several recent studies have shown that existing water-supply systems are sensitive to climate change (Wood and Palmer 1997). Potential impacts of climate change on water supply and availability could directly and indirectly affect a wide range of institutional, economic, and societal factors (Gleick 1986). Much uncertainty remains, however, with respect to the overall impact of global climate change on future water supplies. For example, models that predict drier conditions (i.e., the parallel climate model [PCM]) suggest that reservoir inflows, reservoir storage, and river flows will also decrease relative to current conditions. By comparison, models that predict wetter conditions (i.e., HadCM2) project increased reservoir inflows, reservoir storage, and river flows (Brekke et al. 2004). Both projections are equally probable based on which model is chosen for the analyses (Brekke et al. 2004). Much uncertainty also exists with respect to how climate change will affect future demand on water supply (DWR 2006). Still, changes in water supply are expected to occur, and many regional studies have shown that large changes in the reliability of water yields from reservoirs could result from only small changes in inflows (Kiparsky and Gleick 2005, Cayan et al. 2006).

Little work has been performed on the effects of climate change on specific groundwater basins or groundwater recharge characteristics (Kiparsky and Gleick 2005). Changes in rainfall and changes in the timing of the groundwater recharge season would result in changes in groundwater recharge. Warmer temperatures could increase the period when water is on the ground by reducing soil freeze. Conversely, warmer temperatures could lead to higher evaporation or shorter rainfall seasons, which could mean that soil deficits would persist for longer time periods, shortening recharge seasons. Warmer, wetter winters would increase the amount of runoff available for groundwater recharge. This additional winter runoff, however, would be occurring at a time when some basins, particularly in Northern California, are being recharged at their maximum capacity. Reductions in spring runoff and higher evapotranspiration, on the other hand, could reduce the amount of water available for recharge. However, the specific extent to which various meteorological conditions will change and the impact of that change on groundwater are both unknown. A reduced snowpack, coupled with increased rainfall, could require a change in the operating procedures for California's existing dams and conveyance facilities (Kiparsky and Gleick 2005).

Water Supply Projections

DWR's 2006 report focused on climate change impacts on CVP and SWP operations and on the Delta. The results of that analysis suggest several impacts of climate change on overall CVP and SWP operations and deliveries. In three of the four climate scenarios simulated, CVP reservoirs north of the Delta experienced shortages during droughts. DWR (2006) recommends that future studies examine operational changes that could avoid these shortages. At present, DWR concludes, it is not clear whether such operational changes would be insignificant or substantial. Changes in annual average CVP deliveries south of the Delta ranged from increases of about 2.5% for the wetter scenario to decreases of up to 10% for drier scenarios. Future studies will have to address how shortages north of the Delta could affect CVP deliveries south of the Delta. Carryover storage (i.e., water from one year stored into the next year) for the CVP was negatively affected in the drier scenarios and beneficially affected (slightly increased) in the wetter scenario.

Tanaka et al. (2006) explored the ability of California's water supply system to adapt to long-term climatic and demographic changes using the California Value Integrated Network (CALVIN), a statewide economic-engineering optimization model of water supply management. The results show that agricultural water users in the

Central Valley are the most sensitive to climate change, particularly under the driest and warmest scenario (i.e., PCM 2100), predicting a 37% reduction of agricultural water deliveries in the Central Valley and a rise in Central Valley water scarcity costs by $1.7 billion. Although the results of the study are only preliminary, they suggest that California's water-supply system appears "physically capable of adapting to significant changes in climate and population, albeit at a significant cost." Such an adaptation would entail changes in California's groundwater storage capacity, water transfers, and adoption of new technology.

VanRheenen et al. (2004) studied the potential effects of climate change on the hydrology and water resources of the Sacramento–San Joaquin River basin using five PCM scenarios. The study concluded that most mitigation alternatives examined satisfied only 87% to 96% of environmental targets in the Sacramento system, and less than 80% in the San Joaquin system. Therefore, modifications and improvements to system infrastructure could be necessary to accommodate the volumetric and temporal shifts in flows predicted to occur with future climates in the Sacramento–San Joaquin River basin.

Zhu, Jenkins, and Lund (2005) studied impacts of a warming climate on water availability. Impacts were derived from modeled climate and warming streamflow estimates for six index California basins and on distributed statewide changes in temperatures and precipitation for 12 climate scenarios. The index basins provide broad information for spatial estimates of the overall response of California's water supply and the potential range of impacts. The results identify a statewide trend of increased winter and spring runoff and decreased summer runoff. Approximate changes in water availability are estimated for each scenario, though without operations modeling. Even most scenarios with increased precipitation result in a decrease in available water, because of the inability of current storage systems to catch increased winter streamflow to offset reduced summer runoff.

Medellin et al. (2006) used the CALVIN model under a high-emissions "worst-case" scenario called a dry-warming scenario. The study found that climate change would reduce water deliveries by 17% in the year 2050. The reduction in deliveries was not equally distributed between urban and agricultural areas, however; agricultural areas would see their water deliveries drop by 24% while urban areas would see a reduction of only 1%. There was also a geographic difference: urban scarcity was almost absent outside of Southern California.

In 2003, the California Energy Commission's Public Interest Energy Research program established the California Climate Change Center to conduct climate-change research relevant to the state. Executive Order S-3-05 called for the California Environmental Protection Agency to prepare biennial science reports on the potential impact of continued climate change on certain sectors of California's economy; the agency entrusted the Public Interest Energy Research program and its California Climate Change Center to lead this effort. The analysis of climate change contained in the resulting first biennial science report concluded that major changes in water management and allocation systems could be required to adapt to the change. As less winter precipitation falls as snow, and more as rain, water managers would have to balance the need to construct reservoirs for water supply with the need to maintain reservoir storage for winter flood control. Additional storage could be developed, but at high environmental and economic costs.

Lund et al. (2003) examined the effects of a range of estimates of climate warming on the long-term performance and management of California's water system. The study estimated changes in California's water availability, including effects of forecasted changes in year-2100 urban and agricultural water demands, using a modified version of the CALVIN model. The main conclusions are summarized as follows:

- Methodologically, it is useful and realistic to include a wide range of hydrologic effects, changes in population and water demands, and changes in system operations in studies of climate change.

- A broad range of climate-warming scenarios show significant increase in wet-season flows and significant decreases in spring snowmelt. The magnitude of effects of climate change on water supplies is comparable to increases in water demand from population growth in the 21st century.

- California's water system would be able to adapt to the severe population growth and climate change modeled. This adaptation would be costly, but it would not threaten the state's fundamental prosperity, although it could have major impacts on the agricultural sector. The water management costs represent only a small proportion of California's current economy.

- Under the driest climate-warming scenarios, agricultural users in the Central Valley could be quite vulnerable to climate change. Wetter hydrologies could increase water availability for these users. The agricultural community would not be compensated for much of its loss under the dry scenario. The balance of effects of climate change on agricultural yield and water use is unclear. Although higher temperatures could increase evapotranspiration, longer growing seasons and higher carbon dioxide concentrations could increase crop yield.

- In Southern California, population growth is expected to be more problematic than climate change. Population growth, conveyance limits on imports, and the high economic value of water in Southern California could lead to high levels of wastewater reuse and substantial use of desalinated seawater along the coast.

- Under some wet-warming-climate scenarios, flooding problems could be substantial. In certain cases, major expansions of downstream floodways and alterations in floodplain land use could become desirable.

- California's water system could economically adapt to all the climate-warming scenarios examined in the study. California can adapt to population growth and global climate change by using new technologies for efficiency of water supply, treatment, and water use; implementing water transfers and conjunctive use; coordinating operation of reservoirs; and improving flow forecasting. The cooperation of the federal, state, regional, and local governments can also be helpful. Even if these strategies are implemented, however, the costs of water management are expected to be high and there is likely to be less "slack" in the system than under current operations and expectations.

Summary of Global Climate Change on Water Supply

As described by the projections above, overall, climate change is expected to have a greater effect in Southern California and on agricultural users than on urban users in the Central Valley, which includes both the Sacramento and San Joaquin Valleys. For example, for year-2020 conditions, where optimization is allowed (i.e., using the CALVIN model), scarcity is essentially zero in the Sacramento Valley for both urban and agricultural users, and generally zero for urban users in the San Joaquin and Tulare basins. Rather, most water scarcity will be felt by agricultural users in Southern California, although urban users in Southern California, especially those in the Coachella Valley, will also experience some scarcity. By the year 2050, urban water scarcity will remain almost entirely absent north of the Tehachapi Mountains, although agricultural water scarcity in the Sacramento Valley could increase to about 2% (Medellin et al. 2006; see also Tanaka et al. 2006 and Lund et al. 2003 for further discussion of impacts of global climate change on agricultural uses).

Based on the conclusions of current literature regarding California's ability to adapt to global climate change, it is reasonably expected that, over time, the state's water system will be modified to be able to handle the projected climate changes, even under dry and/or warm climate scenarios (DWR 2006). Although coping with climate change effects on California's water supply could come at a considerable cost, based on a thorough investigation of the issue, it is reasonably expected that statewide implementation of some, if not several, of the wide variety of adaptation measures available to the state will likely enable California's water system to reliably meet future water demands. For example, traditional reservoir operations may be used, in conjunction with other adaptive actions, to offset the impacts of global warming on water supply (Medellin et al. 2006; see also Tanaka et al. 2006 and Lund et al. 2003). Other adaptive measures include better water-use efficiency practices by urban and agricultural users, conjunctive use of surface water and groundwater, desalination, and water markets and portfolios (Medellin et al. 2006; see also Lund et al. 2003 and Tanaka et al. 2006). More costly statewide

adaptation measures could include construction of new reservoirs and enhancements to the state's levee system (CEC 2003). As described by Medellin et al. 2006, with adaptation to the climate, water deliveries to urban centers are expected to decrease by only 1%, with Southern California shouldering the brunt of this decrease.

3.5.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

There are no federal plans, policies, regulations, or laws related to utilities and service systems (water supply) that are applicable to the proposed project or 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 Rio del Oro Specific Plan. These assessments, prepared by "public water systems" responsible for serving project areas (here, 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 shall 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.

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 [City]) 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.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Rancho Cordova General Plan

An updated analysis of the proposed project's and alternatives' consistency with applicable goals and policies from the *Rancho Cordova General Plan* (City General Plan) relating to utilities and service systems (water supply) are provided in Appendix N of this Recirculated DEIR/Supplemental DEIS.

3.5.3 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 certainty of selected water supplies 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. Alternate sources of water and the impacts associated with those sources are also discussed in this analysis because, in some limited instances, there is not complete certainty that selected water supplies would be available.

The significance thresholds for this analysis are also based on Appendix G of the State CEQA Guidelines. A water supply impact is considered significant if implementation of the project or alternatives under consideration would do any of the following:

- require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction 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.

Section 15126.4(a)(1)(D), of the State CEQA Guidelines states that if a mitigation measure would cause one or more significant environmental effects in addition to those that would be caused by the project, the effects of the mitigation measure must be discussed, but in less detail that the significant effects of the project.

3.5.4 ANALYSIS METHODOLOGY

Impacts of project implementation on initial and permanent 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 project site and surrounding area. In accordance with Section 15150 of the State CEQA Guidelines, the following documents are incorporated by reference in this Recirculated DEIR/ Supplemental DEIS, and relevant portions of these documents are summarized herein where their analysis has been relied on in this Recirculated DEIR/Supplemental DEIS:

- *Final Environmental Impact Report for the City of Rancho Cordova General Plan* (State Clearinghouse [SCH] #2005022137) (City of Rancho Cordova 2006a),

- *City of Rancho Cordova Water Supply Evaluation for the City of Rancho Cordova General Plan* (City of Rancho Cordova 2006b),

- *Rio del Oro Plan Area Water Supply Master Plan* (Wood Rodgers 2004, 2007a),

- *Rio del Oro Specific Plan Non-Potable Water Study* (Wood Rodgers 2007b),

- *Sacramento County Water Agency Amended Water Supply Assessment for the Rio del Oro Project* (SCWA 2006a),

- *Zone 40 Water Supply Master Plan Final Environmental Impact Report* (SCH #95082041) (SCWA 2004a),
- *Sacramento County Water Agency Groundwater Management Plan* (SCWA 2004b),
- *Sacramento County Water Agency Zone 40 Central Surface and Groundwater Treatment Plant, Pipelines and Corporation Yard Mitigated Negative Declaration* (SCH #2004092050) (SCWA 2004c),
- *Sacramento County Water Agency 2005 Zone 40 Water Supply Master Plan* (SCWA 2005a),
- *Sacramento County Water Agency 2005 Zone 41 Urban Water Management Plan* (SCWA 2005b),
- *Sacramento County Water Agency Zone 40 Water System Infrastructure Plan* (SCWA 2006b),
- *Eastern County Replacement Water Supply Project Draft Environmental Impact Report* (SCH #2004042122) (SCWA 2007a),
- *Final Environmental Impact Report for the Water Forum Proposal* (SCH #95082041) (Sacramento City-County Office of Metropolitan Water Planning 1999),
- *Golden State Water Company 2005 Urban Water Management Plan—Cordova* (Golden State Water Company 2005), and
- *Final Environmental Impact Report/Environmental Impact Statement for the Freeport Regional Water Project* (SCH #2002032132) (Freeport Regional Water Authority 2003).

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

The permanent long-term water supply for the project cannot be delivered until the conveyance facilities identified in the Zone 40 WSMP and FRWP have been constructed and are online. The EIR for the Zone 40 WSMP was certified in 2005, and the FRWP EIR/EIS was certified in March 2006. Because these facilities and their impacts have been analyzed in other EIRs by SCWA, these facilities are not evaluated in further in this Recirculated DEIR/Supplemental DEIS. However, a summary of their environmental impacts have been incorporated by reference and are summarized in this section as they relate to the project.

3.5.5 IMPACT ANALYSIS AND MITIGATION MEASURES

Effects that would occur as a result of implementation of each alternative development scenario are identified as follows: PP (Proposed Project), HD (High Density), IM (Impact Minimization), NF (No Federal Action), and NP (No Project). The impacts for each alternative are compared relative to the PP at the end of each impact conclusion (i.e., similar, greater, lesser). Thresholds used to determine the significance of impacts under each scenario are described in Section 3.5.3, "Thresholds of Significance."

Impacts related to water supply, at both the program and project level, are presented in the following order:

- Need for Initial Water Supplies for Development Phase 1A (Impacts 3.5-1 and 3.5-10)
- Need for Initial Water Supplies for the Remaining Phase 1 Development (Impacts 3.5-2 and 3.5-11)
- Need for Initial Off-Site Water Conveyance Facilities (Impacts 3.5-3 and 3.5-12)
- Temporary Curtailment of Project Development (Impacts 3.5-4 and 3.5-13)
- Increased Demand for Permanent Water Supplies (Impacts 3.5-5 and 3.5-14)
- Need for Water Conveyance Facilities to Deliver Long-Term Water Supplies (Impacts 3.5-6 and 3.5-15)
- Permanent Curtailment of Project Development (Impacts 3.5-7 and 3.5-16)
- Use of Nonpotable-Water Supplies and Infrastructure (Impacts 3.5-8 and 3.5-17)
- Effects of Global Climate Change on Surface-Water and Groundwater Supplies (Impacts 3.5-9 and 3.5-18)

PROGRAM LEVEL IMPACTS AND MITIGATION MEASURES

Impact 3.5-1: Need for Initial Water Supplies for Development Phase 1A. *Project implementation would result in a need for an initial water supply to the project site for development Phase 1A until the SCWA facilities (the Vineyard Surface WTP, the FRWP, and the NSAPP) have been constructed and are online.*

Applies to: PP, HD, IM, NF.

The permanent long-term water supply cannot be delivered to the project site until the SCWA facilities (Vineyard Surface WTP, the FRWP, and the NSAPP) have been constructed and are online; therefore, project implementation would result in the need for an initial water supply for development of Phase 1A. The project applicant(s) have discussed the availability of an initial water supply with SCWA and GSWC and have identified a potential water supply for providing initial water for development of Phase 1A to the project site. Existing GSWC water that exceeds current projected maximum-day system demand could be delivered to the project as initial water supply. GSWC has indicated that it would have an adequate water supply to serve the initial phases of development up to 600 dwelling units (Gisler, pers. comm., 2005). County Improvement Standards (2006) assume 1 gpm per dwelling unit; therefore, 600 dwelling units would be equal to a maximum water supply of 600 gpm (968 afy). These water supplies would be provided until long-term water facilities have been constructed by SCWA (Gisler, pers. comm., 2005).

The project applicant(s) have submitted to the City a tentative map for Phase 1A, and it is expected that Phase 1A would require water beginning in spring/summer 2009. Phase 1A water-supply demands are based on the proposed land uses in the tentative map and were projected by applying the water-demand factor in the Zone 40 WSMP to each proposed land use. The water demands associated with Phase 1A of the High Density, Impact Minimization, and No Federal Action Alternatives are similar to or less than those of the Proposed Project Alternative because the land uses proposed under those alternatives would involve an amount of development similar to or less than that of the Proposed Project Alternative. Table 3.5-8 below summarizes the average-day, maximum-day, and peak-hour water demands for Phase 1A.

Table 3.5-8
Water Demands for Rio del Oro Phase 1A

Land Use	Dwelling Units[1]	Acres	Unit Water Demand Factor[2] (af/ac/yr)	Average Annual Water Demand (afy)	Maximum Annual Water Demand (afy)	Average-Day Demand (gpm)	Maximum-Day Demand (gpm)	Peak-Hour Demand (gpm)
Single-Family	485	97	2.89	280.3	560.6	173.8	347.6	695.2
Multifamily—Low Density	136	17	3.70	62.9	125.8	39.0	78.0	156.0
Multifamily—High Density	240	12	4.12	49.4	98.8	30.7	61.3	122.6
Public Recreation	–	6	3.46	20.8	41.6	12.9	25.7	51.5
Right-of-Way	–	30.4	0.21	6.4	12.8	3.9	7.8	15.6
Total	**861**	**162.4**	–	**419.8**	**839.6**	**260.3**	**520.6**	**1,041.2**
			7.5% system loss	31.5	63	19.5	39	78
			Total Demand	**451.3**	**902.6**	**279.8**	**559.6**	**1,119.2**

Notes: af/ac/yr = acre-feet per acre per year; afy = acre-feet per year; gpm = gallons per minute

[1] Total numbers of dwelling units based on 5 dwelling units per acre (du/ac) for single-family residential, 8 du/ac for medium-density residential, and 20 du/ac for high-density residential. Actual dwelling units may vary.

[2] The unit water demand factors provided in this table are consistent with the unit water demand factors used in the *Zone 40 Water Supply Master Plan* and the 2000 Water Forum Agreement.

Source: Wood Rodgers 2007a

Table 3.5-8 shows that the total projected maximum annual water demand is 902.6 afy for the Proposed Project Alternative. Table 3.5-9 compares water supply available from GSWC (968 afy) to Phase 1A water-supply demands (902.6 afy) to determine whether a reliable water supply would be available to serve Phase 1A. As shown in Table 3.5-9, GSWC has adequate water supplies to meet projected water demands under Phase 1A of the Proposed Project Alternative. Because the water demands associated with Phase 1A of the High Density, Impact Minimization, and No Federal Action Alternatives are similar to or less than those of the Proposed Project Alternative, this analysis assumes that adequate water supplies would be available to meet projected water demands for Phase 1A associated with theses alternatives. As noted above, this water supply would be provided until long-term water facilities have been constructed by SCWA (Vineyard Surface WTP, the FRWP, and the NSAPP). The remaining initial development of Phase 1 would require other sources of water supply (see Impact 3.5-2 below).

Table 3.5-9
GSWC's Available Water Supply Compared to Water Demand Associated with the Phase 1A Tentative Map

	Average Annual Water Demand (afy)	Maximum Annual Water Demand (afy)	Average-Day Demand (gpm)	Maximum-Day Demand (gpm)
GSWC Available Water Supply	484	968	300	600
Phase 1A Tentative Map Water Demand	451.3	902.6	279.8	559.6
Surplus	**32.7**	**47.4**	**20.2**	**40.4**

Notes: afy = acre-feet per year; gpm = gallons per minute; GSWC = Golden State Water Company
Source: Data compiled by EDAW in 2007

GSWC would supply water to SCWA, and new GSWC water conveyance infrastructure would be required to convey initial water to SCWA's existing infrastructure in White Rock Road (see Impact 3.5-3 below). Any delivery of an initial water supply would require an agreement with SCWA that must describe capital improvements required to deliver the water, the source of funding for any such improvements, the price of initial water, and a commitment of the initial supply. Other existing agreements that address water supply in this area may need to be amended. It is expected that GSWC could begin delivery of water supplies within 6–12 months after execution of a wholesale water delivery agreement with SCWA. The project applicant(s) are currently working with GSWC and SCWA to secure any necessary agreements to provide initial water supplies to the project (Gisler, pers. comm., 2005).

Because GSWC has indicated that it would have an adequate water supply to serve Phase 1A, and that this water would be available until the SCWA facilities (Vineyard Surface WTP, the FRWP, and the NSAPP) have been constructed and are online, this water supply is considered a reliable source of potable water. Therefore, there is a reasonable likelihood that initial water supplies needed to serve Phase 1A would be available, and this impact is considered **direct** and **less than significant**. **No indirect** impacts would occur. ***[Similar]***

Based on the above analysis, there is a reasonable likelihood that initial water supplies needed to serve Phase 1A would be available. Therefore, no mitigation measures are required. In addition, under *Vineyard*, the identification and analysis of alternate sources of water and contingencies (including curtailment of development) for the project if water supply does not become available are not legally required. Although no mitigation is required, the City General Plan Infrastructure, Services, and Finance Element Actions ISF 2.4.1 and 2.4.2 requires verification that existing water supplies are available before approval of Phase 1A (see Mitigation Measures 3.5-2 and 3.5-3 below). If due to unknown or unforeseeable events, proof of water supply for Phase 1A cannot be shown upon approval per ISF 2.4.1 and 2.4.2 Actions, then development of Phase 1A would not commence and the impacts would be the same as the No Project Alternative, discussed below. Furthermore, in the event that, due to

unknown or unforeseeable events after development of Phase 1A commences, and water for Phase 1A is not available, then the analysis of alternative supplies and impacts of curtailment under Impact 3.5-2 for the remaining development of Phase 1 (see below) would apply to Phase 1A. That analysis is incorporated herein by reference.

Mitigation Measure: No mitigation measures are required.

Applies to: NP.

Under the No Project Alternative, mining activities at the project site, which are not part of the Rio del Oro project, would continue under existing conditional use permits—one originally issued by the County, and the other issued by the City—and possibly under one or more future individual implementation permits expected to be issued by the City. Mining activities would not require the provision of an initial or permanent water supply.

Because no development would occur under the No Project Alternative, initial water supplies would not be required; thus, **no direct** or **indirect** impacts would occur. ***[Lesser*]**

Mitigation Measure: No mitigation measures are required.

Impact 3.5-2: Need for Initial Water Supplies for the Remaining Phase 1 Development. *Project implementation would result in a need for an initial water supply to the project site for the remaining Phase 1 development until the SCWA facilities (Vineyard Surface WTP, the FRWP, and the NSAPP) have been constructed and are online.*

Applies to: PP, HD, IM, NF.

