2 EXECUTIVE SUMMARY

2.1 INTRODUCTION

Zone 40 consists of approximately 86,000 acres of agricultural, residential, and industrial land in central Sacramento County and encompasses portions of the cities of Elk Grove and Rancho Cordova. The proposed 2002 Zone 40 Water Supply Master Plan (2002 Zone 40 WSMP), prepared by the Sacramento County Water Agency (SCWA), describes the facilities and the construction financing mechanism needed to implement a phased water supply program to meet water needs in a portion of Zone 40 described as the 2030 Study Area. The goal of the 2002 Zone 40 WSMP 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 in the 2030 Study Area.

This document is a program EIR. A program EIR identifies and assesses the environmental impacts of a series of actions that compose an overall program, such as the 2002 Zone 40 WSMP. The environmental analysis in this EIR is based on an evaluation of how environmental conditions would be expected to change as a result of implementing the 2002 Zone 40 WSMP. The impact analysis addresses both the impacts resulting from implementing the master plan and the master plan's contribution to the cumulative impacts from other projects in the region.

Public and agency response to the draft EIR will be important input to the SCWA, which will prepare the final 2002 Zone 40 WSMP based on these public and agency comments.

This chapter summarizes the information presented in this draft EIR. It includes a summary of the project description, environmental impacts, environmental mitigation guidelines, and alternatives.

2.1.1 INTRODUCTION TO PROJECT-RELATED IMPACTS AND ANALYSIS

Urban growth results from land use decisions made by local governments given land use authority by state law. The jurisdictions with land use authority in Sacramento County are the County of Sacramento and the cities of Sacramento, Elk Grove, Rancho Cordova, Citrus Heights, Galt, Isleton, and Folsom. SCWA is one of 27 public and private water purveyors that provide water service to satisfy growing urban demand for potable water. SCWA provides water service to three of the land use decision authorities: Sacramento County, Elk Grove, and Rancho Cordova.

SCWA has proposed a water supply master plan (WSMP) that provides a blueprint for providing water service to a portion of SCWA's service area authorized for growth by the

County of Sacramento and the cities of Elk Grove and Rancho Cordova. The WSMP addresses the water service needs into the foreseeable future, specifically the year 2030. The planning horizon (2030) for the WSMP is important and necessary because it coincides with the planning horizon of the Sacramento Water Forum Agreement and represents the approximate extent of growth that could occur with identified water supplies in the larger Zone 40 service area. Additional water supplies made available through the use of new sources, recycled water, or reclaimed water or conservation ultimately would allow additional urban growth consistent with approved land use plans. However, in the 2030 planning horizon, the use of recycled water or reclaimed water or conservation also could reduce demand for groundwater or surface water supplies.

The proposed WSMP's environmental effects, described in this EIR, are associated with specific facilities and supply options identified for the purpose of delivering water to the 2030 Study Area. Also described are environmental effects resulting from urban growth approved by the County of Sacramento and the cities of Elk Grove and Rancho Cordova that are indirectly associated with the proposed WSMP. SCWA's response to growth is not unlike that of SMUD, PG&E, Sacramento Regional County Sanitation District, Regional Transit Authority, Caltrans, or any other provider of services to the public. All service providers react to the decisions to expand urban development made by the local land use authorities.

The current adverse condition of the groundwater basin is the result of years of groundwater pumping for agricultural growth and later for urban growth. The results of the analysis conducted for the proposed WSMP suggest that implementing the plan's water supply and facilities options would result in little additional change in the current state of the groundwater basin.

Some improvement in the groundwater basin in the near term may result from the importation of surface water supplies and replacement of agricultural pumping demands with urban pumping demands. The greatest effect in the service area would be from the growth authorized by the land use authorities, which would change the landscape of the service area from natural grassland and irrigated agriculture to urban development. This change, authorized by the County of Sacramento and to some extent by the newer City of Elk Grove, has a significant and adverse effect on natural communities. The adverse effect results in the loss of habitat for species listed as threatened or endangered by state and federal resource agencies. The values of this habitat include those provided by most agriculture, including adjacent drainages, which benefit from irrigation water runoff and seepage. Loss of this habitat, although indirect to the proposed 2002 Zone 40 WSMP, is a direct effect of adopted land use plans that designate areas in this portion of the southern Sacramento County for urban expansion. During the proceedings to approve these land use plans, disclosures of effects of this urban expansion were made. These disclosures can be found in the EIR prepared for the 1993 Sacramento County General Plan and more recently in the draft EIR prepared for the City of Elk Grove.

2.2 SUMMARY OF THE 2002 ZONE 40 WATER SUPPLY MASTER PLAN

2.2.1 PROJECT LOCATION

Zone 40 extends from west-central Sacramento County near Interstate 5 to east-central Sacramento County in the vicinity of Douglas Road and Grant Line Road. The southeastern boundary of Zone 40 coincides with the county's Urban Services Boundary (USB), which is also the 100-year floodplain of Deer Creek. The USB is defined by the Sacramento County General Plan as the ultimate boundary of the urban area in the unincorporated territory of the county.

The 2030 Study Area consists of two geographically separate subareas of Zone 40 where urban water demand in the next 25 years is expected to be concentrated. Its boundaries generally coincide with the county's Urban Policy Area (UPA), defined as the area within which urban development and provision of infrastructure are expected to occur within the planning horizon of the County's General Plan (2024). The 2030 Study Area also includes approximately 4,800 acres in four small areas that are outside the UPA.

2.2.2 ELEMENTS OF THE PROJECT

Future facilities planning in Zone 40 is based on meeting needs during three hydrologic year types: average year, wet year, and dry year. The volume of groundwater needed in any given year would depend on available surface water supplies. Three options for diversion, treatment and delivery of surface water supplies to Zone 40 are proposed in the 2002 Zone 40 WSMP:

1. Freeport Regional Water Project

The Freeport Regional Water Project is SCWA's preferred option for surface water diversion. SCWA and the East Bay Municipal Utility District (EBMUD) would jointly construct a 185-million-gallons-per-day (mgd) diversion structure near the community of Freeport on the Sacramento River and a raw water pipeline from the diversion structure to the vicinity of Bradshaw and Florin Road. EBMUD would continue construction of a pipeline to the Folsom South Canal. SCWA would construct an 85-mgd (ultimate capacity) surface water treatment facility in the vicinity of Bradshaw and Florin roads, where Zone 40's portion of the raw water would be treated and delivered to the 2030 Study Area.

2. SCWA Freeport Water Treatment Plant Project

An alternative to the Freeport Regional Water Project identified in the 2002 Zone 40 WSMP is a stand-alone surface water supply project constructed by the SCWA. SCWA would construct an 85-mgd surface water treatment facility on or near the Sacramento Regional County Sanitation District's (SRCSD's) Regional Wastewater Treatment Plant Bufferlands. A diversion structure of like capacity would be constructed near the community of Freeport on the Sacramento River. A raw water (i.e., untreated) pipeline would be constructed between the diversion structure and the proposed treatment facility. Treated water pipelines would be

constructed to connect the proposed treatment facility to the 2030 Study Area at Power Inn Road and at Bruceville Road.

3. SCWA/City of Sacramento Joint Project

Under this alternative to the Freeport Regional Water Project, the SCWA would purchase 80 mgd of dedicated capacity at the City of Sacramento's Sacramento River Water Treatment Plant. A treated water pipeline would be constructed from the plant to the 2030 Study Area at Power Inn Road, Bruceville Road, Elder Creek Road, and Franklin Boulevard.

2.3 ALTERNATIVES TO THE PROJECT

CEQA requires that EIRs "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives" (State CEQA Guidelines §15126.6[a]).

This EIR evaluates three alternatives to the proposed project: No-Project Alternative, Increased Water Recycling Alternative, and Maximized Use of Remediated Water Alternative.

The alternatives listed above that consider enhanced amounts of recycled water or remediated water to supplement Zone 40 service area water supplies would be used to carry out the land uses approved by adoption of General Land Use plans. Growth and development would occur first in the UPA, followed by areas in the 2030 Study Area but outside the UPA and then areas outside the 2030 Study Area but in the USB. Because the 2030 Study Area is approximately one-half the area of Zone 40 and the area outside the 2030 Study Area is designated for ultimate urban use, additional recycled and remediated water would serve to support more urban growth beyond 2030 using known water resources at the time the 2002 Zone 40 WSMP was prepared. This is in contrast to urban water service areas that are built out, where reductions in urban water demand through water conservation and use of recycled and remediated water would result in reduced urban groundwater pumping or surface water diversions. The consequences of these alternatives, therefore, could be a facilitation of urban growth within the area designated for such growth by the land use authorities, but beyond the extent envisioned possible with existing known water supplies delineated as the Zone 40 2030 Study Area. Environmental impacts for the above alternatives (Table 7-1) are shown to be reduced compared to the 2002 Zone 40 WSMP because the use of recycled or remediated water was assumed to be a replacement for additional groundwater pumping, but impacts (e.g., land use, biology) could be greater because of the potential facilitation of additional urban growth beyond the 2002 Zone 40 WSMP's planning horizon through the augmentation of water supplies.

2.3.1 NO-PROJECT ALTERNATIVE

DESCRIPTION

The No-Project Alternative assumes that existing conditions in the 2030 Study Area are continued and that the existing volume (4,400 afy) of recycled water would be used within Zone 40. In the absence of an approved 2002 Zone 40 WSMP, the SCWA would continue to operate and supply water to Zone 40 in accordance with the recommendations of the approved 1987 WSMP as constrained by the requirements of Conservation Element Policy 20 (CO-20) and the County development cap, and modified by the adopted Water Forum Agreement and adopted specific and community plans within the 2030 Study Area. CO-20 requires that development in identified growth areas have an adopted water supply master plan and the necessary agreements and financing in place for water supply facilities. The development cap limits the number of housing units that can be constructed in identified growth areas until the necessary agreements for water supplies are in place. The Water Forum Agreement includes a negotiated sustainable yield of 273,000 afy for the Central Groundwater Basin. Therefore, SCWA in combination with other water supply purveyors in the Central Basin that are signatory to the Water Forum Agreement are limited to groundwater volumes that do not exceed the negotiated sustainable yield. The adopted specific and community plans have modified the boundaries of the 1987 WSMP service area to include areas and land uses proposed in the plans.

The 1987 WSMP would allow all developments identified in the 1987 WSMP and specific and community plans adopted by the County subsequent to the 1987 WSMP to build out to projected densities, and surface water wheeled through the City of Sacramento Water Treatment Plant would be maximized to full water entitlement amounts (15,000 afy). Similar to the 2002 Zone 40 WSMP, the 1987 WSMP included an evaluation of a surface water diversion structure on the American or Sacramento River and construction of a surface water treatment plant in Zone 40. Under this alternative, construction of a surface water diversion structure and water treatment plant could occur, which would allow a maximized conjunctive water supply system.

Facilities that could be constructed if the No-Project Alternative were selected would be similar to facilities recommended in the 2002 Zone 40 WSMP and evaluated in this EIR. However, it is necessary to evaluate the 2002 Zone 40 WSMP as a separate independent action because several conditions have changed since the adoption of the 1987 WSMP, including modification of the study area for the WSMP; implementation of CO-20 (see Section 4.1, Land Use); implementation of a development cap for new development in Zone 40; adoption of the Water Forum Agreement, which limits the sustainable yield of the underlying groundwater basin to 273,000 afy; and adoption of several specific and community water supply master plans that have modified the original 1987 WSMP. Although the 2002 Zone 40 WSMP and the No-Project Alternative are substantially similar, for purposes of satisfying CEQA requirements, the No-Project Alternative is evaluated below.

GENERAL ENVIRONMENTAL IMPACTS

Implementing the No-Project Alternative would result in impacts similar to those of the proposed project. The No-Project Alternative would be environmentally similar to the proposed project because it would provide the benefits associated with the proposed project (i.e., stabilization of the groundwater aquifer, maximized surface water deliveries). The No-Project Alternative would be the continuation of status quo. Please refer to Section 7.2 for a full discussion of this alternative.

2.3.2 INCREASED WATER RECYCLING ALTERNATIVE

DESCRIPTION

Implementing the Increased Water Recycling Alternative would maximize the use of treated wastewater (recycled water) from the Sacramento Regional Wastewater Treatment Plant for nonpotable consumptive uses, such as irrigation, industrial use, and wetlands management. Increased use of recycled water would decrease SCWA's reliance on groundwater to meet future nonpotable water demands in the planning horizon. Although capable of reducing groundwater pumping, this alternative could not entirely substitute for all groundwater and/or surface water supplies because of the limited uses of recycled water.

The Sacramento Regional County Sanitation District (SRCSD) is conducting a feasibility study to determine the role of recycled water in countywide water management and to evaluate recycled water markets, particularly for agriculture and landscape irrigation. The SRCSD is considering implementation of a large-scale (i.e., 30-40 mgd) water recycling program if studies determine that a market exists. Currently, SRCSD operates a 5-mgd water recycling facility at the SRWWTP and has plans to expand this facility to 10 mgd within the next 5 years (Robles, pers. comm., 2003).