The permanent long-term water supply cannot be delivered to the project site until the SCWA facilities (Vineyard Surface WTP, the FRWP, and the NSAPP) have been constructed and are online. The project applicant(s) have discussed the availability of an initial water supply with SCWA and GSWC and have identified a potential water supply for providing initial water to development Phase 1A (see Impact 3.5-1 above). That water supply would be provided until long-term water facilities have been constructed by SCWA (Gisler, pers. comm., 2005).
The remaining development within Phase 1 would require other sources of initial water supply, and the project applicant(s) have discussed the availability of other initial water supplies with SCWA and GSWC. The following water supply options have been identified as potential sources of water for the remaining portions of development Phase 1.

Sources of Initial Water for Remaining Development within Phase 1

Option A

Option A would use existing GSWC wells that have been decommissioned as a result of groundwater contamination. Wellhead treatment could be provided to remove contaminants from one or more wells that contain low concentrations of contaminants. Although these wells are potentially above the action levels, wellhead treatment could be provided either for currently shut-down wells or for future additional wells that exceed regulatory criteria. Wellhead treatment would require the approval of the California Department of Public Health (DPH). DPH has approved wellhead treatment similar to that proposed under Option A at other locations in California, but has not yet approved such a facility in Sacramento. If these wells were brought back online, approximately 929 gpm (1,500 afy) of water supply could be available, thereby providing GSWC's system excess capacity that could serve as an initial water supply for the project. Implementation of Option A could potentially result in water quality and other health and safety impacts from the treatment of groundwater.

Option A has been discussed with GSWC, and GSWC has indicated it could begin installation of wellhead treatment on select wells after DPH approval (Gisler, pers. comm., 2006). GSWC would supply water to SCWA, and new GSWC water conveyance infrastructure would be required to convey the initial water to SCWA's existing infrastructure in White Rock Road. Any delivery of an initial water supply under Option A would require an agreement with SCWA that must describe capital improvements required to deliver the water, the source of funding for any such improvements, the price of initial water, and a commitment of the initial supply. Other existing agreements that address water supply in this area may need to be amended. Impacts resulting from water conveyance infrastructure required for Option A could include, but are not limited to, short-term impacts on air quality associated with construction, potential impacts on special-status plants and wildlife or sensitive habitats; potential disturbance of known or unknown cultural or paleontological resources; short-term increases in erosion and stormwater runoff; and short-term increases in construction noise levels.

GSWC must reach agreement on providing the water. Its willingness to do so would depend on its evaluation of the need to deliver water to connections within its own service area. If this option were implemented, and if SCWA does not implement actions necessary to provide long-term water, the water generated could remain available for as long as needed to serve the project, as long as the candidate wells do not become necessary to meet GSWC's base supply for its current customers.

Option B

Option B would pipe groundwater treated at an Aerojet GET facility (e.g., GET J facility) to the nearby Coloma/Pyrites WTP, where it would then be blended with treated groundwater and other potable surface-water supplies. This blended water would provide excess capacity that would then be diverted to GSWC's existing customers as well as to the project on an initial basis. This option would require DPH approval, and the permitting associated with use of GET J water under Option B are considered more substantial than Option A. This option would also require an evaluation of the appropriateness of blending, including the ratio of GET water to non-GET water. Assuming a 1:1 ratio, which is possible given that the GET water is treated to drinking-water standards before blending, up to approximately 3,903 gpm (6,300 afy) could be available to serve as an initial water supply for the project. Option B could also require modifications to the GET treatment operations to meet DPH requirements. Implementation of Option B could potentially result in water quality and other health and safety impacts from the treatment of groundwater.

GSWC would supply water to SCWA, and new GSWC water conveyance infrastructure would be required to convey initial water to SCWA's existing infrastructure in White Rock Road Any delivery of an initial water supply under Option B would require an agreement with SCWA that must describe capital improvements required to deliver the water, the source of funding for any such improvements, the price of initial water, and a commitment of the initial supply. Other existing agreements that address water supply in this area may need to be amended. Impacts resulting from water conveyance infrastructure required for Option B could include, but are not limited to, short-term impacts on air quality associated with construction; potential impacts on special-status plants and wildlife or sensitive habitats; potential disturbance of known or unknown cultural or paleontological resources; short-term increases in erosion and stormwater runoff; and short-term increases in construction noise levels.

GSWC must reach agreement on providing the water. Its willingness to do so would depend on its evaluation of the need to deliver water to connections within its own service area. If this option were implemented, and if SCWA does not implement actions necessary to provide long-term water, the water generated could remain available for as long as needed to serve the project, as long as the candidate wells do not become necessary to meet GSWC's base supply for its current customers.

Initial Water for Remaining Development within Phase 1 Water Demands

The remaining Phase 1 development water-supply demands are based on the proposed land uses minus the Phase 1A land uses shown in Table 3.5-8 above and were projected by applying the water-demand factor in the Zone 40 WSMP to each proposed land use. The water demands associated with the remaining Phase 1 development of the High Density, Impact Minimization, and No Federal Action Alternatives are similar to or less than those of the Proposed Project Alternative because the land uses proposed under those alternatives would involve an amount of development similar to or less than that of the Proposed Project Alternative. Table 3.5-10 below summarizes the average-day, maximum-day, and peak-hour water demands for the remaining Phase 1 development.

Table 3.5-10
Water Demands for Rio del Oro Remaining Phase 1 Development

Land Use	Dwelling Units[1]	Acres	Unit Water Demand Factor[2] (af/ac/yr)	Average Annual Water Demand (afy)	Maximum Annual Water Demand (afy)	Average-Day Demand (gpm)	Maximum-Day Demand (gpm)	Peak-Hour Demand (gpm)
Single-Family	965	193	2.89	557.8	1,115.6	345.6	691.2	1,382.4
Multifamily—Low Density	768	96	3.70	355.2	710.4	207.7	415.4	830.8
Multifamily—High Density	400	20	4.12	82.4	164.8	51.1	102.2	204.4
Commercial	–	139	2.75	382.3	764.6	236.9	473.8	947.6
Industrial	–	188	2.71	509.5	1,019	315.7	631.4	1262.8
Public	–	92	1.04	95.7	191.4	59.3	118.6	237.2
Public Recreation	–	67	3.46	231.8	463.6	143.6	287.2	574.4
Right-of-Way	–	47.6	0.21	10	20	6.2	12.4	24.8
Vacant	–	–	0	0	0	0	0	0
Total	**861**	**162.4**	–	**2,224.7**	**4,449.4**	**1,366.1**	**2732.2**	**5,464.4**
			7.5% system loss	166.9	333.8	102.5	205	410
			Total Demand	**2,057.8**	**4,115.6**	**1,263.6**	**2,527.2**	**5,055.4**

Notes: af/ac/yr = acre-feet per acre per year; afy = acre-feet per year; gpm = gallons per minute

[1] Total numbers of dwelling units based on 5 dwelling units per acre (du/ac) for single-family residential, 8 du/ac for medium-density residential, and 20 du/ac for high-density residential. Actual dwelling units may vary.

[2] The unit water demand factors provided in this table are consistent with the unit water demand factors used in the Zone 40 Water Supply Master Plan and the 2000 Water Forum Agreement.

Source: Wood Rodgers 2007a

Table 3.5-10 shows that the total projected maximum annual water demand is 4,115.6 afy for the Proposed Project Alternative. Option A (3,903 gpm or 6,300 afy) could potentially be used in combination with water supplies provided under Option B (929 gpm or 1,500 afy). If water supplies from both Options A and B became available, the total combined water supply from these sources would be approximately 4,832 gpm (7,800 afy).

Table 3.5-11 compares water supply available from Options A and B (7,800 afy) to the remaining Phase 1 development water-supply demands (4,115.6 afy) to determine whether a reliable water supply would be available to serve the remaining Phase 1 development. As shown in Table 3.5-11, Options A and B combined would have adequate water supplies to meet projected water demands under the remaining Phase 1 development of the

Proposed Project Alternative. Because the water demands associated with the remaining Phase 1 development of the High Density, Impact Minimization, and No Federal Action Alternatives are similar to or less than those of the Proposed Project Alternative, this analysis assumes that adequate water supplies would be available to meet projected water demands associated with theses alternatives.

Table 3.5-11
GSWC's Options A and B Water Supply Compared to Water Demand Associated with the Remaining Phase 1 Development

Option	Average Annual Water Demand (afy)	Maximum Annual Water Demand (afy)	Average-Day Demand (gpm)	Maximum-Day Demand (gpm)
Option A	750	1,500	464.5	929
Option B	3,150	6,300	1,951.5	3,903
Total	**3,900**	**7,800**	**2,416**	**4,832**
Remaining Phase 1 Development	2,057.8	4,115.6	1,263.6	2,527.2
Surplus	**1,842.2**	**3,684.4**	**1,152.4**	**2,304.8**

Notes: afy = acre-feet per year; gpm = gallons per minute; GSWC = Golden State Water Company
Source: Data compiled by MacKay and Somps in 2008 and EDAW in 2008

Both options would require separate agreements with GSWC and SCWA and would require DPH approval. DPH has approved wellhead treatment similar to that proposed under Option A at other locations in California, but has not yet approved such a facility in Sacramento. The permitting associated with use of GET J water under Option B are considered more substantial than Option A. Therefore, there is not reasonable certainty that one or both options would be available to serve the long-term demands of the remaining Phase 1 development.

Alternative Sources of Initial Water for Remaining Development within Phase 1

If initial water supply is limited or unavailable under Options A or B above, alternate initial water supplies would be required to serve the remaining development within Phase 1. The North Vineyard Well Field and GSWC Deep-Well Replacement Water options, described in detail below, could potentially provide other sources of this water.

North Vineyard Well Field

The idle capacity of the North Vineyard Well Field could potentially provide initial water supplies to the project. The North Vineyard Well Field is located on both sides of Excelsior Road between Florin Road and Elder Creek Road, and includes a 30-inch water pipeline to convey water to the Anatolia WTP. The well field could provide for extraction of up to 10,000 afy of groundwater for replacement and/or new water supplies to serve existing and/or proposed development within Zone 40. The North Vineyard Well Field has been identified a source of near-term and long-term groundwater supplies for the *Sunrise Douglas Community Plan/SunRidge Specific Plan* area. SCWA has allocated 7,273 afy to projects in the *Sunrise Douglas Community Plan/SunRidge Specific Plan* area. The remaining 2,727 afy could provide capacity to meet the initial needs of the project.

The first phase of the North Vineyard Well Field and Anatolia WTP (consisting of three of the wells and three of the filters) has been built, and this phase can produce and treat approximately 3,600 afy from the North Vineyard Well Field. At buildout, the Anatolia WTP will have the capacity to treat 7,300 afy and will include six filters treating water from seven wells (six operational and one emergency backup).

Implementation of this alternative water supply would require expansion of the North Vineyard Well Field by SCWA, construction of new conveyance facilities from the North Vineyard Well Field to the project site, and construction of a new water treatment plant (Coppola, pers. comm., 2008).

GSWC Deep-Well Replacement Water

Initial water could be supplied by drilling a new deep-well replacement (well #24) for wells in the westernmost portions of GSWC's service area (wells #3 and #4) that GSWC has taken out of service because of actual or anticipated contamination. Water pumped from this deep-well replacement would increase the water supplies available to GSWC by approximately 1,100 gpm. The additional water supply would serve the needs of the westernmost portions of the GSWC service area and would free capacity to serve other portions of the service area. This capacity could be allocated to the project until the completion of the Vineyard Surface WTP, the FRWP, the NSAPP, and other facilities required to provide the permanent long-term water supply.

The deep-well replacement-water concept has been discussed with GSWC in the past; however, GSWC has not committed to providing water from these replacement wells to the project. Under this option, with agreement with GSWC, any delivery of in initial water supply under the deep-well replacement-water option would require an agreement with SCWA that must describe capital improvements required to deliver the water, the source of funding for any such improvements, the price of initial water, and a commitment of the initial supply. Other existing agreements that address water supply in this area may need to be amended. In addition, this option would also require extending GSWC's system to the project site and may require additional infrastructure within the system. This option would require DPH approval, and it must consider the current dimensions and migration of the contaminant plume of groundwater from the Aerojet property north of the project site and the potential that new wells could become contaminated in the future. No additional groundwater extraction would be likely to occur in this area until after GET operations upgradient from the location are online.

Impact Conclusion

To provide water supplies to the remaining development within Phase 1, the project applicant(s) have discussed the availability of other initial water supplies with SCWA and GSWC and have identified two potential water supply alternatives (Options A and B). Because both options would require separate agreements with GSWC and SCWA and would require DPH approval, this water supply is not considered a reliable source of potable water. If initial water supply under Options A or B became limited or unavailable, other sources of water would be required to provide initial water supplies for the project. These alternative sources of water have been identified and discussed above. Because there is not a reasonable likelihood that initial water supplies needed to serve remaining development in Phase 1 would be available, this impact is considered **direct** and **significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure 3.5-2: Submit Proof of Water Supply Availability.

Applies to: PP, HD, IM, NF.

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:

- Proposed water supplies and delivery systems shall be identified at the time of development project approval to the satisfaction of the City. The water agency or company proposing to provide service (collectively referred to as "water provider") to the project may provide several alternative methods of supply and/or delivery, provided that each is capable individually of providing water to the project. The project applicant or water provider shall make a factual showing prior to project approval that the water provider or providers

proposing to serve the development project has or have legal entitlements to the identified water supplies or that such entitlements are reasonably foreseeable by the time of subsequent, project-specific discretionary land-use entitlements or approvals. This factual showing shall also demonstrate that the water provider's identified water supply is reasonably reliable over the long term (at least 20 years) under normal, single-dry and multiple-dry years.

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:

- An assured water supply and delivery system shall be available or reasonably foreseeable at the time of project approval. The water agency providing service to the project may provide several alternative methods of supply and/or delivery, provided that each is capable individually of providing water to the project.

- The project applicant, water agency (or agencies), or water company (or companies) providing water service to the project site shall make a factual showing consistent with, or the City shall impose conditions similar to, those required by Government Code section 66473.7 in order to ensure an adequate water supply for development authorized by the project. Prior to recordation of any final subdivision map, or prior to City approval of any similar project-specific discretionary land use approval or entitlement required for nonresidential uses, the project applicant or water provider shall demonstrate the availability of a long-term, reliable water supply for the amount of development that would be authorized by the final subdivision map or project-specific discretionary non-residential approval or entitlement. This assurance of water supply shall identify that the water provider has legal entitlement to the water source and that the water source is reasonably reliable (at least 20 years) under normal, dry and multiple dry years. Such demonstration shall consist of a written certification from the water provider that either existing sources are available or that needed improvements will be in place prior to occupancy.

Timing: 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.

Enforcement: City of Rancho Cordova Planning Department.

Implementation of Mitigation Measure 3.5-2 would reduce significant impacts related to the need for initial water supplies to serve the remaining Phase 1 development under the under the Proposed Project, High Density, Impact Minimization, and No Federal Action Alternatives to a **less-than-significant** level because the City would require 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.

If water supply for remaining Phase 1 development is not available because of unknown or unforeseeable events after approval and construction of the remaining Phase 1 development begins, implementation of Mitigation Measure 3.5-2 would result in the curtailment of development, resulting in a partially built-out project. Impacts associated with the curtailment of development are evaluated below in Impact 3.5-4.

Applies to: NP.

Under the No Project Alternative, mining activities at the project site, which are not part of the Rio del Oro project, would continue under existing conditional use permits—one originally issued by the County, and the other issued by the City—and possibly under one or more future individual implementation permits expected to be issued by the City. Mining activities would not require the provision of an initial or permanent water supply.

Because no development would occur under the No Project Alternative, initial water supplies would not be required; thus, **no direct** or **indirect** impacts would occur. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

Impact 3.5-3: Need for Initial Off-Site Water Conveyance Facilities. *Because permanent water conveyance facilities would not be available until completion of the NSAPP, initial conveyance facilities would be required to supply and convey water to the project site.*

Applies to: PP, HD, IM, NF.

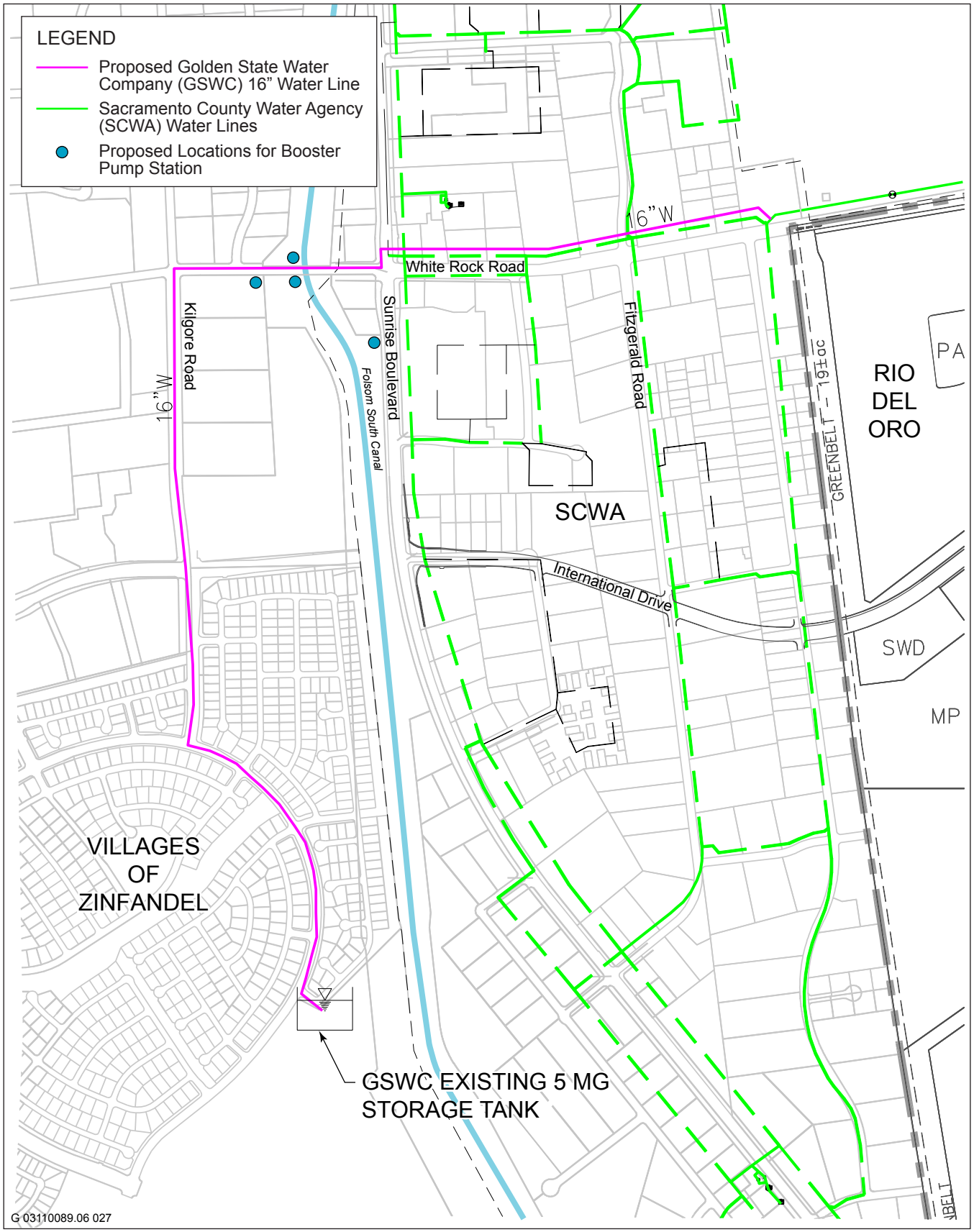
GSWC has indicated that it would have an adequate water supplies to meet projected water demands under Phase 1A (see Impact 3.5-1 above) of the proposed project. Initial off-site water conveyance facilities would be constructed to deliver water from GSWC's existing facilities to the project site. These facilities would include a new 16-inch water transmission main connecting an existing GSWC storage tank to an existing 16-inch SCWA transmission main and then to project facilities (Exhibit 3.5-1). The new pipeline would originate at an existing 5-million-gallon storage tank within the Villages at Zinfandel development southwest of the project site. The line would follow Baroque Drive north to Kilgore Road. The pipeline would then follow Baroque Drive north to Kilgore Road, north to White Rock Road, and then follow White Rock Road across the Folsom South Canal. The new transmission main would be placed underground parallel to an existing GSWC water transmission main within the existing road rights-of-way. The new transmission main would be suspended underneath the existing White Rock Road bridge crossing over the Folsom South Canal, and would connect with SCWA's existing 16-inch transmission main at the intersection of Luyung Drive and White Rock Road. The water transmission main would require an in-line booster pump to drive water supplies along the intertie. The booster pump would be placed at one of four potential locations, as depicted in Exhibit 3.5-1.

Although the new pipeline is needed to convey water from the GSWC system to the project on an initial basis, it would remain in use after the long-term water supplies for the project were constructed and online. The pipeline would then serve as an active intertie between GSWC's existing system and the existing SCWA system. As such, the pipeline would provide redundancy to both systems and act as a conveyance mechanism for SCWA to provide replacement water to GSWC in the future.

The new GSWC infrastructure described above that is required for initial water conveyance facilities necessary to serve the project has not been constructed, nor have final design plans and specifications been submitted or approved. These off-site water conveyance facilities have not been subject to CEQA or National Environmental Policy Act compliance; therefore, the following discussion analyzes environmental impacts associated with the construction of these facilities. The following impact analysis is site-specific, and the water supply pipeline would be placed in previously disturbed, existing road rights-of-way.

Air Quality

With respect to the temporary, short-term generation of criteria air pollutants (e.g., respirable particulate matter with a diameter smaller than 10 microns [PM_{10}]) and emissions of precursors (e.g., reactive organic gases [ROG] and oxides of nitrogen [NO_X]) during construction, the exact type and number of pieces of heavy-duty construction equipment, worker-commute and material-transport trips, and maximum daily acreage of disturbance required for the proposed pipe laying and construction of a pump station is not known at this time. However, temporary, short-term construction emissions of ROG and NO_X were modeled using off- and on-road emission factors contained in the Sacramento Metropolitan Air Quality Management District's (SMAQMD's) Road Construction Emissions Model Version 5.2 (SMAQMD 2006) computer program, as recommended by SMAQMD for linear-type construction projects (refer to Table 3.5-12 and Appendix O). Modeling was based on default model settings and construction information obtained for two similar projects, the Courtland and Walnut Grove Sewer Projects (County of Sacramento 2006, 2007).



Source: Wood Rodgers 2007

Proposed GSWC Water Line and Booster Pump Station

EXHIBIT 3.5-1

Rio del Oro Specific Plan Project Recirculated DEIR/Supplemental DEIS
City of Rancho Cordova and USACE
P 03110089.01 02/08

NORTH

EDAW

As shown in Table 3.5-12, construction of the proposed project would generate total unmitigated daily emissions of approximately 79 pounds per day (lb/day) of NO_X, which would not exceed SMAQMD's significance threshold of 85 lb/day. In addition, and according to SMAQMD, if a project's mass emissions (lb/day) of NO_X from mobile sources is determined to be less than the significance threshold using methodologies recommended by SMAQMD, then exhaust emissions of other pollutants (e.g., ROG, carbon monoxide [CO], nitrogen dioxide, and sulfur dioxide) from operation of construction equipment and worker commute would also be less than significant (SMAQMD 2004).