Recycled water is delivered to the south Sacramento County area for landscape irrigation. Demand for recycled water is seasonal and generally occurs from April to November (approximately 7 months). The SRCSD delivers approximately 3.5 mgd of recycled water to the area south of the SRWWTP during the demand period (Robles, pers. comm., 2003). This is approximately 70% of the capacity of the recycled water treatment facility and corresponds to a recycled water supply of 2,000-3,000 afy. Implementation of a large-scale (i.e., 30-40 mgd) water recycling program could result in the delivery of 10,000-20,000 afy of recycled water to SRCSD's service area of which a portion could be delivered to Zone 40.

Availability of recycled water would offset groundwater pumping by a similar volume and would be used for nonpotable consumptive uses, such as landscape irrigation (e.g., golf courses, roadway medians, agricultural irrigation). Use of recycled water for irrigation in the 2030 Study Area would reduce groundwater extractions in the 2030 Study Area within the planning horizon and would similarly reduce return flows to the Sacramento River. The potential reduction of pumping in the Central Basin cannot be quantified until the feasibility study is completed. Because the SRCSD facilities extend beyond the Central Basin, it is likely

that recycled water would be used beyond the boundaries of the Central Basin and Zone 40. Conveyance, storage, and distribution facilities required for use and distribution of recycled water in the 2030 Study Area would include pump stations, storage tanks, scalping plants, reservoirs, pipelines, and canals.

Although implementing this alternative would reduce the volume of groundwater extracted from the underlying groundwater basin to serve growth within the 2030 Study Area, additional recycled water would serve to support more urban growth beyond 2030 using known water resources at the time the 2002 Zone 40 WSMP was prepared. The consequences of this alternative, therefore, could be a facilitation of urban growth within the area designated for such growth by the land use authorities, but beyond the extent envisioned possible with existing known water supplies.

GENERAL ENVIRONMENTAL IMPACTS

Use of recycled water to meet some of Zone 40's nonpotable water demand could reduce groundwater pumping, when compared to the future baseline, in the 2030 Study Area. It is likely that impacts relative to groundwater pumping in the planning horizon and water quality would be slightly reduced. Other impacts, including those related to fishery resources, noise, cultural resources, public health and safety, utility and service systems, and soils and geology, would be essentially the same as under the proposed project. However, because this alternative could facilitate additional growth beyond the planning horizon of the 2002 Zone 40 WSMP, land use, aesthetics, air quality, traffic, and biological impacts could be greater under this alternative than under the proposed project. Because of its uncertainty, this alternative would not be environmentally superior to the proposed project.

Implementation of this alternative would slightly reduce demands on groundwater in the project area. Constraints to water recycling on the scale contemplated in this alternative are many, however, and lend uncertainty to its ultimate implementation. Such constraints include regulatory permits and approvals, institutional agreements between producers of recycled water and other agencies, identification of markets for the resource, and construction of treatment, storage, and conveyance facilities. Because of the limited uses of recycled water, this alternative could not entirely substitute for any element of the proposed project. Provision for additional surface water supplies to meet growing demands for potable water would still be required. Please refer to Section 7.3 for a full discussion of this alternative.

2.3.3 MAXIMIZED USE OF REMEDIATED WATER ALTERNATIVE

DESCRIPTION

The Maximized Use of Remediated Water Alternative assumes that the SCWA has acquired the rights to use remediated water from Aerojet/McDonnell Douglas and Boeing for use in the 2030 Study Area. Some of the remediated water could be directly used as a replacement for groundwater pumping contemplated in the 2002 Zone 40 WSMP. The pattern of remediated water use could vary but would involve approximately 30,000 afy. Although future conditions

may change, resulting in a redistribution of the remediated water supply, SCWA's staff expects that the remediated water would be used in the eastern portion of Zone 40 with the following allocation: 4,000 afy reinjection (already required by the RWQCB), 7,000 afy replacement water for lost supplies attributable to groundwater contamination in the Sunrise corridor, 5,000 afy replacement water for lost supplies attributable to groundwater contamination in the Cal-American and American States Company's service areas, and 14,000 afy for other uses in Zone 40.

Although implementing this alternative would reduce the volume of groundwater extracted from the underlying groundwater basin to serve growth within the 2030 Study Area, additional recycled water would serve to support more urban growth beyond 2030 using known water resources at the time the 2002 Zone 40 WSMP was prepared. The consequences of this alternative, therefore, could be a facilitation of urban growth within the area designated for such growth by the land use authorities, but beyond the extent envisioned possible with existing known water supplies.

GENERAL ENVIRONMENTAL IMPACTS

Use of remediated water to meet some of Zone 40's potable and nonpotable water demand would reduce overall groundwater pumping in the planning horizon in the 2030 Study Area. It is likely that impacts relative to groundwater and water quality would be reduced because less groundwater pumping would occur. Other impacts, including those related to land use, aesthetics, air quality, traffic, noise, cultural resources, public health and safety, utility and service systems, and soils and geology, would be essentially the same as under the proposed project.

Implementation of this alternative would reduce demands for additional groundwater pumping in the project study area compared to the future baseline. Please refer to Section 7.4 for a full discussion of this alternative.

2.4 IMPACTS, ENVIRONMENTAL MITIGATION GUIDELINES, AND LEVEL OF SIGNIFICANCE

Table 2-1 presents a detailed summary of environmental impacts, environmental mitigation guidelines, and level of significance after mitigation associated with implementing the 2002 Zone 40 WSMP. As discussed in Chapter 6 (Significant and Unavoidable Adverse Impacts), implementing the 2002 Zone 40 WSMP would result in five significant environmental impacts that cannot be avoided or reduced to less than significant with implementation of environmental mitigation guidelines:

Impact 4.1-3: Growth-Inducing Impacts. Implementation of the 2002 Zone 40 WSMP would result in the removal of one obstacle to growth (water supply) in the 2030 Study Area. Growth would result in the conversion of undeveloped areas in the 2030 Study Area to urban land uses resulting in impacts on biological resources, scenic resources, air quality, noise, traffic, and other effects of increased urbanization. Land use decisions would continue to be made by city and county

government decision-makers with guidance provided by adopted General Plans. However, because the project would remove one obstacle to growth and accommodate substantial development in the 2030 Study Area, the 2002 Zone 40 WSMP would be growth-inducing, and the resulting growth-inducing impacts would lead to significant environmental effects. Because mitigation of growth-related effects is in the purview of the County and the cities of Elk Grove and Rancho Cordova through their existing land use authority, and because SCWA itself has no such authority, the 2002 Zone 40 WSMP cannot feasibly provide for additional mitigation of growth-related environmental impacts. This is a significant and unavoidable impact.

Impact 4.1-4: Conversion of Prime Farmland or Farmland of Statewide Importance. The 2030 Study Area includes Prime Farmland and Farmland of Statewide Importance. Although specific locations of conveyance pipelines and groundwater facilities are not known at this time, construction of these facilities on designated farmland could result in an incremental loss of this resource. Also, as an indirect impact, farmland conversion could occur as a result of unknown development supported by the water supply plan. Although the precise amount or location cannot be known, it is reasonable to expect that some farmland conversion would occur from facility construction and/or future urban development. No feasible mitigation is available that would replace lost farmland. This would be a significant and unavoidable impact.

Impact 4.2-3: Visual Impact of Project Facilities. Depending on the size, location, and design of new facilities, significant visual impacts may occur with implementation of the 2002 Zone 40 WSMP. Once additional information becomes available, and specific projects are proposed, additional environmental analysis would be required to determine the magnitude of impacts, if any, that would result. Because the visual impacts of the proposed project cannot be determined at this time and project facilities could result in significant visual changes in the environment for which no feasible mitigation is available, aesthetic impacts associated with facilities recommended in the 2002 Zone 40 WSMP would be significant and unavoidable.

Impact 4.3-1: Short Term Construction-Related Emissions. Short term construction generated emissions could potentially exceed SMAQMD daily emission thresholds of 85 ppd for NO_X and 275 ppd for fugitive dust (PM_{10}). As a result, short term construction generated air quality impacts would be potentially significant. Because it is unknown whether construction contractors would be able to comply with the mitigation requirements, this impact would remain a potentially significant and unavoidable impact.

Impact 4.4-1: Short-Term Construction-Generated Noise. Construction activities associated with development of project facilities could exceed County noise thresholds at nearby noise-sensitive land uses. This would be a potentially significant noise impact. Because it is unknown whether construction contractors could comply with the above mitigation, this impact would be potentially significant and unavoidable.

Impact 4.4-4: Stationary Source Noise. Operation of proposed stationary noise sources could result in noise levels at nearby noise-sensitive receptors which could exceed County noise

ordinance standards. Mitigation would include project-specific CEQA review and design elements to minimize noise impacts and meet Sacramento County noise standards. Design elements could include shielding and enclosures. Implementation of these mitigation measures are expected to reduce potential impacts to levels at or below standards. However, because of the uncertainty associated with facilities that have not yet been designed, this impact is considered potentially significant and unavoidable.

Impact 4.6-1: Special-Status Species. A total of 8 special-status plants and 26 special-status wildlife species have been recorded, or have the potential to occur, in the vicinity of the 2030 Study Area. Construction and maintenance of project facilities could result in loss and/or disturbance of special-status plants and animals and their habitat. Additional impacts could result from development facilitated by adoption of the WSMP. This is considered a potentially significant impact. Because of the uncertainty of environmental effects associated with facilities that have not yet been designed or sited, impacts on special-status species are potentially significant and unavoidable.

Impact 4.6-2: Sensitive Habitats. The 2030 Study Area and nearby locations support a number of several sensitive habitats. Construction and maintenance of project facilities could result in loss, alteration, and/or temporary disturbance of sensitive habitats. Additional impacts could result from development facilitated by adoption of the WSMP. This would be considered a potentially significant impact. Because of the uncertainty of environmental effects associated with facilities that have not yet been designed or sited, impacts on sensitive habitat are potentially significant and unavoidable.

Impact 4.6-4: Potential Impact on the South Sacramento Habitat Conservation Plan. Construction of 2002 WSMP water facilities would facilitate development that could, in turn, result in the potential loss of important habitat areas inside the USB that are potentially critical components of the SSHCP. It is anticipated that the area in the UPA would be developed and thus that little or no habitat mitigation associated with the SSHCP would occur in the UPA. In addition, the 8,400 acres of land inside the 2030 Study Area (as analyzed in this EIR) but outside the UPA contains no resources critical to the success of the SSHCP. If land use authorities direct development of these 8,400 acres consistent with the 2030 Study Area, implementation of the 2002 Zone 40 WSMP would not significantly affect the SSHCP. However, at this point, it is unknown if land use authorities would direct development in the aforementioned 8,400-acre study area or would direct development elsewhere within the USB, which could potentially affect the viability of the SSHCP. As mitigation, SCWA will provide funding to facilitate and expedite completion of the SSHCP. However, because of the uncertainty of future land use decisions that could result in development of land outside the 2030 Study Area, this impact is potentially significant and unavoidable.

SUMMARY OF CUMULATIVE IMPACTS

Implementing the 2002 Zone 40 WSMP would result in cumulative impacts, some of which would be reduced to a less-than-significant level with implementation of environmental

mitigation guidelines, policies outlined in the County's General Plan, or other means. Cumulative impacts that could be reduced to a less-than-significant level are long-term operation-related noise impacts and construction-related traffic impacts. Cumulative impacts associated with implementing the WSMP that could not be reduced to a less-than-significant level are growth-inducing and prime farmland impacts; aesthetic impacts associated with the conversion of open space areas; construction-related air emissions; regional air emissions from mobile and stationary sources associated with growth; long-term traffic impacts from growth; substantial temperature increases at Freeport during individual months; possible cumulative loss of sensitive resources, including wetlands, riparian vegetation, and habitats for sensitive wildlife species; groundwater pumping beyond the negotiated sustainable yield; and decreased deliveries to State Water Project and Central Valley Project customers.

The ability to entirely avoid or mitigate cumulative impacts to a less-than-significant level depends on numerous state and federal policy decisions and actions beyond the control of the SCWA. Although the provisions of the 2002 Zone 40 WSMP and adopted environmental mitigation guidelines for project impacts would also help to reduce cumulative impacts, it cannot be ensured at this time that the significant cumulative impacts described in this EIR would be avoided or reduced to a less-than-significant level. Because of the uncertainty, it is necessary for CEQA compliance purposes to recognize and disclose that the cumulative impacts identified in this EIR could be significant and unavoidable. Consequently, any residual significant cumulative impacts described in Sections 5.2.1 through 5.2.11 of this EIR are considered to be potentially significant and unavoidable.