Table 3.5-12
Summary of Modeled Worst-Case Temporary, Short-Term Emissions Generated Daily by the Project during Construction

Source	Emissions (lb/day) NO_X
Pipe Laying[1]	
Exhaust from Diesel Mobile Equipment	32.0
Employee and Material-Transport Trips	1.1
Total Unmitigated (Pipe Laying)	33.1
Pump Station[2]	
Exhaust from Diesel Mobile Equipment	45.3
Employee and Material-Transport Trips	1.1
Total Unmitigated (Pump Station)	46.3
Maximum Daily Emissions Unmitigated (All Activities)	79.4
SMAQMD Significance Threshold	85

Notes:
lb/day = pounds per day; NOX = oxides of nitrogen; SMAQMD = Sacramento Metropolitan Air Quality Management District

1 Based on off- and on-road emission factors contained in the Road Construction Emissions Model Version 5.2 (SMAQMD 2006) computer program, default model settings, and construction information obtained for similar projects (Courtland and Walnut Grove Sewer Projects [County of Sacramento 2006, 2007]). Exhaust from construction equipment includes the operation of one backhoe, one excavator, one loader, and one off-highway truck for 8 hours per day. Exhaust emissions from worker commute trips include 80 total daily one-way trips (i.e., two one-way trips per day for each of the 20 workers) of 20 miles in length. Exhaust emissions from materials transport include two total daily round trips of 30 miles in length.

2 Based on off- and on-road emission factors contained in the Road Construction Emissions Model Version 5.2 (SMAQMD 2006) computer program, default model settings, and construction information obtained for similar projects (Courtland and Walnut Grove Sewer Projects [County of Sacramento 2006, 2007]). Construction equipment exhaust includes the operation of 1 backhoe, one bore/drill rig, one compactor, one excavator, one grader, and one other piece of miscellaneous construction equipment for 8 hours per day. Exhaust emissions from worker trips include 80 total daily one-way trips (i.e., two one-way trips per day for each of the 20 workers) of 20 miles in length. Exhaust emissions from materials transport include two total daily round trips of 30 miles in length.

Refer to Appendix O for all input assumptions and modeling results.
Source: Data modeled by EDAW in 2007

With respect to emissions of PM_{10}, SMAQMD has developed screening-level values related to the maximum actively disturbed area of the project site (SMAQMD 2004). According to those levels, PM_{10} emissions from projects in which less than 5 acres would be actively disturbed on any given day during construction are considered less than significant. Based on construction information obtained for similar projects (i.e., installation of 500 feet of pipeline per day, staging area of 30,000 square feet, and a booster pump station of approximately 5,000 square feet), the project would not disturb more than 5 acres per day. Thus, the proposed water supply

pipeline/pump station would result in a **less-than-significant** temporary, short-term construction-related impact because project-generated emissions would not exceed SMAQMD's applicable thresholds (e.g., 85 lb/day for NO_X and maximum disturbance area of 5 acres). No mitigation measures are required.

The long-term operation of the proposed water supply pipeline/pump station would likely only require one additional employee for the operation and maintenance of the pump station. Vehicle commute trips from one employee would result in a negligible amount of mobile-source emissions (i.e., 0.1 lb/day or less of ROG, NO_X, and PM_{10}; and 1 lb/day of CO). Furthermore, construction of these facilities would not result in the operation of any major stationary emission sources; however, long-term operation of the pump station could include the installation of an emergency backup generator. According to SMAQMD, stationary sources of air-pollutant emissions that comply with applicable regulations pertaining to best available control technology (BACT) and offset requirements are not considered to have significant air quality impacts (SMAQMD 2004). In fact, SMAQMD does not require the inclusion of such emissions in CEQA analyses unless the operation of a stationary source results in surplus emissions in excess of BACT and offsets (SMAQMD 2004). Stationary sources proposed as part of this project would be subject to SMAQMD permitting and BACT requirements. Also, in accordance with SMAQMD guidance, because electrical generation facilities for the Sacramento region are either located outside the area or offset through pollution credits, emissions from energy use are would not affect this air basin and are not included in this assessment (SMAQMD 2004). Thus, the proposed water supply pipeline/pump station would result in a **less-than-significant** long-term operational impact on air quality on both a regional and local level (e.g., CO). No mitigation measures are required.

With respect to the exposure of sensitive receptors to toxic air contaminants (TACs) and odors, construction of the project would result in short-term diesel exhaust emissions from on-site heavy-duty equipment. However, the use of such equipment would be temporary in terms of both the overall construction schedule and the fact the activities would move along the proposed pipeline route. In addition, project construction activities would not result in excessive materials transport or associated truck travel; and studies show a large drop-off (e.g., 70%) in diesel particulate matter 500 feet from the source (ARB 2005). Long-term operation of the pump station could include the installation of a diesel-fueled emergency backup generator that would operate for maintenance purposes and during actual interruption of power only. As discussed above, this, in addition to any other stationary sources that may emit TACs, would be subject to SMAQMD permitting and BACT for TACs (T-BACT) requirements. Thus, the proposed water supply pipeline/pump station would result in a **less-than-significant** short- and long-term impact with respect to the exposure to sensitive receptors to emissions of TACs or odors. No mitigation measures are required.

Lastly, construction of the proposed water supply pipeline would also result in the generation of emissions of greenhouse gases (e.g., carbon dioxide) from the use of on-site heavy-duty construction equipment and worker commute and material transport trips. However, such emissions would be finite in nature (e.g., only occurring during construction, not every year of operation); and based on project size and type would not be anticipated to result in a cumulatively considerable increase in greenhouse gases. In addition, as discussed above, the long-term operation of the proposed project would not result in any major sources of emissions. Thus, the proposed water supply pipeline/pump station would result in a **less-than-significant** impact with respect to the generation of greenhouse gases. No mitigation measures are required.

Biological Resources

The Folsom South Canal is a Reclamation water conveyance facility, and construction of the pipeline over the canal (underneath the existing roadway bridge) could require issuance of an encroachment permit from Reclamation. Consultation with this agency regarding the need for and authorization of an encroachment permit would therefore be required. Construction of the pipeline and booster pump would not result in adverse effects on biological resources, because the construction would occur in previously disturbed, existing roadways and developed areas that do not support special-status species or habitats, including wetlands. Therefore, the proposed

water supply pipeline/pump station would result in a **less-than-significant** impact related to biological resources. No mitigation measures are required.

Cultural Resources

For purposes of this analysis, impacts on cultural resources are considered significant if they would adversely affect unique archaeological resources, as defined in Section 21083.2(g) of the Public Resources Code, or cause substantial adverse changes in the significance of historical resources as defined in Section 15064.5(a) of the State CEQA Guidelines.

To determine whether the water pipeline would affect recorded cultural resources, a records search was conducted at the North Central Information Center of the California Historical Resources Information System on November 6, 2007. The records search revealed that the entire alignment for the proposed pipeline and booster pump station and the surrounding landscape was once covered in a deep pile of cobbles and rubble generated during historic gold mining and dredging along the American River. This large field of dredge tailings was designated with the unique identifier or "trinomial" CA-Sac-308-H. The U.S. Geological Survey 7.5-minute map of the Carmichael quadrangle from 1967 also indicates that the entire landscape surrounding the pipeline and booster pump station consisted of a field of dredge tailings. Despite the presence of this feature, several surveys have covered the majority of the alignment for the proposed intertie, revealing no cultural resources (County of Sacramento 1981, 2004; U.S. Army Corps of Engineers 1995). Inspection of aerial photographs for the alignment and the vicinity reveals that the landform has been graded and developed, removing all traces of the dredge tailings. Because the dredge tailings have been completely removed, because the landform has been mechanically graded, and because subsequent pedestrian surveys found no resources, the proposed pipeline route and booster station locations evince an extremely low sensitivity for cultural resources. Furthermore, because the new water-supply pipeline would be placed parallel to an existing GSWC water transmission main in disturbed road rights-of-way, the sensitivity for undiscovered buried resources is low. 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.

Mitigation Measure: Implement 2006 DEIR/DEIS Mitigation Measure 3.9-3 (Provide Preconstruction Worker Education and Stop Potentially Damaging Work if Human Remains are Uncovered During Construction).

Drainage, Hydrology, and Water Quality

The proposed water-supply pipeline would be placed in the rights-of-way of existing roads, and the new water-supply pipeline has been designed to appropriately convey runoff from upstream, off-site areas and detain runoff generated by the project on-site. Therefore, the proposed water-supply pipeline would result in **direct**, **less-than-significant** impacts related to increased total volume and the peak discharge rate of stormwater runoff, long-term impacts on water quality, and effects on groundwater recharge. No mitigation measures are required.

The water-supply pipeline and pump station would incorporate the design criteria described in detail in the *Master Drainage Study for Rio del Oro* (Wood Rodgers 2005), which requires review and incorporation of hydrologic analyses of the entire area, including the *Master Drainage Study for the Villages of Zinfandel* (Wood Rodgers 2003) where much of the pipeline alignment would be located. Therefore, the proposed water-supply pipeline would result in **direct, less-than-significant** impacts related to exposure of people or structures to significant flooding risk caused by failure of a levee. No mitigation measures are required.

The proposed water-supply pipeline 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 direct harm to aquatic organisms. Therefore, construction-related activities could result in **direct, potentially significant** impacts on hydrology, drainage, and water quality.

Mitigation Measure: Implement 2006 DEIR/DEIS Mitigation Measure 3.4-3 (Implement Measures or Best Management Practices to Reduce Water Quality Effects of Temporary Construction Activities).

Environmental Justice

The proposed water-supply pipeline would provide water supplies to new housing and other land uses identified for the proposed project. The proposed water-supply pipeline and pump station 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 and pump station would result in **no direct** or **indirect** impacts on environmental justice. No mitigation measures are required.

Geology, Soils, and 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.

The project site has relatively flat topography and is not located in or near a landslide hazard area, and known active seismic sources are located within 30 miles of the pipeline and pump station installation area. Therefore, potential damage to structures from seismic activity and related geologic hazards would be a **direct**, **less-than-significant** impact. No mitigation measures are required.

Construction would take place on land that was originally composed of dredge tailings and the Red Bluff/Redding soil complex. Because of development that has occurred in the area, the soil is now a mixture of types that would fall under the soil description of "Urban Land." This soil has a moderate stability and low to moderate shrink-swell potential; therefore, potential damage from construction on unstable soils would be a **direct**, **less-than-significant** impact. No mitigation measures are required.

The proposed water-supply pipeline and pump station would be located within the Sacramento-Fairfield Production-Consumption Region, a mineral resources area designated by California Division of Mines and Geology as regionally significant to satisfy future needs. Most of the development in the vicinity of the proposed water-supply pipeline and pump station was constructed in areas of dredge tailings (cobbles and silt) derived from mining activities conducted during the last 100 years. The nearby Rio del Oro project site has been and continues to be mined by aggregate companies. Any economically viable sand and gravel resources would not be affected by the placement of the proposed water-supply pipeline within the rights-of-way of existing roads. Because the area has been mined in the past, the loss of access to the approximately 40-foot by 50-foot pump station would not result in the loss of an economically viable local or regional mineral-resource recovery site. Therefore, the potential loss of mineral resources would be a **direct**, **less-than-significant** impact. No mitigation measures are required.

Mitigation Measure: Implement 2006 DEIR/DEIS Mitigation Measure 3.4-3 (Implement Measures or Best Management Practices to Reduce Water Quality Effects of Temporary Construction Activities).

Hazards and Hazardous Materials

There is no known contaminated soil or groundwater at the locations where the water-supply pipeline and pump station are proposed. 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 and operation of the pump station; 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 project site is not located on the Cortese List of hazardous materials sites. Although the project site would be located within the area covered by the *Mather Airport Land Use Plan*, construction of the underground pipeline and the pump station would have no effect on safety related to the 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. No mitigation measures are required.

Land Use

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 and pump station would result in **direct**, **less-than-significant** impacts related to land use. No mitigation measures are required.

Noise

Noise levels from project construction activities could temporarily exceed applicable standards at nearby noise-sensitive receptors. Typical noise levels attributable to heavy-construction equipment are listed in Table 3.16-8 of Chapter 16, "Noise," in the 2006 DEIR/DEIS. Conservatively, it is predicted that the noise levels attributable to construction of the water-supply pipeline at a typical outdoor activity area adjacent to pipeline construction would be 72.8 A-weighted decibels (dBA) equivalent noise level (L_{eq}) at 65 feet. Existing 6-foot noise barriers line the roadways where construction would occur. The noise reduction provided by the noise barriers would be approximately 5 dBA, resulting in an outdoor noise level of approximately 68.1 dBA L_{eq} at 65 feet relative to the first floor of existing residences. Interior noise levels at the second floor of residences (which are above the soundwall) would be expected to reach approximately 48 dBA L_{dn}. Thus, construction noise levels would exceed the City's standards for exterior and interior noise levels (at second-floor receptors only) 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. Therefore, construction-generated noise would result in a **direct**, **less-than-significant**, temporary, short-term noise impact on nearby noise-sensitive land uses. No mitigation measures are required.

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 its standard guidelines for assessment and mitigation of adverse impacts on paleontological resources, the Society of Vertebrate Paleontology (1995) established three categories of sensitivity for paleontological resources: high, low, and undetermined. Areas where fossils have been found previously are considered to have high sensitivity and a high potential to produce fossils. In areas of high sensitivity that are likely to yield unique paleontological resources, full-time monitoring is typically recommended during any project-related ground disturbance. Areas that are not sedimentary in origin and that have not been known to produce fossils in the past typically are considered to have low sensitivity, and monitoring is usually not needed during project construction. 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 pump station are considered to be of low paleontological sensitivity. Therefore, the potential for project-related construction activities to affect unique paleontological resources would result in a **direct**, **less-than-significant** impact. No mitigation measures are required.

Parks and Recreation

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

Population, Employment, and Housing

The proposed water-supply pipeline would provide water supplies to new housing and other land uses identified for the proposed project. The proposed water-supply pipeline and pump station itself would not increase population. Therefore, the water-supply pipeline and pump station would result in **no direct** impacts on these population, employment, and housing. The construction of the proposed water-supply pipeline and pump station would result in **indirect**, **less-than-significant** impacts on these public services, and these impacts are addressed in Chapter 3.2, "Population, Employment, and Housing," of the DEIR/DEIS. No mitigation measures are required.

Public Services

The proposed water-supply pipeline would provide water supplies to new housing and other land uses identified for the proposed project. The proposed water-supply pipeline and pump station itself would not increase demand for fire protection facilities, services, and equipment; police protection facilities, services, and equipment; and school facilities and services. Therefore, the water-supply pipeline and pump station would result in **no direct** impacts on these public services. The construction of the proposed water-supply pipeline and pump station would result in **indirect**, **less-than-significant** impacts on these public services, and these impacts are addressed in Chapter 3.6, "Public Services," of the DEIR/DEIS. No mitigation measures are required.

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.

Mitigation Measure: Implement 2006 DEIR/DEIS Mitigation Measure 3.6-1 (Prepare and Implement Traffic Control Plans).

Traffic and Transportation

Short-term, temporary impacts of construction on traffic are addressed above under "Public Services." Water supply pipeline and pump station installation would not result in permanent increases to roadway or intersection level of service standards or increases in peak hour traffic volumes. Therefore, the proposed water supply pipeline/pump station would result in **no direct or indirect** impacts related to traffic and transportation. No mitigation measures are required.

Utilities and Service Systems

The proposed water-supply pipeline would provide water supplies to new housing and other land uses identified for the proposed project. The proposed water-supply pipeline and pump station itself would not increase demand for water; wastewater service; solid-waste disposal, or electricity, natural gas, and communications services and systems. Therefore, the water-supply pipeline and pump station would result in **no direct** impacts on utilities and service systems. The construction of the proposed water-supply pipeline and pump station would result in **indirect**, **less-than-significant** impacts on utilities and services systems, and these impacts are addressed in Chapter 3.5, "Utilities and Service Systems," of the DEIR/DEIS. No mitigation measures are required.

Visual Resources

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 and a small aboveground pump station would not degrade the surrounding visual character. There are no state-designated scenic highway segments adjacent to the water-supply pipeline or pump station site. The areas where these facilities 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 water-supply pipeline and pump station would result in **direct**, **less-than-significant** impacts on visual resources. No mitigation measures are required.

Impact Conclusion

Because the infrastructure required for initial water conveyance facilities necessary to serve the project 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 **significant** impacts on cultural resources and **indirect** and **potentially significant** impacts on drainage, hydrology, and water quality; geology and soils; and public services. Mitigation measures for these indirect impacts are listed above. ***[Similar]***

Mitigation Measure 3.5-3: Submit Proof of an Off-Site and On-Site Infrastructure Delivery System or Assure that Adequate Financing is Secured.

Applies to: PP, HD, IM, NF.

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.

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 3.5-3 would reduce direct, potentially significant impacts under the Proposed Project, High Density, Impact Minimization, and No Federal Action Alternatives related to 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 3.4-3, 3.6-1, and 3.9-3 from the 2006 DEIR/DEIS would reduce indirect significant impacts under the Proposed Project, High Density, Impact Minimization, and No Federal Action Alternatives related to off-site water conveyance facilities to a **less-than-significant** level, because adverse impacts on cultural resources would be avoided, appropriate BMPs would be implemented to control erosion, and a traffic plan would be developed and implemented during construction activities.

Applies to: NP.

Under the No Project Alternative, mining activities at the project site, which are not part of the Rio del Oro project, would continue under existing conditional use permits—one originally issued by the County, and the other issued by the City—and possibly under one or more future individual implementation permits expected to be issued by the City. Mining activities would not require the provision of new water conveyance facilities because mining activities would not create a need for new initial water supplies and conveyance facilities.

Because no development would occur under the No Project Alternative, initial water supplies would not be required; thus, the initial water-supply infrastructure would not be required, and **no direct** or **indirect** impacts would occur. ***[Lesser]***

Mitigation Measures: No mitigation measures are required.

Impact 3.5-4: Temporary Curtailment of Project Development. *Implementation of Mitigation Measure 3.5-2 (for initial supplies) could result in the temporary curtailment of development during the period of time when the project would be dependent on the initial water supplies, resulting in a partially built-out project.*

Applies to: PP, HD, IM, NF.

Because the long-term water supply cannot be delivered to the project site until the SCWA facilities (the Vineyard Surface WTP, the FRWP, and the NSAPP) have been constructed and are online, the project applicant(s) have discussed the availability of an initial water supply and infrastructure with SCWA and GSWC. As a result of these discussions, the project applicant(s) have identified potential water-supply options and necessary off-site water conveyance facilities for providing initial water to the project site (see Impacts 3.5-1, 3.5-2, and 3.5-3 above for details). GSWC has indicated that it would have an adequate water supply to serve Phase 1A. This water supply is considered a reliable source of potable water; therefore, there is reasonable likelihood that initial water supplies needed to serve Phase 1A would be available. However, to meet the potable-water demand of the remaining development within Phase 1, the project applicant(s) have identified two additional water supply options (Options

A and B). If neither of these water supply options is approved, water supplies may not be available to meet the demands of the remaining development within Phase 1.

Implementation of Mitigation Measures 3.5-2 and 3.5-3 would require the City to make a factual showing that demonstrates the availability of a water supply from a public water system and adequate water conveyance facilities for the amount of development that would be authorized by the approval or entitlement at issue. If the initial water conveyance facilities are delayed or not constructed, no Phase 1 development could be approved. If Options A and/or B water supplies necessary to serve the remaining development Phase 1 are delayed or not constructed, or if all available initial water supply is allocated and no additional initial water supplies are available, or if long-term water supplies or conveyance facilities are delayed or not available, implementation of these mitigation measures would cause project development to be curtailed, resulting in a project that is only partially constructed. The following analysis discusses the potential environmental effects of curtailing project development. Such curtailment also could result from climatic or other environmental conditions that are unforeseen and cannot be predicted or from unexpected regulatory or legal developments.

Although curtailment would be most probable after the construction of Phase 1A, the analysis assumes curtailment of development could occur at any time. It is important to note that any effects of the curtailment are likely to be temporary and would be ameliorated upon receipt of the long-term water supply. In many respects, this is not dissimilar to what commonly occurs in the land development and construction business as a result of the cyclical nature of housing demand. Projects are often partially built and awaiting additional market-driven housing demand before they can be completed.

Land Use

Approval of final maps for each phase of development would be consistent with those currently identified in the land use plans evaluated in the 2006 DEIR/DEIS and would be consistent with the City General Plan's land use designations and zoning. In addition, the project would be consistent with the Sacramento County Local Agency Formation Commission's guidelines and the *Mather Airport Land Use Plan*. Curtailment of development could result in conflicts between the project and the Sacramento Area Council of Governments' Sacramento Region Blueprint. As explained in Section 3.1, "Land Use," of the 2006 DEIR/DEIS, the Proposed Project Alternative and High Density Alternative would develop land uses similar to those shown in the Preferred Blueprint Scenario (see Exhibit 3.1-1 in Section 3.1 of the 2006 DEIR/DEIS) and be consistent with the Sacramento Area Council of Governments (SACOG) Blueprint. However, the Blueprint envisions a higher density of development on the project site than proposed under the Impact Minimization Alternative and No Federal Action Alternative and those alternatives would result in inconsistency with the Sacramento Region Blueprint and a significant and unavoidable impact. Therefore, to the extent curtailment would result in lower density development than that envisioned under the SACOG Blueprint, curtailment could result in a significant land use impacts due to inconsistency with the SACOG Blueprint. This impact, similar to the impact of the Impact Minimization and No Federal Action Alternative, would be significant and unavoidable.

Population, Employment, and Housing

Project implementation would result in the development of new residential units, which would cause a direct increase in population. Increases in population and housing would be proportional to the amount of development occurring on the project site. Specific indirect impacts (e.g., traffic congestion, air quality degradation, and noise generation) and direct impacts (e.g., land conversions, commitment of resources, and other mechanisms associated with the development needed to accommodate increased population) would be expected to temporarily decrease with curtailment of development. Population growth by itself is not considered a significant environmental impact. Development of housing, infrastructure, and facilities and services to serve this growth can have significant environmental impacts through land conversions, commitment of resources, and other mechanisms. Direct impacts associated with the development needed to accommodate increased population are

evaluated in appropriate sections of the 2006 DEIR/DEIS. In this context, impacts related to population growth from curtailment of development would be less than significant, and no mitigation measures are required.

Currently, the City's strong employment base equates to a jobs/housing balance of 3:1, meaning that there are three job opportunities in Rancho Cordova for every one household and that Rancho Cordova has more jobs than employed residents. If development were curtailed, job opportunities associated with commercial and industrial development would be temporarily reduced. Other development projects in the city would include commercial and industrial uses, thus potentially providing employment opportunities that would otherwise be available on-site under a scenario without curtailment. Any such external effects, however, are not expected to be incrementally considerable or significant in and of themselves, and after project construction is reinitiated, job opportunities would continue to be developed. Therefore, impacts related to curtailment of development on employment would be the same as those described in Section 3.2, "Population, Employment and Housing," of the 2006 DEIR/DEIS, and no new impacts would result from curtailment of development. No mitigation measures are required.

Environmental Justice

Project implementation 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, impacts related to curtailment of development on environmental justice would be the same as those described in Section 3.3, "Environmental Justice," of the 2006 DEIR/DEIS (less than significant), and no new impacts would result from curtailment of development. No mitigation measures are required.