Table 2-2
Summary of Project Impacts and Mitigation

4.1 Land Use and Growth-Inducing Impacts
Impact 4.1-1: Consistency with General Plan Goals and Policies. The 2002 Zone 40 WSMP would be consistent with the goals and policies of the Sacramento County General Plan. This impact would be less than significant.
Environmental Mitigation Guideline: No mitigation is necessary.
Residual Impact: Less than significant
Impact 4.1-2: Consistency of Facility Site Use with Relevant Plans and Policies. Most of the project facilities proposed for the 2030 Study Area would be consistent with urban land uses because they are necessary to provide water for urban development or they would be located below ground. However, the proposed water treatment plant could be inconsistent with existing or proposed land uses depending on its specific location near Bradshaw and Florin Roads. This would be a potentially significant impact.
Environmental Mitigation Guideline: SCWA shall implement facility siting criteria that avoids land use compatibility impacts to the degree feasible. Sites shall be selected to achieve compatibility with adjacent land uses. If a site is selected that could result in land use compatibility conflicts, project facilities shall be designed and situated on the project site to reduce land use conflicts. Measures implemented could include provision of buffer areas between facilities and surrounding land use, visual screening, and reduced size of project facilities.
Residual Impact: Less than significant
Impact 4.1-3: Growth-Inducing Impacts. Implementation of the 2002 Zone 40 WSMP would result in the removal of one obstacle to growth (water supply) in the 2030 Study Area. Growth would result in the conversion of undeveloped areas in the 2030 Study Area to urban land uses resulting in impacts on biological resources, scenic resources, air quality, noise, traffic, and other effects of increased urbanization. Land use decisions would continue to be made by city and county government decision-makers with guidance provided by adopted General Plans. However, because the project would remove one obstacle to growth and accommodate substantial development in the 2030 Study Area, the 2002 Zone 40 WSMP would be growth-inducing, and the resulting growth-inducing impacts would lead to significant environmental effects.
Environmental Mitigation Guideline: The water supply provided by the 2002 Zone 40 WSMP was determined considering planned growth for the 2030 Study Area consistent with growth projections provided in County General Plan and during the Water Forum process. The General Plan includes policies and programs for the protection of the environment and, to the extent feasible, the avoidance or mitigation of significant effects on the environment from planned growth and development. During the normal course of the County's implementation of its General Plan policies, feasible mitigation of significant impacts from planned growth and development including compliance with a future South Sacramento County Habitat

Table 2-2
Summary of Project Impacts and Mitigation

	Conservation Plan could occur. Mitigation of growth-related environmental impacts is in the purview of the County and the cities of Elk Grove and Rancho Cordova, through their existing land use authority. SCWA itself has no such land use authority.
	Residual Impact: Significant and unavoidable
Impact 4.1-4: Conversion of Prime Farmland or Farmland of Statewide Importance. The 2030 Study Area includes Prime Farmland and Farmland of Statewide Importance. Although specific locations of conveyance pipelines and groundwater facilities are not known at this time, construction of these facilities on designated farmland could result in an incremental loss of this resource. Also, as an indirect impact, farmland conversion could occur as a result of unknown development supported by the water supply plan. Although the precise amount or location cannot be known, it is reasonable to expect that some farmland conversion would occur from facility construction and/or future urban development. Therefore, this is a potentially significant impact.	
	Environmental Mitigation Guideline: SCWA shall design and site proposed facilities to avoid the development of prime or statewide important farmlands to the degree feasible. Because it cannot be assured that less than 50 acres of prime or statewide important farmlands would be developed, this would be a significant and unavoidable impact.
	Residual Impact: Significant and unavoidable
4.2 Aesthetics	
Impact 4.2-1: Construction-Related Visual Impacts. Implementing the 2002 Zone 40 WSMP would temporarily affect the visual quality of the areas surrounding project facilities during construction. During this time, views of facility areas would include heavy equipment, construction materials, cleared land area, stockpiled soil, and other features typical of a construction site. These activities would be temporary and would cease once the project is complete. No lasting adverse visual impacts are anticipated from construction. This would be a less-than-significant impact.	
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
Impact 4.2-2: Visual Impacts of Increased Nighttime Lighting. Operation of project facilities could require the use of outdoor nighttime lighting, which could contribute to sky glow and adversely affect nighttime views of the project area. This would be a potentially significant impact.	

Table 2-2
Summary of Project Impacts and Mitigation

	Environmental Mitigation Guideline: SCWA shall install hooded shields or other devices around the permanent lights at the proposed facilities to minimize cutoff of glare, and upward or horizontal casting of light. All lighting will be positioned so that minimize intrusive light is cast beyond the facility footprint.
	Residual Impact: Less than significant
Impact 4.2-3: Visual Impact of Project Facilities. Depending on the size, location, and design of new facilities, significant visual impacts may occur with implementation of the 2002 Zone 40 WSMP. Once additional information becomes available, and specific projects are proposed, additional environmental analysis would be required to determine the magnitude of impacts, if any, that would result. Because the visual impacts of the proposed project cannot be determined at this time, aesthetic impacts associated with facilities recommended in the 2002 Zone 40 WSMP would be potentially significant.	
	Environmental Mitigation Guideline: SCWA shall conduct appropriate CEQA environmental analysis prior to the siting and construction of project facilities. This analysis shall include, but is not limited to, a visual survey of the proposed site and surrounding area. Visual simulations of the proposed project may be required. If potentially significant impacts are identified, appropriate mitigation shall be recommended to reduce, where possible, impacts to a less-than-significant level. This mitigation may include visual screening (i.e., vegetation), redesign, or relocation of project facilities.
	Residual Impact: Significant and unavoidable
4.3 Air Quality	
Impact 4.3-1: Short Term Construction-Related Emissions. Short term construction generated emissions could potentially exceed SMAQMD daily emission thresholds of 85 ppd for NO_X and 275 ppd for fugitive dust (PM10). As a result, short term construction generated air quality impacts would be potentially significant.	
	Environmental Mitigation Guideline: Short-Term Construction-Related Emissions. Develop an air quality mitigation plan consistent with Sacramento Metropolitan Air Quality Management District protocols to reduce construction-generated emissions. Such a plan is expected to include measures to control fugitive dust, such as the following construction-related environmental mitigation guidelines: ▸ All disturbed areas, including storage piles that are not actively used for construction purposes, shall be stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover. ▸ All onsite unpaved roads and offsite unpaved access roads shall be stabilized of dust emissions using water or chemical stabilizer/suppressant. ▸ All ground-disturbing activities (e.g., clearing, grubbing, scraping, and excavation) shall be controlled of fugitive dust

Table 2-2
Summary of Project Impacts and Mitigation

emissions using application of water or by presoaking.