Drainage, Hydrology, and Water Quality

Project implementation would result in an increased risk of flooding, construction-related and long-term impacts on water quality, and effects on groundwater recharge. These impacts would be proportional to the amount of development occurring on the project site; curtailing development would temporarily reduce some of the impacts associated with hydrology and water quality. Implementation of mitigation measures identified in Section 3.4, "Drainage, Hydrology, and Water Quality," of the 2006 DEIR/DEIS would reduce impacts on drainage, hydrology, and water quality to a less-than-significant level. Because each phase of development would implement these mitigation measures, impacts related to curtailment of development on drainage, hydrology, and water quality would be the same as those described in Section 3.4 of the 2006 DEIR/DEIS, and no new impacts would result from curtailment of development. No new mitigation measures are required.

Utilities and Service Systems

Wastewater Treatment and Conveyance Facilities

Project implementation would increase the demand for wastewater treatment and conveyance facilities. Impacts related to the increased demand for such facilities would be proportional to the amount of development occurring on the project site; curtailing development would temporarily reduce the need for additional wastewater treatment and conveyance facilities to serve the project. Development of any phase of the project would require construction of wastewater conveyance facilities. Each phase of development would implement these mitigation measures, and impacts related to curtailing development on demands for wastewater treatment and conveyance facilities would be the same as those described in Section 3.5, "Utilities and Service Systems," of the 2006 DEIR/DEIS; no new impacts would result from curtailment of development. No new mitigation measures are required.

Nonpotable-Water Supplies and Infrastructure

Project implementation could result in the use of nonpotable-water supplies and infrastructure to provide landscaping and open space irrigation. Initially, the demands for nonpotable water would be met by the project's potable water-supplies. In the long term, it is assumed that future supplies of nonpotable water would be provided by SRCSD or by GET-Remediated Water facilities, when a sufficient supply of nonpotable water is available to

meet project demands. 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. As explained in Section 3.5, "Utilities and Service Systems," of the 2006 DEIR/DEIS and in this Recirculated DEIR/ Supplemental DEIS, the project would install a nonpotable-water system that would supply recycled water for the project site in the future when such water becomes available; therefore, the project would comply with the City's recycled-water ordinance. No new impacts would result from curtailment of development. No new mitigation measures are required.

Solid Waste Disposal

Project implementation would increase generation of solid waste. The demand for these services would be proportional to the amount of development occurring on the project site; therefore, curtailment of development would temporarily reduce generation of solid waste. In addition, the project would be served by the Kiefer Landfill, which has available capacity to last for 40 years. This landfill has sufficient permitted capacity to accommodate the project's needs for solid-waste disposal. Impacts would be less than significant and no mitigation measures are required. Therefore, impacts of curtailing development on generation of solid waste would be the same as those described in Section 3.5, "Utilities and Service Systems," of the 2006 DEIR/DEIS, and no new impacts would result from curtailment of development. No new mitigation is required.

Electrical, Natural Gas, and Communications Service and Infrastructure

Project implementation would increase the demand for electricity, natural gas, and communications service and infrastructure. The demand for these services would be proportional to the amount of development occurring on the project site. Curtailment of development would temporarily reduce the need for additional electricity, natural gas, and communications service and infrastructure. In addition, electrical, natural gas, and communications service providers are able to provide service and infrastructure to the project site, and the increase in demand for these resources would not be substantial in relation to existing service needs. Impacts would be less than significant and no mitigation measures are required. Therefore, impacts of curtailing development on demand for electricity, natural gas, and communications service and infrastructure would be the same as those described in Section 3.5, "Utilities and Service Systems," of the 2006 DEIR/DEIS, and no new impacts would result from curtailment of development. No mitigation measures are required.

Public Services

Fire Protection Services, Facilities, and Equipment

Project implementation would result in a need for additional fire protection facilities and personnel to serve the project at full buildout. These impacts would be proportional to the amount of development occurring on the project site. Curtailment of development would temporarily reduce the need for additional fire protection services, facilities, and equipment to serve the project. The Fire Station Replacement Program includes a proposal to build a new station in the Sunrise Boulevard/Douglas Road area of Rancho Cordova, south of the project site to accommodate new development in the project area. Construction of this station has not yet begun (Sacramento Metropolitan Fire District 2008). Curtailing development would reduce the need for this station in the short term. In addition, implementation of mitigation measures identified in Section 3.6, "Public Services," of the 2006 DEIR/DEIS would reduce impacts associated with demands for fire protection facilities, services, and equipment to a less-than-significant level. Because each phase of development would implement these mitigation measures, impacts of curtailing development on demands for fire protection facilities, services, and equipment would be the same as those described in Section 3.6 of the 2006 DEIR/DEIS, and no new impacts would result from curtailment of development. No new mitigation is required.

Police Protection Services, Facilities, and Equipment

Project implementation would result in a need for additional police protection facilities and personnel to serve the project at full buildout. These impacts would be proportional to the amount of development occurring on the project site. Curtailment of development would temporarily reduce the need for additional police protection services, facilities, and equipment to serve the project. Implementation of mitigation measures identified in Section 3.6, "Public Services," of the 2006 DEIR/DEIS would reduce impacts associated with demands for police protection facilities, services, and equipment to a less-than-significant level. Because each phase of development would implement these mitigation measures, impacts of curtailing development on demands for police protection facilities, services, and equipment would be the same as those described in Section 3.6 of the 2006 DEIR/DEIS, and no new impacts would result from curtailment of development. No new mitigation measures would be required.

Schools

The project would increase the demand for school facilities and services. Project implementation would result in construction of six elementary schools and one middle/high school, with one elementary school and the middle/high school constructed as part of Phase 1 development. Curtailing the project could lead to delays in the construction of Phase 1 schools within the project site and could cause additional busing and use of facilities by school districts until development reached the necessary trigger for school construction. However, as required by state law, the project applicant(s) would pay the state-mandated school impact fees to Folsom Cordova Unified School District to mitigate impacts on schools. The California Legislature has declared that the school impact fee is deemed to be full and adequate mitigation under CEQA. Therefore, impacts of curtailing development on demands for school services and facilities would be the same as those described in Section 3.6, "Public Services," of the 2006 DEIR/DEIS, and no new impacts would result from curtailment of development. No mitigation is required.

Geology, Soils, and Mineral Resources

Project implementation could result in impacts associated with construction-related erosion and unstable soils. Although curtailing development would temporarily reduce the amount of land developed, the same impacts related to erosion and unstable soils would still occur. Implementation of mitigation measures identified in Section 3.7, "Geology, Soils, and Mineral Resources," of the 2006 DEIR/DEIS would reduce impacts on geology, soils, and mineral resources to a less-than-significant level. Because each phase of development would implement these mitigation measures, impacts of curtailing development on geology, soils, and mineral resources would be the same as those described in Section 3.7 of the 2006 DEIR/DEIS, and no new impacts would result from curtailment of development. No new mitigation is required.

Paleontological Resources

Project implementation would not result in loss of or damage to previously unknown paleontological resources. Impacts would be less than significant and no mitigation measures are required. Therefore, impacts of curtailing development on paleontological resources would be the same as those described in Section 3.8, "Paleontological Resources," of the 2006 DEIR/DEIS, and no new impacts would result from curtailment of development. No mitigation is required.

Cultural Resources

Project implementation could result in loss of or damage to known or as-yet-discovered cultural resources. Implementation of mitigation measures identified in Section 3.9, "Cultural Resources," of the 2006 DEIR/DEIS would reduce impacts on cultural resources to a less-than-significant level. Because each phase of development would implement these mitigation measures, impacts of curtailing development on cultural resources would be

the same as those described in Section 3.9 of the 2006 DEIR/EIS, and no new impacts would result from curtailment of development. No new mitigation is required.

Biological Resources

Project implementation could result in the loss and degradation of biological resources. These impacts would be proportional to the amount of development occurring on the project site; curtailing development would temporarily reduce some of the impacts on biological resources. As explained in Section 3.10, "Biological Resources," of the 2006 DEIR/DEIS and in this Recirculated DEIR/Supplemental DEIS, several biological resources impacts—those related to jurisdictional wetlands and other waters of the United States, and waters of the state; the loss and degradation of sensitive natural communities; and the loss and degradation of habitat for special-status wildlife species—would be direct and less than significant with mitigation but would result in indirect significant and unavoidable impacts. Thus, curtailing development is unlikely to substantially increase the project's already significant impacts on biological resources, and no new impacts would result from curtailment of development. No new mitigation is required.

Visual Resources

Project implementation would result in degradation of the visual character of the project site and would create light, glare, and skyglow; these impacts would be proportional to the amount of development occurring on the project site. Curtailing development would temporarily reduce some of the effects related to visual character, light, and glare. As explained in Section 3.11, "Visual Resources," of the 2006 DEIR/DEIS, impacts on visual resources related to degradation of the project site's visual character and increased skyglow effects are significant and unavoidable. Thus, curtailing development is unlikely to substantially increase the project's already significant impacts on visual resources, and no new impacts would result from curtailment of development. No new mitigation is required.

Parks and Recreation

Increases in demand for parks and recreation facilities would be proportional to the amount of development occurring on the project site. Curtailment of development would temporarily reduce demands for these facilities. Implementation of mitigation measures identified in Section 3.12, "Parks and Recreation," of the 2006 DEIR/DEIS would reduce impacts associated with increased demand for parks and recreational facilities to a less-than-significant level. Because each phase of development would implement these mitigation measures, impacts of curtailing development would be the same as those described in Section 3.12 of the 2006 DEIR/DEIS, and no new impacts would result from curtailment of development. No new mitigation is required.

Hazards and Hazardous Materials

Project implementation could expose construction workers and the public to hazardous materials associated with contaminated soil, building materials, and mining activities. Implementation of mitigation measures identified in Section 3.13, "Hazards and Hazardous Materials," of the 2006 DEIR/DEIS would reduce impacts associated with hazards and hazardous materials to a less-than-significant level. Because each phase of development would implement these mitigation measures, impacts of curtailing development on hazards and hazardous materials would be the same as those described in Section 3.13 of the 2006 DEIR/DEIS, and no new impacts would result from curtailment of development. No new mitigation is required.

Traffic and Transportation

Increases in traffic are proportional to the amount of development occurring on the project site. There are a number of off-site roadway improvements for which the project applicant(s) would pay a fee. If project development were curtailed, those fees would not be paid until a water supply became available and development resumed. On the other hand, the project also would not generate traffic warranting the payment of the fee and,

presumably, the improvement. It is recognized that a perfect match will not always exist between fees collected and the timing of roadway improvements, and that market conditions often similarly curtail projects and the payment of fees that might otherwise be expected. Thus, in some instances there may be insufficient fees (from the project and other projects competing for limited water supplies) to pay for needed improvements; in other instances, there may not be sufficient need for improvements for which some fees have been collected but not spent.

The traffic projections assume that development of employment and retail centers would attract internal trips that would otherwise leave the project area, thus increasing external congestion; however, such attractants are a more significant consideration under buildout of the project, when roadways are fully loaded and employment and retail attractants actually exist. Such uses typically follow later in the buildout process, after "rooftops" have reached critical mass. Thus, it is possible that curtailment of development would cause project residents to have to leave the project area in their vehicles for jobs and retail opportunities that would otherwise be available on-site under a scenario without curtailment. However, because there would be less development, fewer total trips would be generated; therefore, curtailment is unlikely to significantly increase traffic congestion, based on the number of dwelling units expected before the long-term water supply and conveyance facilities are completed, and no new impacts would result from curtailment of development. No new mitigation is required.

Air Quality

Emissions are proportional to the amount of development occurring and trips generated during and after construction. Therefore, curtailing development would also temporarily curtail related emissions. As discussed above, retail and employment uses typically follow later in the buildout process, after "rooftops" have reached critical mass. Thus, it is possible that curtailing development would cause project residents to commute to out-of-area jobs and to those commercial areas that would be available on-site under a scenario without curtailment. Longer vehicle trips would result in greater emissions, contributing to air quality impacts. However, an attempt to project at what point development might stop, and therefore how many residents there might be and where they would choose to drive, would be too speculative to arrive at a meaningful conclusion. Any air pollution increases from such external effects, however, are not expected to be incrementally considerable or significant in and of themselves; this is especially given that, as explained in Section 3.15, "Air Quality," of the 2006 DEIR/DEIS, air quality effects from the project are significant and unavoidable. Thus, curtailing development is unlikely to substantially increase the project's already significant air emissions, and no new impacts would result from curtailment of development. No new mitigation is required.

Noise

Noise impacts are related to construction-related activities, project-generated traffic and on-site land uses, and aircraft. As explained in Section 3.16, "Noise," of the 2006 DEIR/DEIS, increases in noise levels from project-generated traffic, on-site land uses, and aircraft are significant and unavoidable. Increases in noise levels are proportional to the amount of development occurring, and curtailment of development would temporarily reduce noise-related impacts. Thus, curtailing development is unlikely to substantially increase the project's already significant noise impacts from the project, and no new impacts would result from curtailment of development. No new mitigation is required.

Impact Conclusion

Based on the analysis of the resources discussed above, impacts associated with curtailment of project development would be the same as those identified in Table ES-1 of the executive summary of the 2006 DEIR/DEIS. The temporary curtailment of development would not result in one or more significant environment effects in addition to those that would be caused by the project, which have already been analyzed in the 2006 DEIR/DEIS. **Direct** impacts related to population, housing, and employment; and environmental justice would be **less than significant**. **Direct** impacts related to drainage, hydrology, and water quality; public services; geology,

soils, and mineral resources; paleontological resources; cultural resources; parks and recreation; hazardous materials; and noise would be **potentially significant**. **Direct** impacts related to land use, utilities and service systems, biological resources, visual resources, traffic and transportation, and air quality would be **significant**. After implementation of mitigation measures already identified in the 2006 DEIR/DEIS, impacts on biological resources, visual resources, traffic and transportation, and air quality would remain significant and unavoidable, and the other impacts would be reduced to a less-than-significant level. **Indirect significant** impacts on utilities and service systems and biological resources would occur. ***[Similar]***

Mitigation Measure: Implement the same mitigation measures called for in the 2006 DEIR/DEIS and in this Recirculated DEIR/Supplemental DEIS, as specifically set forth in Table ES-1.

Implementation of the same mitigation measures called for in the 2006 DEIR/DEIS would reduce potentially significant and significant impacts related to curtailment of development for the same reasons elaborated in each section of Chapter 3, "Affected Environment, Environmental Consequences, and Mitigation Measures" of the 2006 DEIR/DEIS.

Applies to: NP.

Under the No Project Alternative, mining activities at the project site, which are not part of the Rio del Oro project, would continue under existing conditional use permits—one originally issued by the County, and the other issued by the City—and possibly under one or more future individual implementation permits expected to be issued by the City. Mining activities would not require the provision of new water supply or conveyance facilities.

Because no development would occur under the No Project Alternative, proposed development would not be curtailed; thus, **no direct** or **indirect** impacts would occur. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

Impact 3.5-5: Increased Demand for Permanent Water Supplies. *Project implementation would increase demand on the existing water supply.*

Applies to: PP, HD, IM, NF.

The project would be served by SCWA Zone 40 through its conjunctive-use water supply system. SCWA has existing secured surface-water supplies, groundwater, and recycled water, as well as the right to GET-Remediated Water supplies pursuant to the Aerojet-County agreement, and is currently pursuing entitlements for appropriative water supplies (i.e., future planned water supplies).

Proposed Project's Water Demand

In compliance with SB 610, a WSA has been prepared to determine whether the projected available water supplies would meet the project's water demand, in addition to the existing and planned future uses. The SCWA Board of Directors adopted the Rio del Oro WSA in June 2006. For purposes of this analysis, it is assumed that the WSA also would reflect availability of water to meet demands associated with the High Density, Impact Minimization, and No Federal Action Alternatives, because the demands from those alternatives are similar to that of the Proposed Project Alternative. The following impact analysis summarizes the projected water supplies and demand.

The project's buildout water demands were estimated by applying a water-demand factor to each proposed land use. The land uses and water demands under the Proposed Project Alternative were identified in the *Rio del Oro*

Plan Area Water Supply Master Plan (Wood Rodgers 2004, 2007a) and are summarized in Table 3.5-13 below. The land uses and water demands under the High Density, Impact Minimization, and No Federal Action Alternatives are summarized in Tables 3.5-14, 3.5-15, and 3.5-16 below.

Table 3.5-13
Summary of Program Level Land Use and Water Demands—Proposed Project Alternative

Land Use	Area (acres)	Unit Water-Demand Factor1 (af/ac/yr)	Water Demand (afy)
Single-Family	1,597	2.89	4,615
Multifamily—Low Density	237	3.7	877
Multifamily—High Density	86	4.12	354
Commercial	293	2.75	806
Industrial	282	2.71	764
Public	161.5	1.04	168
Public Recreation	170	3.46	588
Right-of-Way	471	0.21	99
Vacant	531	0	–
Total	**3,828.5**		**8,271**
System Losses (7.5%)			620
Total Demand			**8,891**

Notes:
af/ac/yr = acre-feet per acre per year; afy = acre-feet per year
[1] The unit water-demand factors provided in this table are consistent with the unit water-demand factors used in the *Zone 40 Water Supply Master Plan* and the 2000 *Water Forum Agreement*.
Sources: Wood Rodgers 2004, 2007a

Table 3.5-14[1]
Summary of Program Level Land Use and Water Demands—High Density Alternative

Land Use	Area (acres)	Unit Water-Demand Factor[1] (af/ac/yr)	Water Demand (afy)
Single-Family	1,567	2.89	4,829
Multifamily—Low Density	249	3.7	921
Multifamily—High Density	104	4.12	428
Commercial	293	2.75	806
Industrial	282	2.71	764
Public	161.5	1.04	168
Public Recreation	170	3.46	588
Right-of-Way	471	0.21	99
Vacant	531	0	–
Total	**3,828.5**		**8,603**
System Losses (7.5%)			645
Total Demand			**9,248**

Notes:
af/ac/yr = acre-feet per acre per year; afy = acre-feet per year
[1] The unit water-demand factors provided in this table are consistent with the unit water-demand factors used in the *Zone 40 Water Supply Master Plan* and the 2000 *Water Forum Agreement*.
Sources: Wood Rodgers 2004, 2007a

Table 3.5-15[1]
Summary of Program Level Land Use and Water Demands—Impact Minimization Alternative

Land Use	Area (acres)	Unit Water-Demand Factor[1] (af/ac/yr)	Water Demand (afy)
Single-Family	1,032.5	2.89	2,984
Multifamily—Low Density	241	3.7	892
Multifamily—High Density	173.5	4.12	642
Commercial	286	2.75	787
Industrial	261	2.71	707
Public	152	1.04	158
Public Recreation	167	3.46	578
Right-of-Way	497	0.21	104
Vacant	1,018.5	0	–
Total	**3,828**		**6,852**
System Losses (7.5%)			514
Total Demand			**7,366**

Notes:
af/ac/yr = acre-feet per acre per year; afy = acre-feet per year
[1] The unit water-demand factors provided in this table are consistent with the unit water demand factors used in the *Zone 40 Water Supply Master Plan* and the 2000 Water Forum Agreement.
Sources: Wood Rodgers 2004, 2007a

Table 3.5-16[1]
Summary of Program Level Land Use and Water Demands—No Federal Action Alternative

Land Use	Area (acres)	Unit Water Demand Factor[1] (af/ac/yr)	Water Demand (afy)
Single-Family	1,477	2.89	4,269
Multifamily—Low Density	210	3.7	777
Multifamily—High Density	85	4.12	350
Commercial	238	2.75	655
Industrial	232	2.71	629
Public	152.5	1.04	159
Public Recreation	182	3.46	630
Right-of-Way	393	0.21	83
Vacant	859	0	–
Total	**3,828**		**7,552**
System Losses (7.5%)			566
Total Demand			**8,118**

Notes:
af/ac/yr = acre-feet per acre per year; afy = acre-feet per year
[1] The unit water-demand factors provided in this table are consistent with the unit water-demand factors used in the *Zone 40 Water Supply Master Plan* and the 2000 *Water Forum Agreement*.
Sources: Wood Rodgers 2004, 2007a

Since the 2006 DEIR/DEIS was prepared, a *Revised Draft Water Supply Master Plan* has been prepared for the project (Wood Rodgers 2007a), and this master plan has determined that the project's total estimated water demands are 8,800 afy. This is approximately 91 afy less than the 8,891 afy estimated by the draft WSMP prepared in 2004. This small change can be explained by the fact that some acreages of land uses have been modified slightly. For purposes of this Recirculated DEIR/Supplemental DEIS, the most conservative approach to

the analysis was taken. As a result, this Recirculated DEIR/Supplemental DEIS evaluates a greater maximum water demand (8,891 afy) than the estimated water demand (8,800 afy) identified in the 2007 revised draft WSMP.

The total projected water demands are 8,891 afy for the Proposed Project Alternative, 9,248 afy for the High Density Alternative, 7,366 afy for the Impact Minimization Alternative, and 8,118 afy for the No Federal Action Alternative. A portion (1,505 acres) of the project site lies within Zone 40's 2030 Study Area. SCWA has planned for 1,500 afy of water supplies through the Zone 40 WSMP for these lands. The remaining demands under the Proposed Project Alternative (7,391 afy), the High Density Alternative (7,748 afy), the Impact Minimization Alternative (5,866 afy), and the No Federal Action Alternative (6,618 afy) would be met with GET-Remediated Water. More than 15,000 afy of GET-Remediated Water would be available to serve the project based on SCWA's agreement with Aerojet. These water supplies would be available when the Vineyard Surface WTP, the FRWP, and the NSAPP are constructed and online.

Reasonable Likelihood of Long-Term Water Supplies to Meet Project Demands

SCWA Zone 40 Water Supplies

Table 3.5-17 lists available water supplies in Zone 40 during normal, single dry, and multiple dry years. This table reflects a conjunctive-use pattern in Zone 40 in which groundwater use averages 39,000 afy in normal years. In dry years, when the availability of surface water is limited, projected groundwater use increases to 70,000 afy to make up for the reduction in surface water. 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 3.5-17
Reliability of SCWA Zone 40 Water Supplies for 2030 (afy)[1]

Water Supply Sources	Normal Water Year	Single Dry Water Year	Multiple Dry Water Years			
			Year 1	Year 2	Year 3	Year 4
Zone 40 Surface Water	69,567	34,683	26,106	26,106	23,183	20,909
Zone 40 Groundwater	39,097	68,327	65,599	65,599	68,522	70,795
Zone 40 Recycled Water	4,400	4,400	4,400	4,400	4,400	4,400

Notes:
afy = acre-feet per year; SCWA = Sacramento County Water Agency
[1] This table presents only Zone 40 water supply sources as identified in the *2005 Zone 41 Urban Water Management Plan*. It does not account for any available supplies of groundwater extraction and treatment (GET)–Remediated Water.
Source: SCWA 2005b

The project's water demands under normal and dry-year conditions were compared to available water supplies from 2010 through 2030 to determine whether a reliable water supply is available to serve the project and existing water demands during normal and dry years (Tables 3.5-18 and 3.5-19).

As shown in Tables 3.5-18 and 3.5-19, SCWA has adequate water supplies available to meet projected water demands under the Proposed Project, High Density, Impact Minimization, and No Federal Action Alternatives, even in critically dry years. SCWA has existing secured surface-water supplies, groundwater, and recycled water, as well as the right to GET-Remediated Water supplies pursuant to the Aerojet-County agreement (discussed below), and is currently pursuing entitlements for appropriative water supplies (i.e., future planned water 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. SCWA would meet dry-year demands by

Table 3.5-18
Normal-Year Comparison of Water Supply and Demand (afy)

Source	2010	2015	2020	2025	2030
Supply					
Zone 40 Surface Water[1]	13,060	44,143	48,772	68,700	69,567
Zone 40 Groundwater[1]	34,125	28,837	40,470	31,324	39,097
Zone 40 Recycled Water[1]	4,400	4,400	4,400	4,400	4,400
GET-Remediated Water[2]	15,000	15,000	15,000	15,000	15,000
Total Supplies	**66,585**	**92,380**	**109,642**	**119,424**	**128,064**
Demand					
Zone 40 (Rio del Oro project not included)	50,085	75,880	92,142	102,924	111,564
Rio del Oro project	8,891	8,891	8,891	8,891	8,891
Total Demand	**58,976**	**84,771**	**101,033**	**111,815**	**120,455**
Difference (Supply minus Demand)	7,609	7,609	7,609	7,609	7,609

Notes: afy = acre-feet per year

[1] These water supply sources for Zone 40 were identified in the 2005 Zone 41 Urban Water Management Plan.

[2] Groundwater extraction and treatment (GET)–Remediated Water supply includes water for development for the Aerojet properties (including Rio del Oro and Westborbough).

Source: SCWA 2005b, City of Rancho Cordova 2006b

Table 3.5-19
Dry-Year Comparison of Water Supply and Demand (afy)

Source	2010	2015	2020	2025	2030
Supply					
Zone 40 Surface Water[1]	243	26,411	29,441	38,606	34,683
Zone 40 Groundwater[1]	44,362	42,700	55,120	56,197	68,327
Zone 40 Recycled Water[1]	4,400	4,400	4,400	4,400	4,400
GET-Remediated Water[2]	15,000	15,000	15,000	15,000	15,000
Total Supply	**64,005**	**88,511**	**103,961**	**114,203**	**122,410**
Demand					
Zone 40 (Rio del Oro project not included)	47,505	72,011	87,461	97,703	105,910
Rio del Oro project	8,891	8,891	8,891	8,891	8,891
Total Demand	**56,396**	**80,902**	**96,352**	**106,594**	**114,801**
Difference (Supply minus Demand)	7,609	7,609	7,609	7,609	7,609

Notes: afy = acre-feet per year

[1] This water supply sources for Zone 40 were identified in the 2005 Zone 41 Urban Water Management Plan.

[2] Groundwater extraction and treatment (GET)–Remediated Water supply includes water for development for the Aerojet properties (including Rio del Oro and Westborbough).

Source: SCWA 2005b, City of Rancho Cordova 2006b

increasing groundwater pumping from the Central Basin as outlined in the Zone 40 WSMP. The maximum groundwater pumping levels would not exceed the amount identified in the Zone 40 WSMP (69,900 afy) and would be below the sustainable yield for the Central Basin identified in the WFA (273,000 afy). SCWA has sufficient wells and treatment facilities available to meet these pumping levels. 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. The dry-year cutback volumes are 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 customers' water demand.

Circumstances that could affect the likelihood of long-term water supplies would include competition from other development in Zone 40, such as expansion of the City of Elk Grove's urban services area, and the ESA clearance for the CVP water facilities at the Freeport intake facility. Neither of these scenarios is anticipated to affect long-term water supplies available for Zone 40. (see "Circumstances Affecting the Likelihood of Long-Term Water Supplies.")

GET-Remediated Groundwater

Aerojet currently extracts and treats groundwater for contaminants at various GET facilities at or near its property in Rancho Cordova. The GET facilities are operated under one or more directives from the EPA, the Central Valley RWQCB, and DTSC, which requires extraction of contaminated groundwater, treatment of the groundwater, and appropriate discharge of treated groundwater, principally to the American River. The EIR for the Zone 40 WSMP, which was prepared by SCWA (2004a) and has been certified, discussed Aerojet's treatment systems and fully evaluated the potential hazards associated with and future uses of this groundwater after treatment.

GET- Remediated Water sufficient to meet the project's water demands would be provided pursuant to agreement with Aerojet. Aerojet's GET facilities currently extract, treat, and discharge to the American River approximately 15,000 afy of GET- Remediated Water, and these facilities are being expanded under government oversight over the next several years to extract, treat, and discharge more than 26,000 afy. Additionally, there are two other GET facilities (also under environmental agency oversight) that presently discharge to Morrison Creek, but can, through construction of new pipelines, discharge to the American River. One of the GET facilities discharging to Morrison Creek is operated by MDC/Boeing, which, along with Aerojet, is obligated to remediate groundwater migrating from portions of property formerly owned by MDC/Boeing and currently owned by Aerojet. Upon completion of all planned GET facilities, and if the water currently discharging to Morrison Creek is redirected to the American River through pipelines, more than 35,000 afy of treated groundwater would be discharged to the American River.

GET-Remediated Water is currently discharged to the American River and is available for diversion at the FRWP on the Sacramento River under agreement between Aerojet and SCWA authorizing that diversion. The agreement, which was entered in 2003, grants to SCWA the GET-Remediated Water discharged to the American River. In exchange for this water, among other matters, SCWA agreed to provide replacement water to GSWC and Cal-Am through a replacement water supply project and to provide water for development for the Aerojet properties (including Rio del Oro) in excess of the replacement water-supply obligations.

As discussed above, the RWSP DEIR was circulated for public review in October 2006. The RWSP DEIR evaluates actions necessary for SCWA to receive 35,000 afy of GET-Remediated Water discharged to the American River and provide 10,000 afy of the water directly or through exchange to the Folsom South Canal. The RWSP DEIR also evaluates the environmental impact of permanent pipelines and water diverted at the Folsom South Canal for replacement-water supply for GSWC and enhancement of Cosumnes River flows. Finally, the RWSP DEIR describes 15,500 afy of GET-remediated water as being available for diversion at the FRWP. The

comment period for the RWSP DEIR has closed, but no date has been scheduled for consideration of approval and certification of a FEIR.

The Aerojet-SCWA Agreement allowed either party to terminate the agreement if SCWA has not certified the FEIR and approved the RWSP by a specified date. The specified date has now passed. Neither party has yet acted to terminate the Aerojet-County Agreement and it currently remains in effect; however, SCWA has informed Aerojet that it will require changes to the Aerojet-County Agreement and that it does not anticipate implementation of the RWSP in its entirety as currently described in the RWSP DEIR.

Approval and implementation of the RWSP by SCWA as described in the RWSP DEIR is not required for GET-Remediated Water to be available to SCWA to meet the project's water demand in addition to SCWA's existing and other projected future demands. The GET-Remediated Water is already being discharged to the American River at quantities sufficient to meet the project's demand and could be made available to SCWA at the FRWP through implementation of the Aerojet-County Agreement, a modified agreement, or a new agreement.

Alternatives to Long-Term Water Supply

As described above, SCWA has existing secured surface-water supplies, groundwater, and recycled water, as well as the right to GET-Remediated Water supplies pursuant to the Aerojet-County agreement, and is currently pursuing entitlements for appropriative water supplies (i.e., future planned water supplies). Because currently available water supplies for the project area (i.e., GET-Remediated Water, other existing groundwater supplies, and the SMUD and Fazio CVP contracts) are reasonably likely, the identification and analysis of alternate sources of water and the impacts associated with those sources are not required under *Vineyard*. However, although it is not legally required, a discussion of alternative sources is included below.

GSWC Phase 1A Water Supplies

As discussed in Impact 3.5-1 above, GSWC has indicated that it would have an adequate water supply to serve Phase 1A. Existing GSWC water that exceeds current projected maximum-day system demand could be delivered to the project as initial water supply. GSWC has indicated that it would have a maximum water supply 968 afy. This water would be available until the SCWA facilities (Vineyard Surface WTP, the FRWP, and the NSAPP) have been constructed and are online. Therefore, there is a reasonable likelihood that initial water supplies needed to serve Phase 1A would be available and that this water supply would serve the long-term demands of Phase 1A of the project. Other water supply sources would be required to serve the remaining Phase 1 development and subsequent phases of development.

GSWC Options A and B

As discussed in Impact 3.5-2 above, GSWC Options A and B could potentially meet the project's permanent long-term water demands, as these options are expected to result in capacity that exceeds the demands of GSWC's current service area.

Option A would use existing GSWC wells that have been decommissioned as a result of groundwater contamination. Wellhead treatment could be provided to remove contaminants from one or more wells that contain low concentrations of contaminants. Although these wells are potentially above the action levels, wellhead treatment could be provided either for currently shut-down wells or for future additional wells that exceed regulatory criteria. If these wells were brought back online, approximately 1,500 afy of water supply could be available, thereby providing GSWC's system excess capacity that could serve as an initial water supply for the project.

Option B would pipe groundwater treated at an Aerojet GET J facility (e.g., GET J facility) to the nearby Coloma/Pyrites WTP, where it would then be blended with treated groundwater and other potable surface water. This blended water would provide excess capacity that would then be diverted to GSWC's existing customers as

well as to the project. This option would also require an evaluation of the appropriateness of blending, including the ratio of GET to non-GET water. Up to approximately 6,300 afy could be available to serve as an initial water supply for the project.

Option B could potentially be used in combination with water supplies provided under Option A. The total water available from Options A and B (7,800 afy) would not support the entire project at buildout (8,891 afy). If water supplies from both Options A and B became available, these supplies could potentially be used in combination with water supplies provided by GSWC for Phase 1A (968 afy). The total combined water supply from these sources would be 8,768 afy, and these combined water supplies would still not support the entire project at buildout.

The total water available from Options A and B would not support the entire project at buildout. Both options would require separate agreements with GSWC and SCWA and would require DPH approval. DPH has approved wellhead treatment similar to that proposed under Option A at other locations in California, but has not yet approved such a facility in Sacramento. The permitting associated with use of GET J water under Option B are considered more substantial than Option A. Therefore, there is not reasonable certainty that these water supplies would be available to serve the long-term demands of the project.

GSWC Deep-Well Replacement Water

Under the GSWC deep-well replacement-water option, described in Impact 3.5-2 above, initial water could be supplied by drilling a new deep-well replacement (well #24) for wells in the westernmost portions of GSWC's service area (wells #3 and #4) that GSWC has taken out of service because of actual or anticipated contamination. Water pumped from this deep-well replacement would increase the water supplies available to GSWC by approximately 1,100 gpm. The additional water supply would serve the needs of the westernmost portions of the GSWC service area and would free capacity to serve other portions of the service area.

The deep-well replacement-water concept has been discussed with GSWC in the past; however, GSWC has not committed to providing water from these replacement wells to the project. Under this option, with agreement with GSWC, any delivery of in initial water supply under the deep-well replacement-water option would require an agreement with SCWA that must describe capital improvements required to deliver the water, the source of funding for any such improvements, the price of initial water, and a commitment of the initial supply. Other existing agreements that address water supply in this area may need to be amended. In addition, this option would also require extending GSWC's system to the project site and may require additional infrastructure within the system. This option would require DPH approval, and it must consider the current dimensions and migration of the contaminant plume of groundwater from the Aerojet property north of the project site and the potential that new wells could become contaminated in the future. No additional groundwater extraction would be likely to occur in this area until after GET operations upgradient from the location are online.

Because this option would require separate agreements with GSWC and SCWA and would require DPH approval, water supplies identified under the GSWC deep-well replacement-water option are not considered a reliable source of potable water. Therefore, there is not reasonable certainty that these water supplies would be available to serve the long-term demands of the proposed project.

Natomas Central Mutual Water Company

Natomas Central Mutual Water Company (Natomas Mutual) primarily provides irrigation water to its shareholders for agriculture purposes. Natomas Mutual has historically provided water to more than 33,200 acres of land north and west of the city limits of Sacramento and its service area is bordered on the west by the Sacramento River and stretches into Sutter County to the north. Natomas Mutual has water rights for 120,000 afy of water from Reclamation and diverts this water from the Sacramento River.

In March 2004, Natomas Mutual authorized its staff and consultants to finalize an operating agreement with GSWC to provide water and wastewater services to municipal and industrial users in the Natomas Basin via a separate conveyance system. As land is being converted from agricultural (predominantly rice) to residential land uses in Natomas Mutual's service area, the total water demands in the service area has decreased (rice farming is a water intensive use). This has resulted in a potential surplus in Natomas Mutual's available water supplies.

Natomas Mutual has indicated that through the partnership with GSWC, they are pursuing opportunities to market (e.g., sell, transfer) their surplus water supply; however, information regarding the specific amount of available water supplies is not available. The sale or transfer of water from Natomas Mutual to purveyors within Rancho Cordova would require approval by the State Water Resources Control Board, Division of Water Rights and the preparation of necessary environmental documentation. Further, additional conveyance and treatment facilities would likely be required to deliver water from Natomas Mutual's service area to the City. Therefore, there is not reasonable certainty that these water supplies would be available to serve the long-term demands of the proposed project.

City of Folsom

GSWC has entered into an agreement with the City of Folsom to transfer 5,000 afy to the City of Folsom pursuant to its agreement for replacement water supplies with Aerojet. Within the agreement there is the option for the City of Folsom to transfer the 5,000 afy to the SCWA for its use within its conjunctive use water supply system. However, the City does not anticipate the transfer of these supplies to SCWA would be likely. Therefore, there is not reasonable certainty that these water supplies would be available to serve the long-term demands of the proposed project.

Sacramento Suburban Water District

GSWC currently has an intertie with Sacramento Suburban Water District (SSWD)'s water distribution system. The potential may exist for the acquisition of additional supplies to meet City demands; however, the City would need to coordinate with GSWC and SSWD to determine the feasibility of those supplies. If supplies are available, no substantial new infrastructure would need to be constructed because an intertie connection between these two agencies is already available. Additional distribution and treatment facilities may be required to convey the water from GSWC existing distribution to deliver these supplies. Because it is unknown if water supplies would be available from SSWD and because additional distribution and treatment facilities may be required, there is not reasonable certainty that these water supplies would be available to serve the long-term demands of the proposed project.

Impact Conclusion

According to the Zone 40 WSMP, Zone 41 UWMP, and the City's WSA, reliable, long-term water supplies would be available to serve Zone 40 through 2030. SCWA has existing secured surface-water supplies, groundwater, and recycled water, as well as the right to GET-Remediated Water supplies pursuant to the Aerojet-County agreement, and is currently pursuing entitlements for appropriative water supplies (i.e., future planned water supplies Because SCWA is in the process of securing the appropriative water, transfer water and POU water supplies, SCWA does not currently control enough water to support build-out of all of Zone 40. SCWA does, however, currently control sufficient water to reliably serve the entire Rio del Oro project area. Although the Rio del Oro applicants may have to compete, on a first-come, first-served basis for existing firm supplies such as the Fazio and SMUD CVP contract supplies and groundwater pumped at levels no greater than the negotiated sustainable yield for the Central Basin as determined under the Water Forum Agreement, such supplies are considered reliable and, moreover, are only necessary to serve a small portion of the demand for the project (1,500 afy). The Rio del Oro project will receive the greater part of its water (7,391 afy) from the more than 15,000 afy of GET Remediated Water available to serve the project based on SCWA's agreement with Aerojet. Moreover, the unique legal limitations on SCWA's use of GET water allow the "Aerojet lands" to make a claim

on that water that other portions of the Zone 40 service area cannot make. SCWA's water supplies for the Rio del Oro project are therefore considered reliable, and there is reasonable certainty that these water supplies would be available for the project area. Therefore, there is reasonable certainty that permanent water supplies needed to serve the project at buildout would be available. This impact is considered **direct** and **less than significant**. **No indirect** impacts would occur. ***[Similar]***

Although there is a high degree of certainty that SCWA would be able to supply the project in the long term, there is a small amount of uncertainty about whether the infrastructure necessary to deliver the long-term water supplies needed to serve the project would be successfully implemented (see Impact 3.5-6 below). 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 in the long term.

Mitigation Measure: No mitigation measures are required.

Applies to: NP.

Under the No Project Alternative, mining activities at the project site, which are not part of the Rio del Oro project, would continue under existing conditional use permits—one originally issued by the County, and the other issued by the City—and possibly under one or more future individual implementation permits expected to be issued by the City. Mining activities would not require the provision of new long-term, permanent water supplies or conveyance facilities.

Because no development would occur under the No Project Alternative, permanent water supplies and associated infrastructure would not be required; thus, **no direct** or **indirect** impacts would occur. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

Impact 3.5-6: Need for Water Conveyance Facilities to Deliver Long-Term Water Supplies. *Project implementation would require construction of on-site water conveyance facilities to deliver water from SCWA's off-site conveyance facilities to the project site. The permanent long-term water supplies cannot be delivered to the project site until off-site water conveyance facilities identified in the Zone 40 WSMP (i.e., the Vineyard Surface WTP, the FRWP, and the NSAPP) have been constructed and are online.*

Applies to: PP, HD, IM.

A preliminary on-site water system has been designed as a looping system following the major street alignments (see revised 2006 DEIR/DEIS Exhibit 2-9a, attached to this Recirculated DEIR/Supplemental DEIS). 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. The on-site water system under the High Density and Impact Minimization Alternatives would be similar to the system under the Proposed Project Alternative. The internal water transmission system would be developed in phases, and the on-site distribution system would be adequately sized to accommodate project-related water demands and fire-flow demands.

The project would be served by SCWA Zone 40 through its conjunctive-use water supply system. SCWA has entitlements to surface water, is a groundwater appropriator, and has entered into an agreement with Aerojet to beneficially reuse GET-Remediated Groundwater (see Impact 3.5-4 above). The GET-Remediated Water is already being discharged to the American River at quantities sufficient to meet this increased demand from Rio del Oro and could be made available to SCWA at FRWP through implementation of the Aerojet-County

Agreement, a modified agreement, or a new agreement. The permanent long-term water supply cannot be delivered to the project site until water conveyance facilities identified in the Zone 40 WSMP (i.e., the Vineyard Surface WTP, the FRWP, and the NSAPP) have been constructed and are online. Water would be diverted from the Sacramento River via the FRWP facilities and conveyed to the Vineyard Surface WTP for treatment and delivery to SCWA Zone 40. After the water is treated at the Vineyard Surface WTP, it would be delivered to the project site through the NSAPP.

The NSAPP would be required to convey water treated at the Vineyard Surface WTP to the project site. The NSAPP is still in the planning and design phase. The preferred alignment would begin at the Vineyard Surface WTP and continue east along Florin Road. At the intersection of Florin Road and Eagles Nest Road, the pipeline would head north along Eagles Nest Road, which transitions into Zinfandel Road at the intersection of Douglas Road. The pipeline would continue north along Zinfandel Road to a storage tank and pump station just north of Douglas Road and adjacent to the east side of the Folsom South Canal. Water would be conveyed from the pump station to Douglas Road, where the pipeline would turn east and follow Douglas Road to Sunrise Boulevard, where it would tie into the existing Zone 40 system near the southwest corner of the project site. This pipeline was identified in the 2005 Zone 40 WSMP EIR, and the environmental impacts of the construction of the pipeline were analyzed at a programmatic level in the Zone 40 WSMP. The NSAPP has not undergone CEQA review, but it is expected that an EIR for the project will be prepared in 2008. SCWA anticipates that this pipeline would not be in service until 2014. SCWA is securing necessary funding for the NSAPP. The project applicant(s) may enter into an advanced funding agreement with SCWA Zone 40 to expedite construction of the NSAPP. Impacts resulting from construction of the NSAPP could include, but are not limited to, short-term impacts on air quality associated with construction, potential short-term construction impacts on special-status plants and wildlife or sensitive habitats; potential disturbance of known or unknown cultural or paleontological resources, short-term increases in erosion and stormwater runoff, and short-term increases in construction noise levels.

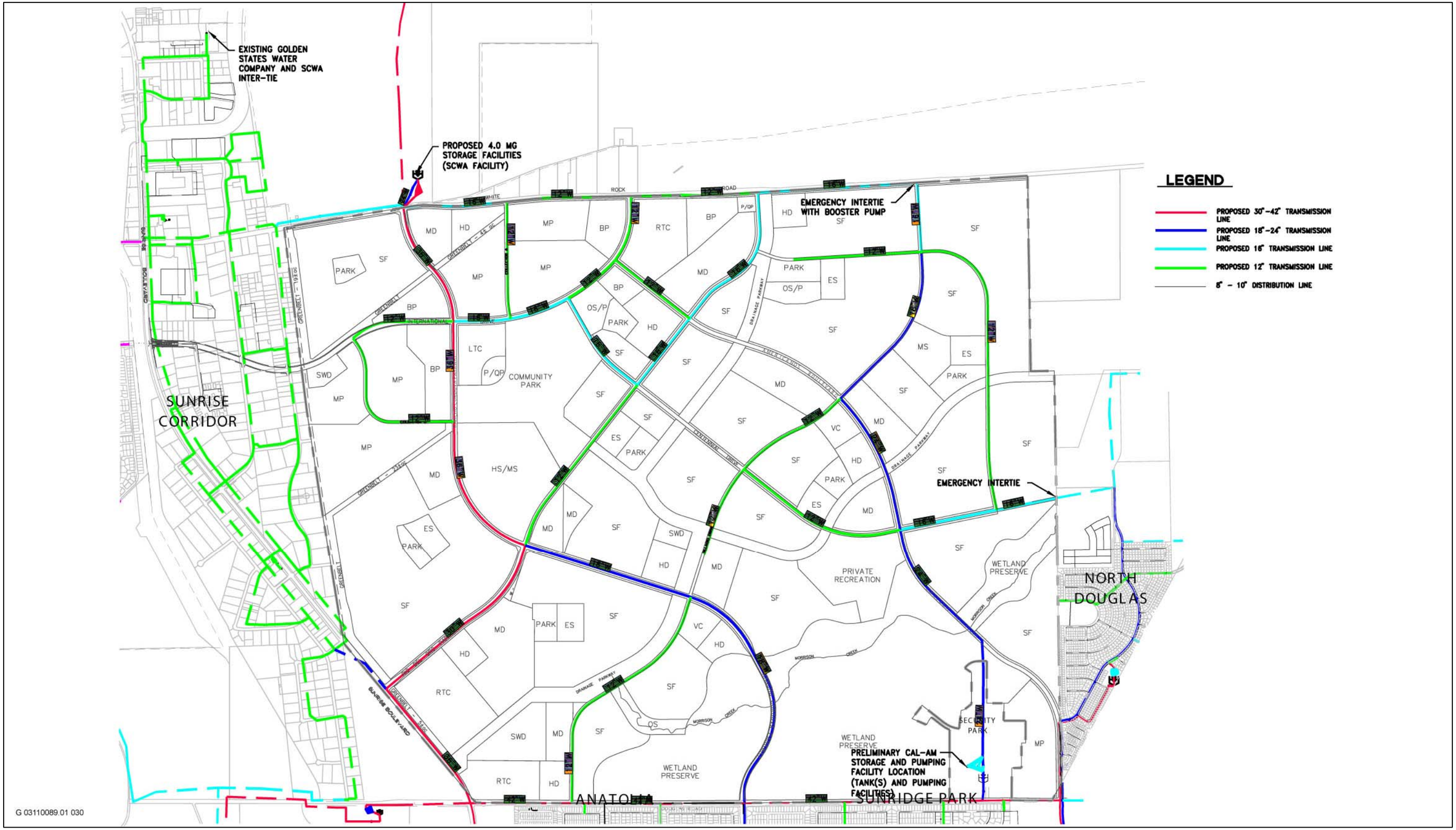
Because the water-supply and conveyance facilities identified in the Zone 40 WSMP (i.e., the Vineyard Surface WTP, the FRWP, and the NSAPP) must be constructed to serve the project at complete buildout along with other proposed development in the region, development of the project would contribute to the environmental impacts of the Zone 40 WSMP, as identified in the EIR for the Zone 40 WSMP, and the environmental impacts of the FRWP, as identified in the FRWP EIR/EIS. However, these impacts would occur even without development of the project because the water supplies and conveyance facilities identified in the Zone 40 WSMP are also required to serve regional development and are needed whether or not the project is implemented.