- All material shall be transported offsite and covered and wetted to limit visible dust emissions, or at least 6 inches of freeboard space from the top of the container shall be maintained.
- Wheel washers shall be installed for all exiting trucks and equipment, or wheels shall be washed to remove accumulated dirt before leaving construction sites.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours during operations.
- Following the addition of materials to, or the removal of materials from, the surfaces of outdoor storage piles, the piles shall be stabilized of fugitive dust emissions using water or chemical stabilizer/suppressant.
- Vehicle speeds on unpaved surfaces shall be limited to 15 mph.
- Excavation and grading activities shall be suspended when winds exceed 20 mph.
- Areas subject to excavation and grading at any one time shall be limited to the fullest extent possible.

The air quality mitigation plan will include measures to reduce short-term emissions of diesel exhaust particulate matter, such as the following:

- Truck and equipment engines shall be maintained in good running condition, in accordance with manufacturer specifications.
- When not in use, equipment shall not be left idling.
- The project contractor(s) or designated representatives, shall provide a plan for approval by SCWA and SMAQMD demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in construction activities, including owned, leased, and subcontractor vehicles, will achieve a projectwide fleet-average 20% NO_X reduction and 45% particulate reduction compared to the most recent ARB fleet average at time of construction. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.
- The project contractor(s) or designated representatives shall submit to SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and projected hours of use or fuel throughput for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours before the use of subject heavy-duty off-road

Table 2-2
Summary of Project Impacts and Mitigation

	equipment, the project representative shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and onsite foreman. ▸ Implementing the 2002 Zone 40 WSMP shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40% opacity for more than 3 minutes in any one hour. Any equipment found to exceed 40% opacity (or Ringelmann 2.0) shall be repaired immediately, and SMAQMD shall be notified within 48 hours of identification of noncompliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. Because it is unknown whether construction contractors would be able to comply with the mitigation requirements, this impact would remain a potentially significant and unavoidable impact.
	Residual Impact: Potentially significant and unavoidable
Impact 4.3-2: Long-Term Operational Source Emissions. Project-generated emissions of ROG, NO_X, and PM_{10} associated with mobile source and fugitive dust emissions are anticipated to be less than AQMD thresholds. Therefore, this would be a less-than-significant impact.	
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
Impact 4.3-3: Increases in Toxic Air Contaminants. Water treatment facilities and operations have not been sufficiently defined at this time to accurately assess related impacts associated with the generation of toxic air contaminants. However, any water quality treatment facilities that would emit toxic air contaminants would require permitting from the SMAQMD. Compliance with thee permitting requirements would ensure that emissions of toxic air contaminant would be less than significant.	
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
4.4 Noise	
Impact 4.4-1: Short-Term Construction-Generated Noise. Construction activities associated with development of project facilities could exceed County noise thresholds at nearby noise-sensitive land uses. This would be a potentially significant noise impact.	

Table 2-2
Summary of Project Impacts and Mitigation

	Environmental Mitigation Guideline: ▸ Construction activities shall be limited to the hours of 6:00 a.m. and 8:00 p.m. on weekdays and to the hours of 7:00 a.m. and 8:00 p.m. on weekends. ▸ Construction equipment shall be properly outfitted and maintained with noise reduction devices to minimize construction-generated noise. Wherever possible, noise-generating construction equipment shall be shielded from nearby residences by noise-attenuating buffers, such as structures or trucks. Stationary construction equipment shall be centrally located onsite at the greatest distance possible from nearby noise-sensitive receptors. ▸ Prior to construction of project facilities, the contractor shall develop and implement a construction noise attenuation plan as needed on a project-by-project basis to reduce noise-related impacts at nearby sensitive receptors to the degree feasible. Because it is unknown whether construction contractors could comply with the above mitigation, this impact would be potentially significant and unavoidable.
	Residual Impact: Potentially significant and unavoidable
Impact 4.4-2: Offsite Construction Traffic Noise. Construction traffic volumes would not be anticipated to change traffic noise contours of area roadways and would not result in a substantial increase (i.e. 3 dBA or greater) in average daily noise levels at nearby noise-sensitive receptors. This would be a less-than-significant impact.	
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
Impact 4.4-3: Long-Term Traffic Noise. Project-generated traffic volumes would not substantially increase existing roadway volumes. Operation of the proposed facilities would not result in a noticeable change in the traffic noise contours of area roadways and would not result in a substantial increase (i.e., 3 dBA or greater) in average daily traffic noise levels at nearby receptors. As a result, long-term increases in offsite traffic noise levels would be less than significant.	
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
Impact 4.4-4: Stationary Source Noise. Operation of proposed stationary noise sources could result in noise levels at nearby noise-sensitive receptors which could exceed County noise ordinance standards. This would be a potentially significant impact.	
	Environmental Mitigation Guideline: Project-specific CEQA review will be conducted prior to the construction of any project facilities. Stationary noise sources located at the diversion structure, water treatment plant, groundwater injection

Table 2-2
Summary of Project Impacts and Mitigation

	wells, and groundwater treatment facilities shall be designed to meet Sacramento County noise standards and shall be located as far as possible from nearby noise-sensitive land uses. Stationary noise sources shall be sufficiently designed and constructed, including the incorporation of shielding or enclosures, to ensure that operational noise levels at the nearest noise-sensitive land uses comply with the noise standards identified in the County of Sacramento noise ordinance. Project-specific environmental mitigation measures are expected to reduce potential impacts to levels at or below standards. However, because of the uncertainty associated with facilities that have not yet been designed, this impact is considered potentially significant and unavoidable.
	Residual Impact: Potentially significant and unavoidable
4.5 Traffic	
	Impact 4.5-1: Increased Vehicle Trips. Implementing the 2002 Zone 40 WSMP would generate an estimated maximum of 100 one-way construction-related vehicle trips per day. These trips represent a minor increase in traffic on area roadways. The trips would be temporary and would not decrease existing levels of service. This impact would be less than significant.
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
	Impact 4.5-2: Increased Congestion during Pipeline Construction. Construction of pipelines in area roadways could result in a temporary increase in roadway congestion, which could adversely affect existing levels of service. This impact would be potentially significant.
	Environmental Mitigation Guideline: ▸ SCWA shall coordinate design and construction of proposed facilities with relevant local agencies and jurisdictions to minimize construction-related conflicts and traffic disruption. ▸ Local residents and Regional Transit shall be notified of affected roadways before construction begins. ▸ Project contractors shall prepare a transportation plan on a project-by-project basis with information on haul routes and the number of trucks per day, as well as a traffic engineering analysis indicating that affected intersections have adequate turning radii for oversized vehicles. This plan shall specify the temporary traffic control measures that would be employed to reduce construction-related traffic impacts, where possible. These measures could include, but are not limited to the following: traffic controllers, guide vehicles, cones, and signage. This plan shall be approved by the County of Sacramento Public Works Department and Regional Transit before construction begins.
	Residual Impact: Less than significant