Because there is a relationship between the project and the need for water supplies and conveyance facilities identified in the Zone 40 WSMP, approval of the project contributes indirectly to the related impacts. The environmental impacts associated with the construction of facilities identified in the Zone 40 EIR and the FRWP EIR/EIS are discussed below.

Zone 40 Water Supply Master Plan EIR

SCWA prepared a DEIR to analyze the impacts of implementing the Zone 40 WSMP. The DEIR was prepared and circulated for public review in November 2003 (SCH #95082041), and the FEIR was certified and the master plan was approved in 2005. As part of the Zone 40 WSMP, impacts from construction of the Vineyard Surface WTP and the NSAPP, which would serve the Rio del Oro project, were analyzed at the programmatic level. Because these facilities would need to be constructed to serve the project, the environmental impacts of these facilities are associated with development of the project. However, these impacts would also occur without development of the project because these facilities are required to serve regional development and would be needed whether or not the project is developed.

Because there is a relationship between the project and the need for these water facilities, approval of the project contributes indirectly to the related impacts. As described in the Zone 40 EIR, construction of these water facilities would result in several environmental impacts, most of which would be reduced to a less-than-



Source: Wood Rodgers 2007

On-Site Water Supply Facilities

EXHIBIT 2-9a

Rio del Oro Specific Plan Project Recirculated DEIR/Supplemental DEIS
City of Rancho Cordova and USACE
P 3T089.01 01/08

0 750 1600
FEET
NORTH

EDAW

significant level through implementation of mitigation by SCWA. Impacts that would remain significant or potentially significant after implementation of mitigation (i.e., significant and unavoidable), or for which no feasible mitigation is available to reduce impacts to a less-than-significant level, were identified as follows:

- direct visual impacts associated with operation of new facilities;
- potential short-term impacts on air quality associated with construction of new facilities (because it was unknown whether mitigation measures would be adequate to reduce impacts);
- short-term noise impacts associated with construction of new facilities;
- potential long-term stationary-source noise impacts from operation of new facilities;
- potential short-term construction impacts and long-term operational impacts on special-status plants and wildlife, if any species are identified in the locations where specific facilities are constructed;
- potential short-term construction impacts and long-term operational impacts on sensitive habitats, if any are identified in the locations where specific facilities are constructed; and
- potential loss of habitat from development of facilities that would otherwise be included in the proposed *South Sacramento County Habitat Conservation Plan* (SSCHCP), if facilities are developed outside the 2030 Study Area for the Zone 40 WSMP.

Freeport Regional Water Project EIR/EIS

The FRWP involves construction of intake facilities and pipelines to deliver water from the intake facility to Zone 40's Vineyard Surface WTP. A DEIR/DEIS was prepared and circulated for public review in July 2003 (SCH #2002032132), and the FEIR was certified in April 2004. Subsequently, FRWA completed ESA compliance in fall 2004, leading to Reclamation's issuance of the record of decision in January 2005. Minor adjustments to the project were been made after the FEIR was certified, and a supplemental IS/MND was prepared and circulated for public review in February 2006. The supplemental IS/MND was adopted in March 2006. The project is currently under construction and estimated to be operation in late 2009 or early 2010.

Because these facilities would need to be constructed to serve the project, the environmental impacts of these facilities are associated with development of the project. However, these impacts would also occur without development of the project because the FRWP is required to serve regional development and would be needed whether or not the project is developed.

Because there is a relationship between the Rio del Oro project and the need for these water facilities, approval of the project contributes indirectly to the related impacts. As described in the FRWP EIR/EIS, construction of these water facilities would result in several environmental impacts, most of which would be reduced to a less-than-significant level through implementation of mitigation by SCWA and EBMUD. Impacts that would remain significant or potentially significant after implementation of mitigation (i.e., significant and unavoidable), or for which no feasible mitigation is available to reduce impacts to a less-than-significant level, were identified as follows:

- loss of whitewater boating on the upper Mokelumne River's Electra Run,
- loss of whitewater boating on the upper Mokelumne River between Middle Bar Bridge and the State Route 49 Bridge,
- short-term increases in construction noise levels during daytime hours,

- exposure of noise-sensitive land uses to general construction noise at night,
- increase in noise levels from facility operation, and
- changes in visual resources from inundation of the area upstream of the existing Pardee Reservoir (upper Mokelumne River).

Impact Conclusion

Because the infrastructure required for water conveyance facilities necessary to serve the Proposed Project, High Density, and Impact Minimization Alternatives has not been constructed, nor have final design plans and specifications been submitted, this impact is considered **direct** and **potentially significant**. In addition, the project would contribute to **indirect** and **direct significant and unavoidable** impacts associated with the future construction of water supplies and conveyance facilities identified in the Zone 40 WSMP (i.e., Vineyard Surface WTP, the FRWP, and the NSAPP) that would be needed to serve the project and other regional development. ***[Similar]***

Mitigation Measure: Implement Mitigation Measure 3.5-3.

Implementation of Mitigation Measure 3.5-3 would reduce direct, potentially significant impacts under the Proposed Project, High Density, and Impact Minimization Alternatives related to on-site and off-site water conveyance facilities to a **less-than-significant** level, because 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. If on-site or off-site water conveyance facilities are delayed or not constructed, implementation of Mitigation Measure 3.5-3 would cause project development to be curtailed because existing water supplies may not be available to meet the demands of the project. Impacts associated with permanent curtailment of development are discussed in Impact 3.5-7. Impacts associated with temporary curtailment of development are discussed in Impact 3.5-4 above.

Regarding expansion of Zone 40 water supply facilities and infrastructure, implementation of mitigation measures to reduce impacts is the responsibility of Zone 40. Such measures would be implemented in accordance with the certified Zone 40 EIR prepared by SCWA. Impacts on seven issue areas would remain **significant and unavoidable** after implementation of mitigation.

Similarly, implementation of mitigation measures to reduce impacts related to the expansion of the FRWP water supply facilities and infrastructure is the responsibility of SCWA and EBMUD. Such measures would be implemented in accordance with the certified FRWP EIR/EIS prepared by FRWA. Impacts on six issue areas would remain **significant and unavoidable** after implementation of mitigation.

Applies to: NF.

Because the project applicant(s) would not be obtaining a permit from USACE under Section 404 of the Clean Water Act, they would not be able to install water-supply infrastructure in the southern portion of the project site that is also necessary to serve proposed areas of other urban development in Rancho Cordova. The project proposes a 24-inch water-supply pipeline that would be installed along Americanos Boulevard and pass through the Security Park (not part of the proposed Rio del Oro project); this pipeline is necessary to provide connectivity with Cal-Am's storage and pumping facility at the corner of Douglas Road. Furthermore, infrastructure planning for future water supply requires that a water-supply pipeline be installed in a north-south direction through the Rio del Oro project site because in the future, water for the *Sunrise Douglas Community Plan*, *SunCreek Specific Plan*, *Rio del Oro Specific Plan*, *Easton Specific Plan*, and *Westborough Specific Plan* areas would be provided from the FWTP. Therefore, water-supply pipelines need to be installed along Jaeger Road south of Douglas Road,

along Rancho Cordova Parkway (the extension of Jaeger Road) through the Rio del Oro project site, and continuing north across White Rock Road to provide future water service for planned area development.

Under the No Federal Action Alternative, installation of water-supply pipelines on the project site would differ from those proposed for installation under the Proposed Project, High Density, and Impact Minimization Alternatives. The southern portion of the water supply pipeline that would otherwise be installed in a north-south direction through the Rio del Oro project site would be eliminated, potentially affecting the capacity of off-site infrastructure. Water conveyance facilities for the *Sunrise Douglas Community Plan*, *SunCreek Specific Plan*, *Easton Specific Plan*, and *Westborough Specific Plan* areas would be provided on the periphery of the project site through Sunrise Boulevard to the corner of Douglas Road. Therefore, water conveyance facilities planned for and approved in the Zone 40 WSMP for these roads would likely not have sufficient capacity to serve these developments and could require upgrades to provide an adequate level of service. Upgrades to these facilities could be inconsistent with SCWA's WSMP; therefore, impacts associated with the No Federal Action Alternative would be greater than those of the other project alternatives.

It is possible that water-supply pipelines could still be installed along what would have been the southern ends of Rancho Cordova Parkway and Americanos Boulevard, following the same alignment shown in the 2006 DEIR/DEIS (see revised Exhibits 2-9a through 2-9c attached to this Recirculated DEIR/Supplemental DEIS). Other potential alignments for water-supply pipelines could be designed to head west from the southern portion of the project site to Sunrise Boulevard and/or head east to Douglas Road. This alignment would connect to existing infrastructure on Sunrise Boulevard and/or Douglas Road. No plans showing this proposed water-supply infrastructure have been developed or analyzed.

Installation of water-supply pipelines through the designated Natural Resources areas would be required, using horizontal directional drilling techniques to avoid features considered jurisdictional by USACE in the southern portion of the project site. Horizontal directional drilling techniques require large construction areas to accommodate pipes and need additional construction equipment for tunneling or boring. Operation and maintenance of water conveyance facilities through the designated Natural Resources areas would be substantially more difficult and expensive because of a lack of access to the pipeline. Therefore, impacts associated with the No Federal Action Alternative would be greater than those of the other project alternatives.

The project would be served by SCWA Zone 40 through its conjunctive-use water supply system. SCWA has entitlements to surface water, is a groundwater appropriator, and has entered into an agreement with Aerojet to beneficially reuse GET-Remediated Groundwater (see Impact 3.5-4 above). The permanent long-term water supply cannot be delivered to the project site until water conveyance facilities identified in the Zone 40 WSMP (i.e., the Vineyard Surface WTP, the FRWP, and the NSAPP) have been constructed and are online. Water would be diverted from the Sacramento River via the FRWP facilities and conveyed to the Vineyard Surface WTP for treatment and delivery to SCWA Zone 40. After the water is treated at the Vineyard Surface WTP, it would be delivered to the project site through the NSAPP.

The NSAPP would be required to convey water treated at the Vineyard Surface WTP to the project site. The NSAPP is still in the planning and design phase. The preferred alignment would begin at the Vineyard Surface WTP and continue east along Florin Road. At the intersection of Florin Road and Eagles Nest Road, the pipeline would head north along Eagles Nest Road, which transitions into Zinfandel Road at the intersection of Douglas Road. The pipeline would continue north along Zinfandel Road to a storage tank and pump station just north of Douglas Road and adjacent to the east side of the Folsom South Canal. Water would be conveyed from the pump station to Douglas Road, where the pipeline would turn east and follow Douglas Road to Sunrise Boulevard, where it would tie into the existing Zone 40 system near the southwest corner of the project site. This pipeline was identified in the 2005 Zone 40 WSMP EIR, and the environmental impacts of the construction of the pipeline were analyzed at a programmatic level in the Zone 40 WSMP. The NSAPP has not undergone CEQA review; however, SCWA expects that an EIR for the NSAPP will be prepared in 2008. The date when this pipeline would be in service is currently unknown. SCWA is securing necessary funding for the NSAPP. The project applicant(s)

may enter into an advance-funding agreement with SCWA Zone 40 to expedite construction of the NSAPP. Impacts resulting from construction of the NSAPP could include, but are not limited to, short-term impacts on air quality associated with construction, potential short-term construction impacts on special-status plants and wildlife or sensitive habitats; potential disturbance of known or unknown cultural or paleontological resources, short-term increases in erosion and stormwater runoff, and short-term increases in construction noise levels.

Because the water supplies and conveyance facilities identified in the Zone 40 WSMP (i.e., the Vineyard Surface WTP, the FRWP, and the NSAPP) will need to be constructed to serve the project at complete buildout along with other proposed development in the region, development of the Rio del Oro project would contribute to the environmental impacts of the Zone 40 WSMP, as identified in the EIR for the Zone 40 WSMP, and the environmental impacts of the FRWP, as identified in the FRWP EIR/EIS. However, these impacts would occur even without development of the project because the water-supply and conveyance facilities identified in the Zone 40 WSMP and the FRWP are also required to serve regional development and are needed whether or not the project is implemented.

Because there is a relationship between the project and the need for water supplies and conveyance facilities identified in the Zone 40 WSMP and the FRWP, approval of the No Federal Action Alternative contributes indirectly to the related impacts. As described in the EIR for the Zone 40 WSMP and the FRWP EIR/EIS, construction of these water facilities would result in several environmental impacts, most of which would be reduced to a less-than-significant level through implementation of mitigation. However, seven impacts were identified in the EIR for the Zone 40 WSMP and six impacts were identified in the FRWP EIR/EIS that would remain significant after implementation of mitigation.

Because the infrastructure required for water conveyance facilities necessary to serve the No Federal Action Alternative has not been constructed, nor have final design plans and specifications been submitted, this impact is considered **direct** and **potentially significant**. In addition, the No Federal Action Alternative would contribute to **indirect** and **direct significant and unavoidable** impacts associated with the future construction of water supplies and conveyance facilities identified in the Zone 40 WSMP (i.e., the Vineyard Surface WTP, the FRWP, and the NSAPP) that would be needed to serve the project and other regional development. ***[Greater]***

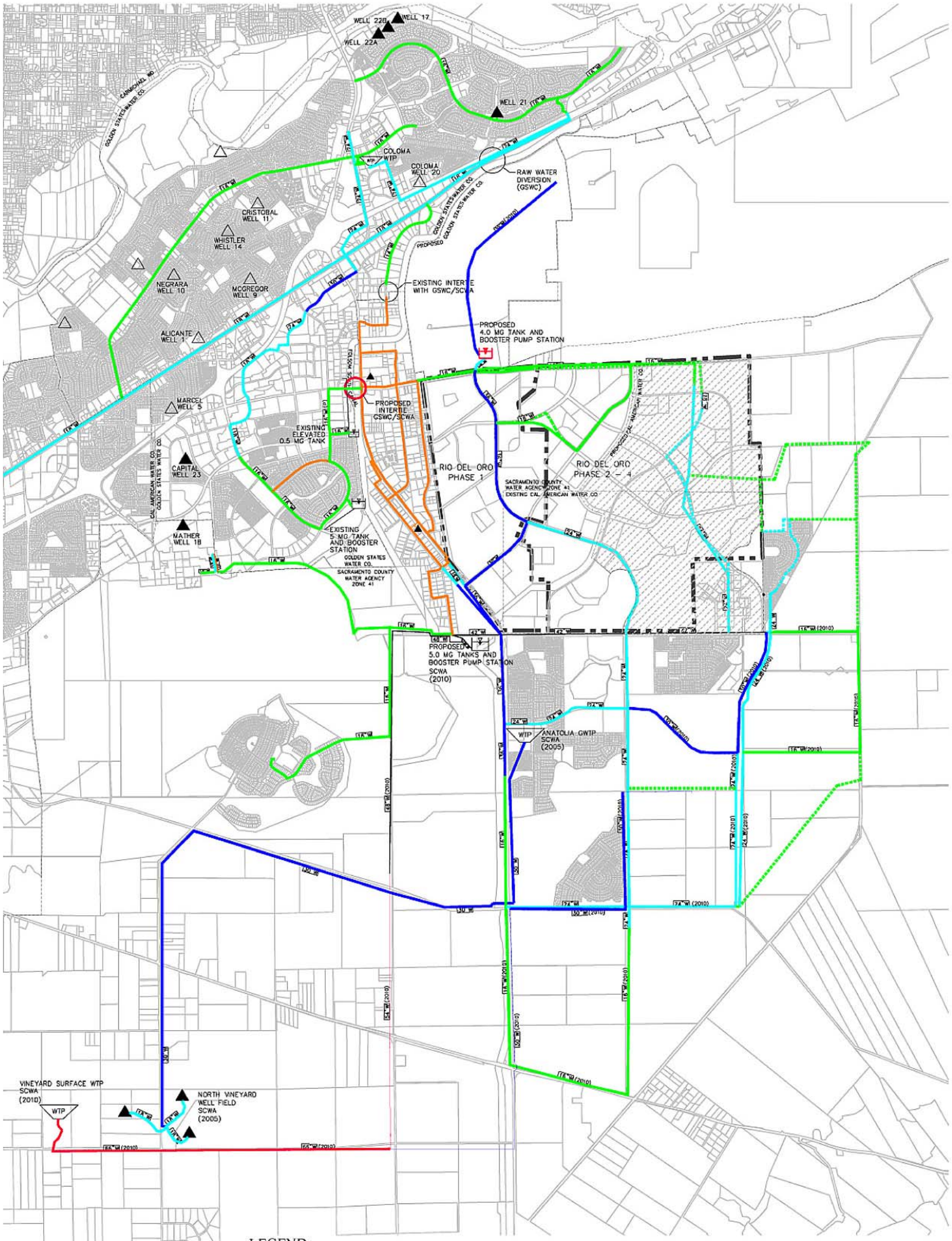
Mitigation Measure: Implement Mitigation Measure 3.5-3.

Implementation of Mitigation Measure 3.5-3 would reduce direct potentially significant impacts under the No Federal Action Alternative related to off-site water conveyance facilities because the construction and financing of water conveyance facilities sufficient to convey water supplies to subdivisions or nonresidential uses would be reasonably foreseeable 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. However, impacts would not be reduced to a less-than-significant level.

Implementation of Mitigation Measure 3.5-3 under the No Federal Action Alternative would result in indirect off-site impacts related to water supply to surrounding development in Rancho Cordova, as follows:

- Construction of new off-site alternative alignments of water conveyance facilities would be necessary to serve surrounding development. These alternative alignments would require separate CEQA review; therefore, the full extent of impacts cannot be determined. However, it is assumed that implementation of alternative pipeline alignments would result in significant impacts on biological resources, as well as significant construction-related impacts (i.e., construction-related traffic, air-quality emissions, water quality, and noise impacts).

- If new water conveyance facilities with alternative alignments could not be constructed off-site, temporary or permanent curtailment of planned development in the surrounding area could result from a lack of necessary water conveyance facilities. Curtailing planned off-site development could result in its own set of potentially



Source: Wood Rodgers 2007

Off-Site Water Supply Facilities, Full Project Build-out

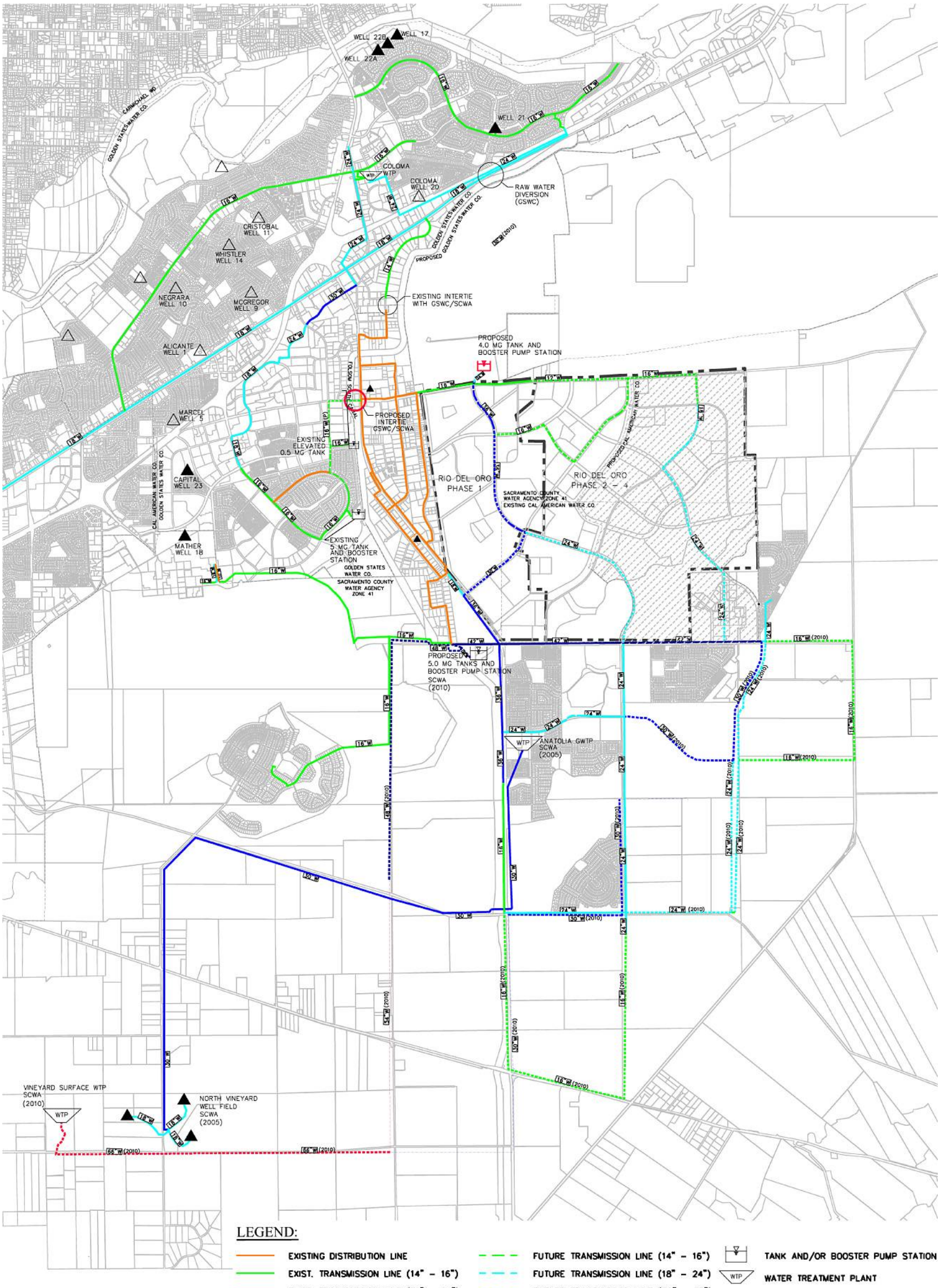
EXHIBIT 2-9b

Rio del Oro Specific Plan Project Recirculated DEIR/Supplemental DEIS
City of Rancho Cordova and USACE
P 3T089.01 01/08

0 2250 4500
FEET

NORTH

EDAW



Source: Wood Rodgers 2007

Off-Site Water Supply Facilities, Phase 1

EXHIBIT 2-9c

Rio del Oro Specific Plan Project Recirculated DEIR/Supplemental DEIS
City of Rancho Cordova and USACE
P 3T089.01 01/08

0 2250 4500
FEET

NORTH

EDAW

significant impacts, including a lack of funding that might be necessary to implement infrastructure (e.g., roads, sewer, and water) required on a regional or local level.

Identification of alternative water supply pipeline alignments would fall under the jurisdiction of the County and SWCA; therefore, neither the City nor the project applicant(s) could guarantee approval of these alternative pipeline alignments. Additionally, it is possible that these alternative alignments would be inconsistent with SWCA's WSMP and would be subject to separate CEQA compliance. For these reasons, this impact would remain **significant and unavoidable**. If the County, SWCA, and other potentially affected agencies cooperate in allowing the improvements to move forward, the impact would be classified as significant in the short term but eventually could be reduced to a less-than-significant level in the long term, depending on the outcome of the separate CEQA evaluation (if needed).

Regarding expansion of Zone 40 water supply facilities and infrastructure, implementation of mitigation measures to reduce impacts is the responsibility of Zone 40. Such measures would be implemented in accordance with the certified Zone 40 EIR prepared by SCWA. Impacts on seven issue areas would remain **significant and unavoidable** after implementation of mitigation.

Similarly, implementation of mitigation measures to reduce impacts related to the expansion of the FRWP's water-supply facilities and infrastructure is the responsibility of SCWA. Such measures would be implemented in accordance with the certified FRWP EIR/EIS prepared by SCWA. Impacts on six issue areas would remain **significant and unavoidable** after implementation of mitigation.

If on-site or off-site water conveyance facilities are delayed or not constructed, implementation of Mitigation Measure 3.5-3 would cause project development to be curtailed. Impacts associated with the curtailment of development are discussed in Impacts 3.5-4 and 3.5-7.

Applies to: NP.

Under the No Project Alternative, mining activities at the project site, which are not part of the Rio del Oro project, would continue under existing conditional use permits—one originally issued by the County, and the other issued by the City—and possibly under one or more future individual implementation permits expected to be issued by the City. Mining activities would not require the provision of new utilities or service systems.

Because no development would occur under the No Project Alternative, permanent water supplies and associated infrastructure would not be required; thus, **no direct** or **indirect** impacts would occur. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

Impact 3.5-7: Permanent Curtailment of Project Development. *Water supplies would be available to meet the project's long-term water demands once the long-term water supply conveyance facilities identified in the Zone 40 WSMP (i.e., Vineyard Surface WTP, FRWP, and NSAPP) have been constructed and are online. While there is a reasonable likelihood that SCWA has water to supply the project in the long term, there is uncertainty regarding whether the infrastructure necessary to deliver the long-term water supplies needed to serve the project would successfully be implemented, and a permanent curtailment in project development could occur.*

Applies to: PP, HD, IM, NF.

According to the Zone 40 WSMP, the Zone 41 UWMP, and the City's water-supply evaluation, water supplies would be available to meet the project's water demands at build-out (see Impact 3.5-5). However, permanent long-term water supply cannot be delivered to project until the long-term water supply conveyance facilities identified in the Zone 40 WSMP (i.e., Vineyard Surface WTP, FRWP, and NSAPP) have been constructed and

are online. If the long-term conveyance facilities (i.e., Vineyard Surface WTP, FRWP, and NSAPP) are delayed or not constructed, existing water supplies may not be available to meet the demands of the project. Under such a scenario, the Rio Del Oro project may not build out.

Implementation of Mitigation Measures 3.5-2 and 3.5-3 would require the City to make a factual showing that demonstrates the availability of a water supply from a public water system and adequate water conveyance facilities for the amount of development that would be authorized by the approval or entitlement at issue. If the long-term conveyance facilities (i.e., Vineyard Surface WTP, FRWP, and NSAPP) are delayed or not constructed, implementation of these mitigation measures would cause project development to be permanently curtailed. Although there is a very low likelihood that curtailment of the long-term water supply would occur due to needed infrastructure not being constructed, because uncertainties remain, the following analysis discusses the potential environmental effects of a permanent curtailment of development. Such curtailment could also result from climatic or other environmental conditions that are unforeseen and cannot be predicted or from unexpected regulatory or legal developments. Generally the potential impacts of a permanent curtailment can be grouped into three categories:

- **Infrastructure.** Impacts associated with the construction of new infrastructure to meet increases in demand resulting from new development.

- **Pattern of Development.** Impacts associated with the pattern of development such as land use patterns that are discontinuous, and the effects such patterns may have on land use compatibility and other resources.

- **Economic Considerations.** CEQA documents typically do not include an analysis of economic impacts of a project, unless the economic impact would bring about physical changes to the environment (CEQA Guidelines Section 15131). However, consistent with CEQA's informational purpose, a brief discussion of such effects is provided below.

Infrastructure

New on-site infrastructure—water-supply infrastructure, wastewater conveyance facilities, and electrical, natural gas, and communications transmission lines—would be constructed only as necessary to meet the demands of each phase, or only as necessary to serve those areas with Zone 40 for which adequate long-term supplies are available. Specific impacts related to these utilities and service systems are discussed below. The following City entitlements are required to ensure, in part, that infrastructure is developed before any given phase of the project is developed.

- **Public Facilities Financing Plan.** This plan would be prepared and included as part of the *Rio del Oro Specific Plan* and would be adopted by the City Council on approval of the specific plan. The financing plan would define the specific mechanisms required to fund capital costs of all infrastructure necessary as a result of specific plan buildout. The plan would define funding for the maintenance of new infrastructure and public services needed by the future residents and businesses located within the project site.

- **Public Facilities Infrastructure/Phasing Plan.** This plan would be adopted by the City Council on approval of the specific plan. The plan would provide specific details about the phasing, sizing, alignment and location, cost estimates, and construction timing requirements for each phase of the project site.

- **Development Agreement.** The project applicant(s) and City intend to enter into a Development Agreement at the time the specific plan is adopted. Although the agreement is not yet drafted, the document in its final form will likely set forth many, if not all, of the applicants' obligations to the City and other public agencies with regard to the project, including but not limited to construction, maintenance, and financial responsibilities. The agreement would also set forth the City's other project obligations, including, but not limited to, processing of subsequent entitlement applications, formation of financing mechanisms (including Mello-Roos districts), and the vesting of development entitlements. In accordance with applicable provisions of the

Government Code, both the City Planning Commission and City Council would hold public hearings on the proposed Development Agreement before the City Council takes any action.

In addition, to move forward with a specific phase, the project applicant(s) would submit one or more tentative subdivision maps, with accompanying improvement plans, for each phase. At that time, the City would require the applicant(s) to comply with the performance standards described in the *Rio del Oro Specific Plan* and mitigation measures set forth in the EIR/EIS and incorporated into the specific plan for each tentative subdivision map/improvement plan, as conditions of approval and/or as a condition of the Development Agreement.

Although a permanent decrease in available water would cause development to be curtailed, the City would not approve tentative maps or issue building permits for development phases without an available infrastructure in place to serve that phase. As a result, any existing project development constructed or under construction at the time of the curtailment would have adequate water-supply and other infrastructure and service; therefore, infrastructure-related impacts of long-term curtailment of development would be **less than significant**. No mitigation measures are required.

Because the capacity of the regional infrastructure and the level of proposed development at some future time are unknown, the potential impacts on regional infrastructure are speculative. However, implementation of the requirements under Mitigation Measures 3.5-2 and 3.5-3 through City General Plan Actions ISF.2.4.1 and ISF.2.4.2 ensures approval of tentative and final subdivision maps for projects within the City and the Zone 40 service area could only be approved based on proof of adequate water supplies and infrastructure to meet the demands created by new development. In addition to the City of Rancho Cordova, the City of Elk Grove and the County, both within the service area of Zone 40, implement similar general plan policies. These policies and actions would ensure infrastructure would not be constructed, then abandoned because of lack of water supplies for any proposed new development. Rather, infrastructure associated with approved subdivision maps would be constructed only if sufficient water supplies exist. For these reasons, the impacts of long-term curtailment of development on regional infrastructure would be less than significant. No mitigation measures are required.

Pattern of Development

Buildout of the project site would occur in a contiguous manner and would not result in a “checkerboard” pattern of development, which could result in developed land uses isolating undeveloped parcels. Therefore, it is not expected that developed land uses adjacent to undeveloped parcels would be converted to other uses because of curtailment in development, and impacts associated with patterns of development would be **less than significant**.

Economic Considerations

The long-term curtailment of water leading to the curtailment of development of the project site would be part of a Zone 40 curtailment in development, because reduction in the permanent water supply would not occur on a project-by-project basis. The reduction in the availability of water could result in a region-wide downturn in economic conditions. Lowered economic growth could have substantial impacts to local jurisdictions in the provision of services (e.g., reduced funding for police and fire protection services) and maintenance of existing service infrastructure (e.g., roads, transportation, water, stormwater, and sewage). The curtailment of water supply could serve as a catalyst for a revision in City population projections, with population growth shifting to areas with better water supplies, if such areas were to exist.

While a reduced population and the curtailment in development would lessen the pressure for the potential conversion of farmland and wildlife habitat, constraints placed on development by the reduced level of available water could also place constraints on continued irrigated agricultural practices in the region. It would be speculative, however, to try to predict the level of impact that would occur as the remaining urban and agricultural interests vie for the available water supplies. In general, though, urban water users can typically afford to pay more for water than agricultural users, with the likely result that over time urban users would out-bid and out-compete agricultural users for limited supplies. This trend is already occurring throughout the Central Valley.

Likewise, wildlife habitat would not be subject to development pressures; however, there would be pressure to divert water currently used to maintain biological resources to supply the region's population. Even so, compared with the owners of agricultural lands, the entities managing habitat lands, and especially those preserving habitat for special-status species, might enjoy comparatively more legal protections that might allow them to compete on more favorable terms with urban uses than agricultural users are able to do.

Absent more concrete cause and effect, the economic effects described above are not treated as significant effects on the environment, consistent with CEQA Guidelines Section 15131. Any possible environmental effects that could result from economic effects are too speculative and attenuated to form the basis for concrete impact characterizations and mitigation measures.

Because any existing project development at the time of curtailment would have adequate water supply infrastructure and service; because existing City of Rancho Cordova, County, and City of Elk Grove general plan policies require that new development within the Zone 40 service area can only be approved based on proof of adequate water supplies and infrastructure; and because development of the project site would occur in a contiguous manner and would not result in developed land uses isolating undeveloped parcels, impacts resulting from the permanent curtailment of development would be **direct** and **less than significant**. **No indirect** impacts would occur. ***[Similar]***

Applies to: NP.

Under the No Project Alternative, mining activities at the project site, which are not part of the Rio del Oro project, would continue under existing conditional use permits—one originally issued by the County, and the other issued by the City—and possibly under one or more future individual implementation permits expected to be issued by the City. Mining activities would not require the provision of new long-term, permanent water supplies or conveyance facilities.

Because no development would occur under the No Project Alternative, permanent water supplies and associated infrastructure would not be required; thus, **no direct** or **indirect** impacts would occur. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

Impact 3.5-8: Use of Nonpotable-Water Supplies and Infrastructure. *Project implementation could result in the use of nonpotable-water supplies and infrastructure to provide landscaping and open space irrigation. Initially, the demands for nonpotable water would be met by the project's potable-water supplies. In the long term, it is assumed that future supplies of nonpotable water would be provided by SRCSD or by GET-Remediated Water facilities, when a sufficient supply of nonpotable water is available to meet project demands.*

Applies to: PP, HD, IM, NF.

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 major landscaping and open space areas within the project site would be irrigated via a recycled-water system that could be easily converted from a potable-water supply to a nonpotable-water at some future date.

The draft *Rio del Oro Specific Plan Non-Potable Water Study* (Wood Rodgers 2007b) addressed the viability of providing supplies of nonpotable water to the project site, identified on- and off-site infrastructure needs, and evaluated designs for consistency with the existing WSMP (Wood Rodgers 2007a).

Demands for nonpotable water were calculated based on land uses designated for commercial, school, park, public/quasi-public, and private recreation uses consistent with the Citywide Recycled Water Distribution Ordinance. The project's demands for nonpotable water at buildout were determined by applying an irrigated-surface-area factor to each proposed land use. The demands for nonpotable water under the Proposed Project Alternative are summarized in Table 3.5-20 below. The demands for nonpotable water under the High Density, Impact Minimization, and No Federal Action Alternatives are summarized in Tables 3.5-21, 3.5-22, and 3.5-23 below.

Table 3.5-20
Summary of Program Level 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	239	0.5	119	431
Schools	151	0.7	106	384
Community/neighborhood parks	169	0.9	152	550
Public/quasi-public/private recreation	64	0.5	32	116
Greenbelt/landscape corridor	92	0.9	83	300
Total	**715**		**492**	**1,781**

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).
Sources: Wood Rodgers 2007b, data compiled by EDAW in 2007

Table 3.5-21
Summary of Program Level Land Uses and Demands for Nonpotable Water—High Density Alternative

Land Use	Area (acres)[1]	Irrigated-Surface-Area Factor[2]	Site Area Irrigated (acres)	Water Demand (afy)[3]
Commercial	239	0.5	119	431
Schools	151	0.7	106	384
Community/neighborhood parks	169	0.9	152	550
Public/quasi-public/private recreation	64	0.5	32	116
Greenbelt/landscape corridor	92	0.9	83	300
Total	**715**		**492**	**1,781**

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).
Sources: Wood Rodgers 2007b, data compiled by EDAW in 2007.

Table 3.5-22
Summary of Program Level Land Uses and Demands for Nonpotable Water—Impact Minimization Alternative

Land Use	Area (acres)[1]	Irrigated-Surface-Area Factor[2]	Site Area Irrigated (acres)	Water Demand (afy)[3]
Commercial	235	0.5	118	427
Schools	142	0.7	99	358
Community/neighborhood parks	167	0.9	150	543
Public/quasi-public/private recreation	60	0.5	30	109
Greenbelt/landscape corridor	89	0.9	80	290
Total	**693**		**477**	**1,727**

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).
Sources: Wood Rodgers 2007b, data compiled by EDAW in 2007

Table 3.5-23
Summary of Program Level Land Uses and Demands for Nonpotable Water—No Federal Action Alternative

Land Use	Area (acres)[1]	Irrigated-Surface-Area Factor[2]	Site Area Irrigated (acres)	Water Demand (afy)[3]
Commercial	199	0.5	100	362
Schools	143	0.7	100	362
Community/neighborhood parks	182	0.9	164	594
Public/quasi-public/private recreation	48.5	0.5	25	91
Greenbelt/landscape corridor	80	0.9	72	261
Total	**652.5**		**461**	**1,670**

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).
Sources: Wood Rodgers 2007b, data compiled by EDAW in 2007

As shown above, the total projected demands for nonpotable water are 1,781 afy for the Proposed Project Alternative, 1,781 afy for the High Density Alternative, 1,727 afy for the Impact Minimization Alternative, and 1,670 afy for the No Federal Action Alternative. Initially, the demands for nonpotable water would be met by the project's supplies of potable water, which were identified and evaluated in the WSA prepared for the project and discussed in Impact 3.5-5 above. Therefore, impacts associated with nonpotable-water supplies would be the same as those identified for the potable-water supplies (see Impact 3.5-5). In the long term, it is assumed that future

supplies of nonpotable water would be provided by SRCSD or by GET-Remediated Water facilities, when a sufficient supply of nonpotable water is available to meet project demands.

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 3.5-2).

A planned expansion of the 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 five to ten years. Off-site facilities (i.e., infrastructure, storage tanks, and booster pumps), including those that would serve the proposed project, would be constructed by SRCSD through Phase II of the SRCSD Water Recycling Program.

Because the project would install a nonpotable-water system that would supply recycled water to the project site in the future when such water becomes available, the project would comply with the City's recycled-water ordinance; therefore, a **direct**, **less-than-significant** impact would occur. **No indirect** impacts would occur. ***[Similar]***

Applies to: NP.

Under the No Project Alternative, mining activities at the project site, which are not part of the Rio del Oro project, would continue under existing conditional use permits—one originally issued by the County, and the other issued by the City—and possibly under one or more future individual implementation permits expected to be issued by the City. Mining activities would not require new nonpotable-water systems and infrastructure to be provided.

Because no development would occur under the No Project Alternative, nonpotable-water supplies and infrastructure would not be required; thus, **no direct** or **indirect** impacts would occur. ***[Lesser]***

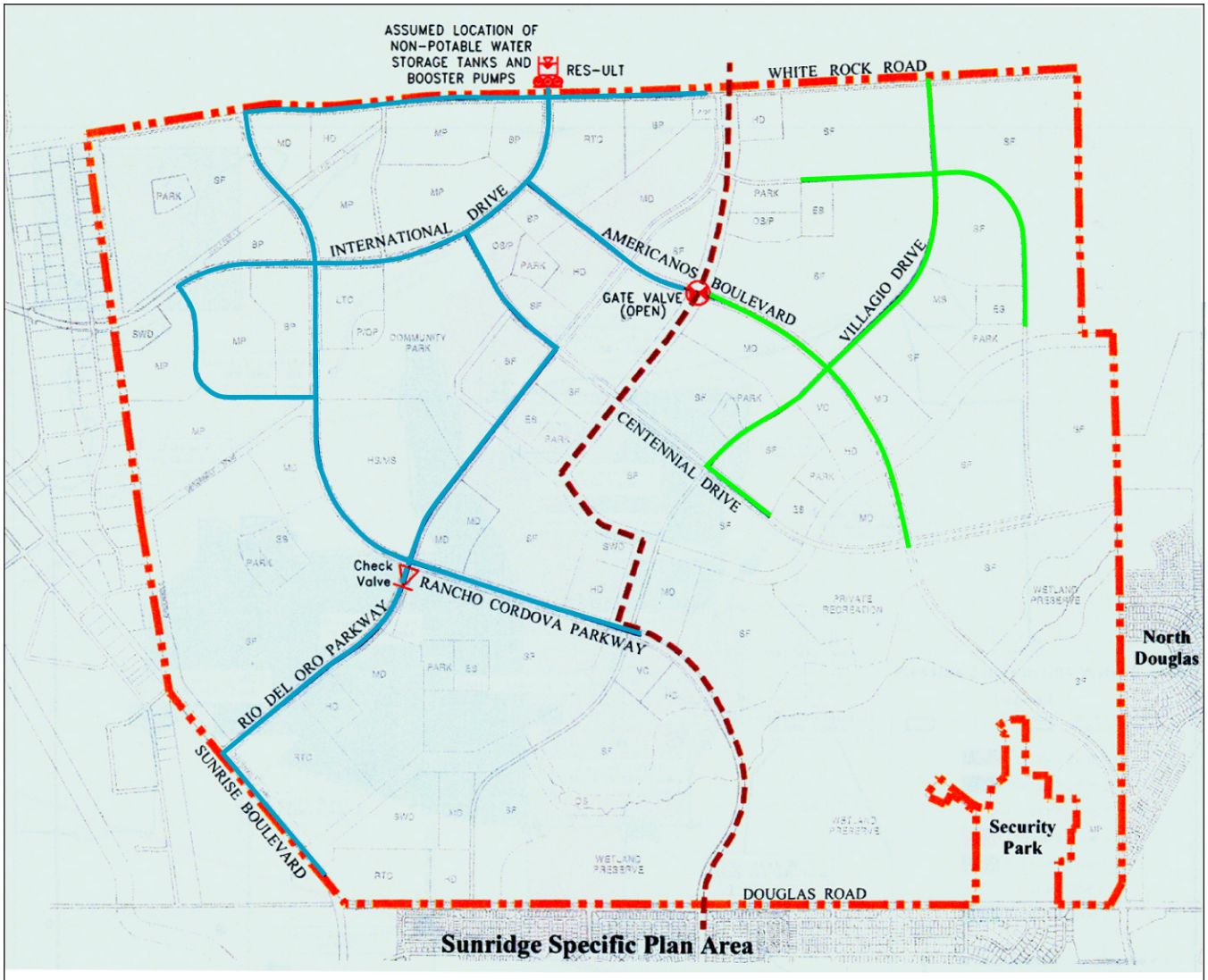
Mitigation Measure: No mitigation measures are required.

Impact 3.5-9: Effects of Global Climate Change on Surface-Water and Groundwater Supplies. *Project implementation would increase demand for water. Supplies of surface water and groundwater in California could be affected by global climate change.*

Applies to: PP, HD, IM, NF.

There are no formally adopted thresholds of significance for measuring effects of global climate change on a project. The primary purpose of a climate-change impact evaluation is to assess whether there are reasonably foreseeable consequences of global climate change that would result in substantial adverse environmental effects on the project, based both on the certainty or uncertainty of modeling results and on the physical nature of the effect.

The current state of the science of global climate change as related to water supply is presented above in Section 3.5.1, "Affected Environment." Based on the conclusions of current literature regarding California's ability to adapt to global climate change, it is reasonably expected that, over time, the state's water system will be modified to be able to handle the projected climate changes, even under dry and/or warm climate scenarios (DWR 2006).



LEGEND

- Rio del Oro Specific Plan Area Boundary
- Non-Potable Water Pressure Zone Boundary and SCWA Zone 41/Cal-Am Service Area Boundary
- Non-Potable Water Pipe - SCWA Zone 41
- Non-Potable Water Pipe - Cal-Am
- Non-Potable Water Storage Tank and Booster Pumps
- Check Valve
- Gate Valve

G 03110089.01 026

Source: Wood Rogers 2007

Rio del Oro Non-Potable Water System

EXHIBIT 3.5-2

Coping with climate change effects on California's water supply could come at a considerable cost; however, based on a thorough investigation of the issue, it is reasonably expected that statewide implementation of some, if not several, of the wide variety of adaptation measures available to the state will likely enable California's water system to reliably meet future water demands.

The project's water demands would be met through the conjunctive use of surface-water, groundwater, and remediated-water supplies identified in the Zone 40 WSMP. Although the Zone 40 WSMP does not address the effects of global climate change on the project's water supply, the Zone 40 WSMP, together with the WSA prepared for the project, represent the best available information regarding the effects of single dry, multiple dry, and critically dry years on the project's water supply. For that reason, this analysis relies on the Zone 40 WSMP and the project's WSA in addition to the climate change studies described above.

Zone 40 is located within the Central Basin. Preliminary studies indicate that the Sacramento Valley would experience only a small decline in groundwater levels as a result of global climate change, which would likely have little to no effect on available groundwater supplies that can be pumped from the Central Basin (Vicuña 2006). Groundwater may be used to supplement surface water supply to meet the needs of all Zone 40 water users, including the project, during multiple dry years; however, such future groundwater pumping is not likely to exceed sustainable yield. Moreover, 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. Total groundwater pumping (i.e., urban and agricultural pumping) within the Central Basin is approximately 248,500 afy, of which approximately 59,700 afy is currently pumped within Zone 40 (agricultural demand, 21,900 afy; urban demand, 37,800 afy). In wet and normal water years, SCWA would divert surface water from the American and Sacramento Rivers, consistent with CVP surface-water entitlement contracts. The underlying groundwater basin would be replenished in wet years as a result of this reliance on surface water. In dry and critically dry water years, SCWA's surface water could be reduced based on recommended dry-year cutback volumes outlined in the WFA.