Table 2-2
Summary of Project Impacts and Mitigation

Impact 4.5-3: Increase in Hazards Attributable to a Design Feature. Implementing the 2002 Zone 40 WSMP would not permanently alter vehicular circulation within the project area, nor would it construct any facilities that could be hazardous to vehicles or pedestrians within the local area. This would be a less-than-significant impact.
Environmental Mitigation Guideline: No mitigation is necessary.
Residual Impact: N/A
Impact 4.5-4: Inadequate Emergency Access. Implementing the 2002 Zone 40 WSMP could partially obstruct roadways within the project vicinity, which could increase response times for emergency services. This would be a potentially significant impact.
Environmental Mitigation Guideline: Project contractors shall prepare an emergency access plan as part of the project's overall transportation plan. This plan shall indicate where emergency vehicle access to project facilities would be provided. The plan shall also outline the procedures for coordination with emergency service providers prior to project construction, road closures, and effective traffic direction. The project contractor shall adhere to the provisions of the plan and shall maintain a copy of the plan at the construction site.
Residual Impact: Less than significant
Impact 4.5-5: Long-Term Operational Traffic. Implementing the 2002 Zone 40 WSMP would generate approximately 50 one-way daily trips associated with operation of project facilities. These trips are less than 1% of existing traffic volumes on local area roadways and would not increase congestion on these roadways. This would be a less-than-significant impact.
Environmental Mitigation Guideline: No mitigation is necessary.
Residual Impact: N/A
4.6 Biological Resources
Impact 4.6-1: Special-Status Species. A total of 8 special-status plants and 26 special-status wildlife species have been recorded, or have the potential to occur, in the vicinity of the 2030 Study Area. Construction and maintenance of project facilities could result in loss and/or disturbance of special-status plants and animals and their habitat. Additional impacts could result from development facilitated by adoption of the WSMP. This is considered a potentially significant impact.
Environmental Mitigation Guideline: Project-specific CEQA review shall be conducted before construction of any project facilities. As part of that review, the CNDDB shall be consulted and surveys shall be conducted to identify the potential presence of any special-status species. If special-status species are identified in the project area and have the potential to be affected by project construction, operation, or maintenance, project-specific mitigation measures shall be identified to reduce

Table 2-2
Summary of Project Impacts and Mitigation

	potential impacts. Such measures may include: ▸ avoiding known occurrences of populations of special-status species and constructing project facilities in areas that do not substantially affect special-status species; ▸ establishing appropriate buffers around sensitive habitat; ▸ avoiding construction activities during sensitive life stages of special-status species (e.g., nesting, spawning); ▸ transplanting or relocating individual special-status plants or animals; and ▸ compensating for unavoidable impacts through restoration, enhancement, or preservation of special-status species habitat. If project activities would affect species that are federally or state listed as threatened or endangered, SCWA shall obtain appropriate permits and clearance through the applicable regulatory program (e.g., Section 7 consultation or Section 10a permit pursuant to the federal ESA, Section 2081 permit pursuant to the California ESA). Indirect effects of regional growth on special-status species would also require mitigation through environmental review of specific projects. Potential effects would be reviewed by the decision-making body and mitigation measures, including avoidance, minimization, and compensation, may be imposed, and regulatory program permits may be required. At such time that the SSHCP is adopted and implemented, it would become the mechanism through which impacts in the SSHCP area would be mitigated. Because of the uncertainty of environmental effects associated with facilities that have not yet been designed or sited, impacts on special-status species are potentially significant.
	Residual Impact: Potentially significant and unavoidable
Impact 4.6-2: Sensitive Habitats. The 2030 Study Area and nearby locations support a number of several sensitive habitats. Construction and maintenance of project facilities could result in loss, alteration, and/or temporary disturbance of sensitive habitats. Additional impacts could result from development facilitated by adoption of the WSMP. This would be considered a potentially significant impact.	
	Environmental Mitigation Guideline: The SCWA shall avoid habitats considered sensitive when siting project facilities. Sensitive habitats in the 2030 Study Area include vernal pool grasslands (particularly interspersed vernal pools and other seasonal wetlands), creeks, freshwater marsh, and riparian habitat. Trees protected by General Plan policies and under the County Tree Ordinance are also considered sensitive biological resources; all facilities should be sited to avoid impacts on protected trees. Project-specific CEQA review shall be conducted before construction of any project facilities. Surveys shall be conducted by a

Table 2-2
Summary of Project Impacts and Mitigation

	qualified biologist to identify the potential presence of any sensitive habitats. These surveys may include the preparation of a formal delineation to determine the extent of jurisdictional waters of the United States that would be filled under the proposed project. If sensitive habitats are identified in the project area and have the potential to be affected by project construction, project-specific mitigation measures shall be identified to reduce potential impacts. Such measures may include: ▸ avoiding sensitive habitat; ▸ establishing appropriate buffers around sensitive habitat; ▸ compensating for unavoidable impacts on sensitive habitat through in-kind replacement, restoration, enhancement, or preservation at a minimum 1:1 ratio to ensure no loss in acreage and/or values and functions. Indirect effects of regional growth on sensitive habitats would also require mitigation through environmental review of specific projects. Potential effects would be reviewed by the decision-making body and mitigation measures, including avoidance, minimization, and compensation, may be imposed, and regulatory program permits may be required. At such time that the SSHCP is adopted and implemented, it would become the mechanism through which impacts in the SSHCP area would be mitigated. Because of the uncertainty of environmental effects associated with facilities that have not yet been designed or sited, impacts on sensitive habitat are potentially significant.
	Residual Impact: Potentially significant and unavoidable
Impact 4.6-3: Biological Resources Associated with the Cosumnes River and Deer Creek. The Cosumnes River/Deer Creek corridor is an important ecological area. Increased groundwater pumping from operation of the proposed project could result in some reduction of mean monthly surface and subsurface flows on portions of these waterways. Results of the IGSM surface water and groundwater modeling, however, show no significant effect on groundwater levels or surface flow. Therefore, this would be a less-than-significant impact.	
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
Impact 4.6-4: Potential Impact on the South Sacramento Habitat Conservation Plan. Construction of 2002 WSMP water facilities would facilitate development that could, in turn, result in the potential loss of important habitat areas inside the USB that are potentially critical components of the SSHCP. It is anticipated that the area in the UPA would be developed and thus that little or no habitat mitigation associated with the SSHCP would occur in the UPA. In addition, the 8,400 acres of land inside the 2030 Study Area (as analyzed in this EIR) but outside the UPA contains no resources critical to the success of the SSHCP. If land use authorities direct	