IGSM modeling evaluated projected groundwater pumping by SCWA and all water users within the groundwater basin, 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 Zone 40's 2030 Study Area. This volume, combined with other pumping in the Central Basin (including pumping for groundwater remediation), would be below 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 northern Zone 40 would increase by about 4 feet, while those in southern Zone 40 area would decrease by about 1 foot under the Zone 40 WSMP. Stabilized groundwater elevations at the Central Basin's cone of depression under the modeled scenarios would range from approximately 50 feet below msl to 84 feet below msl, substantially higher than the WFA's projected level of 116–130 feet below msl. Groundwater pumping associated with the Zone 40 WSMP would not cause sustainable-yield recommendations to be exceeded. Therefore, groundwater levels at the Central Basin's cone of depression are projected to be higher than those determined to be acceptable to the Water Forum, and this impact was considered to be less than significant in the EIR for the Zone 40 WSMP.

California could potentially experience an increased number of single dry, multiple dry, and critically dry years as a result of global climate change. There is a great deal of uncertainty about impacts of climate change on future water availability in California, in terms of whether and where effects will occur and what the timing and severity of any such potential effect will be. This uncertainty makes it impossible to draw a meaningful conclusion about significance without substantial speculation. However, because of SCWA's extensive planning efforts in implementing the WFA, preparing the Zone 40 WSMP and Zone 41 2005 UWMP, and participating in the Central Sacramento County Groundwater Forum, SCWA has demonstrated that it has planned for both sufficient water supplies and the infrastructure necessary to meet Zone 40's buildout water demand through the year 2030. The projected Zone 40 demand is estimated to be 113,064 afy, including a portion of the water demand associated with the Rio del Oro project. SCWA is a groundwater appropriator and intends to continue to extract groundwater to meet its customers' demands, within the limits of the negotiated sustainable yield of the Central Basin. SCWA

has CVP surface-water contracts and is securing additional appropriative entitlements to surface water and wholesale water agreements that would allow SCWA to meet its projected 2030 water demands. In addition, SCWA has entered into an agreement with Aerojet and is negotiating updated agreements for the transfer of ownership rights of remediated water discharged by Aerojet.

As described above, SCWA intends to continue pumping groundwater, has secured most of its surface-water rights, has secured rights to beneficial reuse of remediated groundwater within its service area, and is proceeding with development of several water-supply treatment and conveyance facilities; therefore, SCWA's water supplies are considered to have a high reliability of being delivered, even considering the potential impacts on California's water supplies that may be caused by global climate change.

In addition, the project's entitlements to supplies of surface water are unlikely to be affected by global climate change because, as indicated by preliminary results from DWR (2006), impacts of climate change on water supply would be largely reflected in reduced exports south of the Delta, while existing Delta water-quality requirements would continue to be satisfied. It is therefore reasonable to consider that global climate change may have relatively less effect on the project's water supply because the project's supplies of surface water are based on existing surface-water entitlements and contract entitlements for in-basin use above the Delta. Therefore, the impacts of global climate change on the project's water supply would be **direct** and **less than significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

Applies to: NP.

Under the No Project Alternative, mining activities at the project site, which are not part of the Rio del Oro project, would continue under existing conditional use permits—one originally issued by the County, and the other issued by the City—and possibly under one or more future individual implementation permits expected to be issued by the City. Mining activities would not require new water supplies that could be affected by global climate change to be provided.

Because no development would occur under the No Project Alternative, there would be no relationship between global climate change and the project. **No direct** or **indirect** impacts would occur. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

PROJECT LEVEL (PHASE 1) IMPACTS AND MITIGATION MEASURES

Impact 3.5-10: Need for Initial Water Supplies for Development Phase 1A. *Project implementation would result in a need for an initial water supply to the project site for development Phase 1A until the SCWA facilities (i.e., the Vineyard Surface WTP, the FRWP, and the NSAPP) have been constructed and are online.*

Applies to: PP, HD, IM, NF, NP.

Impacts would be the same under Phase 1 as under the program (entire project site) level analysis for all alternatives. Refer to Impact 3.5-1 for further discussion of this impact.

Impact 3.5-11: Need for Initial Water Supplies for the Remaining Phase 1 Development. *Project implementation would result in a need for an initial water supply to the project site for the remaining Phase 1 development until the SCWA facilities (i.e., the Vineyard Surface WTP, the FRWP, and the NSAPP) have been constructed and are online.*

Applies to: PP, HD, IM, NF, NP.

Impacts would be the same under Phase 1 as under the program (entire project site) level analysis for all alternatives. Refer to Impact 3.5-2 for further discussion of this impact.

Implementation of Mitigation Measure 3.5-2 would reduce significant impacts related to the need for initial water supplies to serve the remaining Phase 1 development under the under the Proposed Project, High Density, Impact Minimization, and No Federal Action Alternatives to a **less-than-significant** level because the City would require 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.

If water supply for remaining Phase 1 development is not available because of unknown or unforeseeable events after approval and construction of the remaining Phase 1 development begins, implementation of Mitigation Measure 3.5-2 would result in the curtailment of development, resulting in a partially built-out project. Impacts associated with the curtailment of development are evaluated below in Impact 3.5-4.

Impact 3.5-12: Need for Initial Off-Site Water Conveyance Facilities. Implementation of development Phase 1 would result in increased demand for water conveyance facilities. *Because permanent water conveyance facilities would not be available until completion of the NSAPP, initial conveyance facilities would be required to supply and convey water to the project site.*

Applies to: PP, HD, IM, NF, NP.

Impacts would be the same under Phase 1 as under the program (entire project site) level analysis for all alternatives. Refer to Impact 3.5-3 for further discussion of this impact.

Implementation of Mitigation Measure 3.5-3 would reduce direct, potentially significant impacts under the Proposed Project, High Density, Impact Minimization, and No Federal Action Alternatives related to 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 3.4-3, 3.6-1, and 3.9-3 from the 2006 DEIR/DEIS would reduce indirect significant impacts under the Proposed Project, High Density, Impact Minimization, and No Federal Action Alternatives related to off-site water conveyance facilities to a **less-than-significant** level, because adverse impacts on cultural resources would be avoided, appropriate BMPs would be implemented to control erosion, and a traffic plan would be developed and implemented during construction activities.

Impact 3.5-13: Temporary Curtailment of Project Development. *Implementation of Mitigation Measure 3.5-2 (for initial supplies) would result in the temporary curtailment of development during the period of time when the project would be dependent on the initial water supplies, resulting in a partially built-out project.*

Applies to: PP, HD, IM, NF, NP.

Impacts would be the same under Phase 1 as under the program (entire project site) level analysis for all alternatives. Refer to Impact 3.5-4 for further discussion of this impact.

Implementation of the same mitigation measures called for in the 2006 DEIR/DEIS would reduce potentially significant and significant impacts related to curtailment of development for the same reasons elaborated in each section of Chapter 3, "Affected Environment, Environmental Consequences, and Mitigation Measures" of the 2006 DEIR/DEIS.

Impact 3.5-14: Increased Demand for Permanent Water Supplies. *Implementation of development Phase 1 would increase demand on the existing water supply.*

Applies to: PP, HD, IM, NF, NP.

Impacts would be the same under Phase 1 as under the program (entire project site) level analysis for all alternatives. Refer to Impact 3.5-5 for further discussion of this impact.

Impact 3.5-15: Need for Water Conveyance Facilities to Deliver Long-Term Water Supplies. *Project implementation would require construction of on-site water conveyance facilities to deliver water from SCWA's off-site conveyance facilities to the project site. The permanent long-term water supplies cannot be delivered to the project site until off-site water conveyance facilities identified in the Zone 40 WSMP (i.e., the Vineyard Surface WTP, the FRWP, and the NSAPP) have been constructed and are online.*

Applied to: PP, HD, IM.

Impacts would be the same under Phase 1 as under the program (entire project site) level analysis for all alternatives. Refer to Impact 3.5-6 for further discussion of this impact.

Implementation of Mitigation Measure 3.5-3 would reduce direct, potentially significant impacts under the Proposed Project, High Density, and Impact Minimization Alternatives related to on-site and off-site water conveyance facilities to a **less-than-significant** level, because 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. If on-site or off-site water conveyance facilities are delayed or not constructed, implementation of Mitigation Measure 3.5-3 would cause project development to be permanently curtailed because existing water supplies may not be available to meet the demands of the project. Impacts associated with permanent curtailment of development are discussed in Impact 3.5-7.

Regarding expansion of Zone 40 water supply facilities and infrastructure, implementation of mitigation measures to reduce impacts is the responsibility of Zone 40. Such measures would be implemented in accordance with the certified Zone 40 EIR prepared by SCWA. Impacts on seven issue areas would remain **significant and unavoidable** after implementation of mitigation.

Similarly, implementation of mitigation measures to reduce impacts related to the expansion of the FRWP water supply facilities and infrastructure is the responsibility of SCWA and EBMUD. Such measures would be implemented in accordance with the certified FRWP EIR/EIS prepared by FRWA. Impacts on six issue areas would remain **significant and unavoidable** after implementation of mitigation.

Applied to: NF.

Impacts would be the same under Phase 1 as under the program (entire project site) level analysis for all alternatives. Refer to Impact 3.5-6 for further discussion of this impact.

Implementation of Mitigation Measure 3.5-3 would reduce direct potentially significant impacts under the No Federal Action Alternative related to off-site water conveyance facilities because the construction and financing of water conveyance facilities sufficient to convey water supplies to subdivisions or nonresidential uses would be reasonably foreseeable 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. However, impacts would not be reduced to a less-than-significant level.

Implementation of Mitigation Measure 3.5-3 under the No Federal Action Alternative would result in indirect off-site impacts related to water supply to surrounding development in Rancho Cordova, as follows:

- Construction of new off-site alternative alignments of water conveyance facilities would be necessary to serve surrounding development. These alternative alignments would require separate CEQA review; therefore, the full extent of impacts cannot be determined. However, it is assumed that implementation of alternative pipeline alignments would result in significant impacts on biological resources, as well as significant construction-related impacts (i.e., construction-related traffic, air-quality emissions, water quality, and noise impacts).

- If new water conveyance facilities with alternative alignments could not be constructed off-site, temporary or permanent curtailment of planned development in the surrounding area could result from a lack of necessary water conveyance facilities. Curtailing planned off-site development could result in its own set of potentially significant impacts, including a lack of funding that might be necessary to implement infrastructure (e.g., roads, sewer, and water) required on a regional or local level.

Identification of alternative water supply pipeline alignments would fall under the jurisdiction of the County and SWCA; therefore, neither the City nor the project applicant(s) could guarantee approval of these alternative pipeline alignments. Additionally, it is possible that these alternative alignments would be inconsistent with SWCA's WSMP and would be subject to separate CEQA compliance. For these reasons, this impact would remain **significant and unavoidable**. If the County, SWCA, and other potentially affected agencies cooperate in allowing the improvements to move forward, the impact would be classified as significant in the short term but eventually could be reduced to a less-than-significant level in the long term, depending on the outcome of the separate CEQA evaluation (if needed).

Regarding expansion of Zone 40 water supply facilities and infrastructure, implementation of mitigation measures to reduce impacts is the responsibility of Zone 40. Such measures would be implemented in accordance with the certified Zone 40 EIR prepared by SCWA. Impacts on seven issue areas would remain **significant and unavoidable** after implementation of mitigation.

Similarly, implementation of mitigation measures to reduce impacts related to the expansion of the FRWP's water-supply facilities and infrastructure is the responsibility of SCWA. Such measures would be implemented in accordance with the certified FRWP EIR/EIS prepared by SCWA. Impacts on six issue areas would remain **significant and unavoidable** after implementation of mitigation.

If on-site or off-site water conveyance facilities are delayed or not constructed, implementation of Mitigation Measure 3.5-3 would cause project development to be curtailed. Impacts associated with the curtailment of development are discussed in Impact 3.5-4.

Impact 3.5-16: Permanent Curtailment of Project Development. *Water supplies would be available to meet the project's long-term water demands once the long-term water supply conveyance facilities identified in the Zone 40 WSMP (i.e., Vineyard Surface WTP, FRWP, and NSAPP) have been constructed and are online. While there is a reasonable likelihood that SCWA has water to supply the project in the long term, there is uncertainty regarding whether the infrastructure necessary to deliver the long-term water supplies needed to serve the project would successfully implemented, and a permanent curtailment in project development could occur.*

Impacts would be the same under Phase 1 as under the program (entire project site) level analysis for all alternatives. Refer to Impact 3.5-7 for further discussion of this impact.

Impact 3.5-17: Use of Nonpotable-Water Supplies and Infrastructure. *Project implementation could result in the use of nonpotable-water supplies and infrastructure to provide landscaping and open space irrigation. Initially, the demands for nonpotable water would be met by the project's potable-water supplies. In the long term, it is assumed that future supplies of*

nonpotable water would be provided by SRCSD or by GET-Remediated Water facilities, when a sufficient supply of nonpotable water is available to meet project demands.

Applies to: PP, HD, IM, NF, NP.

Impacts would be the same under Phase 1 as under the program (entire project site) level analysis for all alternatives. Refer to Impact 3.5-8 for further discussion of this impact.

Impact 3.5-18: Effects of Global Climate Change on Surface-Water and Groundwater Supplies. *Implementation of development Phase 1 would increase demand for water supply. Supplies of surface water and groundwater in California could be affected by global climate change.*

Applies to: PP, HD, IM, NF, NP.

Impacts would be the same under Phase 1 as under the program (entire project site) level analysis for all alternatives. Refer to Impact 3.5-9 for further discussion of this impact.

CUMULATIVE IMPACTS

Future development in Rancho Cordova and Sacramento County would increase demand for water supplies and infrastructure in the city and the region. In particular, the cumulative development scenario would increase demand for initial water supplies and conveyance facilities, permanent long-term water supplies and conveyance facilities, and nonpotable-water supplies and conveyance facilities.

Initial Water Supply and Conveyance Facilities

Because the long-term water supplies cannot be delivered to the project site until the SCWA facilities (i.e., the Vineyard Surface WTP, the FRWP, and the NSAPP) have been constructed and are online, the project applicant(s) have discussed the availability of an initial water supply and infrastructure with SCWA and GSWC. As a result of these discussions, the project applicant(s) have identified potential water-supply options and necessary off-site water conveyance facilities for providing initial water to the project site. GSWC has indicated that it would have an adequate water supply to serve Phase 1A. This water supply is considered a reliable source of potable water; therefore, there is reasonable certainty that initial water supplies needed to serve Phase 1A would be available.

However, to provide water supplies to the remaining development within Phase 1, the project applicant(s) have identified two additional water supply options (Options A and B). If neither of these water supply options is approved, water supplies may not be available to meet the demands of the remainder of development Phase 1, and this water supply is not considered a reliable source of potable water. Implementation of Mitigation Measure 3.5-2 would reduce significant impacts related to the need for initial water supplies to serve the remainder of Phase 1 development to a less-than-significant level, because the City would ensure that water supply and delivery systems are available to meet the demand created by new development, or are guaranteed to be built by bonds or securities prior to approval of project entitlements.

Off-site water conveyance facilities (e.g., pipelines and pump stations) would need to be constructed to deliver water from GSWC's facilities to the project site, based on approved designs for initial water conveyance facilities. Although the new pipeline is needed to convey water from the GSWC system to the project on an initial basis, it would remain in use after the long-term water supplies for the project were constructed and online. The pipeline would then serve as an active intertie between GSWC's existing system and the existing SCWA system. As such, the pipeline would provide redundancy to both systems and act as a conveyance mechanism for SCWA to provide replacement water to GSWC in the future to planned development. The proposed project would not result in a

cumulatively considerable incremental contribution to this cumulatively significant impact from the Rio del Oro project and related projects.

Permanent Water Supply

SCWA prepared and adopted its Zone 40 WSMP, which describes the facilities and the construction financing mechanism needed to implement a phased water-supply program to meet the region's water needs into the foreseeable future, specifically the year 2030. The goal of the master plan is to define a conjunctive-use program of groundwater, surface-water, and recycled-water supplies as well as a financing program for the construction of a new surface-water diversion structure; surface-water treatment plant; water conveyance pipelines; and groundwater extraction, treatment, and distribution facilities. These facilities would be used for the production, conservation, transmission, and distribution of wholesale and retail water supplies into the year 2030.

The project would be served by SCWA Zone 40 through its conjunctive-use water-supply system. SCWA has entitlements to surface water, is a groundwater appropriator, and has entered into an agreement with Aerojet to beneficially reuse GET-Remediated Water. As discussed in Impact 3.5-5 above, as required by SB 610, a WSA has been prepared and adopted by the SWCA Board of Directors for the project. The WSA evaluates the adequacy of existing and future water supplies to meet the water demand created by the Rio del Oro project in conjunction with existing development in Rancho Cordova and future related, reasonably foreseeable projects. As shown in Table 3.5-13 of this Recirculated DEIR/Supplemental DEIS, the total water demand under the Proposed Project Alternative is estimated to be 8,981 afy. As shown in Tables 3.5-17 through 3.5-19, SCWA has adequate water supplies available to meet projected water demands, even in critically dry years.

GET-Remediated Water is available in sufficient quantities to meet the project's water demands. GET-Remediated Water is currently discharged to the American River and is available for diversion at the FRWP on the Sacramento River under the terms of an agreement between Aerojet and SCWA. The agreement, which was entered in 2003, grants to SCWA the GET-Remediated Water discharged to the American River.

According to the Zone 40 WSMP, the Zone 41 UWMP, and the City's WSA, reliable, long-term water supplies would be available to serve Zone 40 through 2030. SCWA has secured (and is securing additional) water entitlements that would allow SCWA to meet its projected 2030 water demands. SCWA intends to continue to extract groundwater to meet its customers' demands, within the limits of the negotiated sustainable yield of the Central Basin. However, because SCWA does not currently control the water supplies necessary to meet the water supply demands full build-out of Zone 40 (namely the appropriative water, transfer water and POU water supplies), these particular supplies cannot be considered "reasonably likely" under the *Vineyards* case (under a conservative analysis). Taking into consideration only those water supplies "reasonably likely" to be available to SCWA to supply Zone 40 demand other than Aerojet lands and replacement water demands (i.e., the Fazio and SMUD CVP contract supplies and groundwater pumped at levels no greater than the negotiated sustainable yield for the Central Basin as determined under the Water Forum Agreement), there would be a long-term shortfall, resulting in a significant cumulative impact associated with increased demand for water supply in Zone 40. While the Rio del Oro project would rely substantially on the water from the GET Remediated Water transferred to SCWA for use within Aerojet lands, the project would also utilize 1,500 afy from Zone 40 water supplies, thus making that water unavailable to other developing areas seeking water supplies after allocations have been made to Rio. Therefore, the Rio del Oro project's reliance on a portion of the Zone 40 water supplies would result in a cumulatively considerable incremental contribution to the cumulatively significant impact of increased demand for water supply in Zone 40.

Permanent Water Conveyance Facilities

The permanent long-term water supply cannot be delivered to the project site until water conveyance facilities identified in the Zone 40 WSMP (i.e., the Vineyard Surface WTP, the FRWP, and the NSAPP) have been constructed and are online.

Because the facilities identified in the Zone 40 WSMP (i.e., the Vineyard Surface WTP, the FRWP, and NSAPP) would be constructed to serve the project and other development in the region, the environmental impacts of these facilities are associated with development of the project. The Zone 40 WSMP and the FRWP are required to serve regional development and would also occur without development of the project; because these facilities are required to serve regional development, they would be required whether or not the project is developed. Because there is a relationship between the project and the need for these water facilities, approval of the project contributes indirectly to the related impacts. Impacts resulting from construction of these water facilities were addressed in the EIR for the Zone 40 WSMP and the FRWP EIR/EIS As discussed under Impact 3.5-6, construction of these water facilities would result in several significant environmental impacts, most of which would be reduced to a less-than-significant level through implementation of mitigation identified in the EIR for the Zone 40 WSMP and the FRWP EIR/EIS. Impacts identified in the EIR for the Zone 40 WSMP that would remain significant or potentially significant after implementation of mitigation include direct visual impacts, potential direct impacts on a variety of biological resources, potential loss of habitat from development of facilities that would otherwise be included in the proposed SSCHCP, air-quality emissions of NO_X during construction, noise during construction, and potential long-term stationary-source noise impacts. Impacts identified in the FRWP EIR/EIS that would remain significant or potentially significant after implementation of mitigation include loss of whitewater boating, noise impacts during construction, long-term stationary-source noise impacts, and changes in visual resources.

Therefore, the Rio del Oro project and related projects would contribute to the indirect and direct significant impacts associated with the future construction of water facilities that would be needed to serve the project and other regional development. Cumulative impacts associated with increased demand for water conveyance facilities to deliver long-term water supplies to the project would result in a cumulatively considerable incremental contribution to this cumulatively significant impact from the Rio del Oro project and related projects.

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. Initially, the demands for nonpotable water would be met by the project’s supplies of potable water. In the long term, it is assumed that future supplies of nonpotable water would be provided by SRCSD or by GET-Remediated Water facilities, when a sufficient supply of nonpotable water is available to meet project demands.

It is expected that related projects would install a purple-pipe system consistent with the Citywide Recycled Water Distribution Ordinance, and it is assumed that future supplies of nonpotable water would be provided to these related projects, when sufficient supplies are available to meet each project’s demands. Therefore, cumulative impacts related to nonpotable water are expected to be less than significant. The proposed project would not result in a cumulatively considerable incremental contribution to this cumulatively significant impact from the Rio del Oro project and related projects.

Global Climate Change

As described in detail above in Impact 3.5-8, the project’s entitlements to surface water supplies are unlikely to be affected by global climate change because, as indicated by preliminary results from DWR (2006), impacts of climate change on water supply would be largely reflected in reduced exports south of the Delta, while existing Delta water-quality requirements would continue to be satisfied. It is therefore reasonable to consider that global climate change may have relatively less effect on the project’s water supply because the project’s supplies of surface water are based on existing water rights and contract entitlements for in-basin use above the Delta.

California could potentially experience an increased number of single dry, multiple dry, and critically dry years as a result of global climate change. Based on the conclusions of current literature about California’s ability to adapt

to global climate change, it is reasonably expected that, over time, the state's water system will be modified to be able to handle the projected climate changes, even under dry and/or warm climate scenarios (DWR 2006). Coping with the effects of climate change on California's water supply could come at a considerable cost; however, based on a thorough investigation of the issue, it is reasonably expected that statewide implementation of some, if not several, of the wide variety of adaptation measures available to the state will likely enable California's water system to reliably meet future water demands. However, there is a great deal of uncertainty about impacts of climate change on the future availability of water in California, in terms of whether and where effects will occur and what the timing and severity of any such potential effect will be. Therefore, this uncertainty makes it impossible to draw a meaningful conclusion about the cumulative significance of global climate change on surface water and groundwater for the proposed project and state-wide without substantial speculation.

3.5.6 RESIDUAL SIGNIFICANT IMPACTS

With implementation of the mitigation measures listed above, project implementation would not result in any direct residual significant impacts related to initial water supplies for the remaining Phase 1 development and initial water conveyance facilities. Regarding construction of water conveyance facilities to provide long-term water supplies (i.e., the Vineyard Surface WTP, the FRWP, and the NSAPP), the project would contribute to direct and indirect impacts in seven issue areas that were identified in the EIR for the Zone 40 WSMP and six issue areas identified in the FRWP EIR/EIS. Cumulative impacts associated with permanent water supply and construction of permanent water conveyance facilities would be significant. Therefore, project implementation would result in residual significant impacts related to water conveyance facilities to deliver long-term water supplies, and the long-term water supplies themselves.