Table 2-2
Summary of Project Impacts and Mitigation

development of these 8,400 acres consistent with the 2030 Study Area, implementation of the 2002 Zone 40 WSMP would not significantly affect the SSHCP. However, at this point, it is unknown if land use authorities would direct development in the aforementioned 8,400-acre study area or would direct development elsewhere within the USB, which could potentially affect the viability of the SSHCP. Therefore, this would be a potentially significant impact.	
	Environmental Mitigation Guideline: Implementation of the WSMP and subsequent development of the 2030 Study Area would not significantly affect the SSHCP planning process or implementation. However, if land use authorities seek to provide water to other areas outside the 2030 Study Area, the impact on the SSHCP is uncertain and thus potentially significant. Under the agreement approved by the SCWA Board of Directors, SCWA will provide funding to facilitate and expedite completion and implementation of the SSHCP. The agreement, approved on July 15, 2003, provides funding to complete the SSHCP with $200,000 per year for 2 years. As a component of the approved agreement, a work plan for completing the SSHCP, which identifies milestones and defines a timetable, will be submitted to SCWA before release of approved funding. Implementation of this measure is intended to expedite the development of the SSHCP, which would further define the areas to be protected. Early identification of these protected areas would reduce the potential for impact; however, because of the uncertainty of future land use decisions that could result in development of land outside the 2030 Study Area, the impact is potentially significant and unavoidable.
	Residual Impact: Potentially significant and unavoidable
4.7 Water Resources	
	Impact 4.7-1: Deliveries to SWP and CVP Customers. Proposed surface water diversions at Freeport would reduce annual average SWP and CVP south-of-Delta deliveries by 6,000 af and 4,000 af, respectively, compared to no-project conditions. This represents about a 0.2% decrease in annual average deliveries. This degree of change is too small to alter water supply management actions by south-of-Delta water agencies, so post-project conditions would not result in significant impacts.
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
	Impact 4.7-2: Operational Effects during Reverse Flow in the Sacramento River. Diversion of water at the Freeport intake during low flow and reverse flow conditions would reduce the volume of water available to dilute effluent discharged at the SRWWTP, requiring the plant to suspend discharge and store effluent for additional periods, and would potentially cause diluted effluent to be diverted at the Freeport facility. Modeling and analysis indicate that operation of the Freeport diversion would reduce Sacramento River flow by 112

Table 2-2
Summary of Project Impacts and Mitigation

	cfs on average and by 88 cfs during low-flow periods. This reduction in flow would require SRWWTP to extend effluent storage by an estimated 2 minutes. Modeling also shows that the maximum quantity of effluent potentially entrained by Freeport diversions under most likely conditions would be very small (less than 3%) and would occur for the short period of a few hours (less than 4 hours) at the most. FRWA and SRCSD would coordinate operations with automated streamflow monitoring equipment, so that Freeport diversions would neither trigger effluent storage when it would not otherwise be necessary, nor cause SRWWTP to exceed effluent storage capacity. Water would not be diverted at the intake facility during peak higher high-tide or during extreme low-flow/high-tide events, if there is potential to divert water that may contain treated wastewater, or exacerbate water quality concerns associated with reverse flow conditions. Because the SRCSD and FRWA have agreed to coordinate operating to minimize potential conflicts with diversions of Sacramento River water and discharge of treated wastewater, water quality effects would be less than significant.
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
	Impact 4.7-3: Operational Water Quality Effects in the Sacramento River Downstream of Diversion. Diversion of water at the Freeport intake would incrementally reduce flow in the Sacramento River, reducing capacity for dilution of SRWWTP effluent discharges and other downstream discharges. Indirect effects of residential and commercial growth resulting from the additional water supplies would result in generation of additional wastewater to be treated at SRWWTP, increasing quantities of typical contaminants to the river associated with wastewater, including inorganic salts, nutrients (e.g., nitrogen and phosphorus), and trace inorganic and organic constituents. Modeling shows that the combination of reduced background river flows (direct effect) and additional wastewater flows from induced growth (indirect effect) would reduce the effective dilution ratio by about 2.3% under long-term average monthly river flow, and about 4.6% under the single lowest average monthly river flow. Flow reduction as a result of water diversion would constitute a small fraction of background river flow and only slightly reduce dilution of SRWWTP discharges under typical conditions. Because dilution capacity would not change substantially with or without the project, and SRWWTP would adhere to a minimum river to effluent dilution ratio of 14:1, operational water quality impacts on downstream flows of the Sacramento River would be less than significant.
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
	Impact 4.7-4: Operational Effects on Delta Water Quality. Diversion of surface water from the Sacramento River would slightly reduce the volume of fresh water flowing to the Delta. Modeling results showed that the reduced freshwater flow would change the position of X2, a contour line of a specific salinity concentration used as an indicator of water quality in the western Delta. Average chloride concentrations were modeled at key Delta water diversion locations and were found to increase by up to 0.5 milligrams per liter (mg/l) at each location compared to background average concentrations that range from 67 mg/l to 78 mg/l. Post-project water quality at

Table 2-2
Summary of Project Impacts and Mitigation

	these locations would be essentially the same as existing conditions. Operational water quality impacts on Delta water quality would be less than significant.
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
	Impact 4.7-5: Potential Contaminant Discharge during Construction. Construction of project facilities would involve the use of substances, such as fuels, oils, concrete, and other materials, that are harmful if released to the aquatic environment, and soil-disturbing activities that could result in erosion and contribution of sediment to surface waters. Because FRWA, SCWA, and their contractors would obtain all necessary state and local permits and clearances necessary for construction, and implement appropriate Best Management Practices (BMPs) to protect surface waters from contamination, construction-related water quality impacts would be less than significant.
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
	Impact 4.7-6: Groundwater Elevation and Consistency with Water Forum Sustainable Yield. 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 Study Area. This volume, combined with other pumping in the Central Basin (including pumping for groundwater remediation) would be below the Water Forum sustainable yield recommendation of 273,000 afy for all modeled scenarios except 2b, in which no reuse of remediated groundwater is assumed. Recent agreements between Sacramento County, SCWA, and Aerojet/McDonnell Douglas suggest that some reuse of the water would occur. The agreements are included as Appendix G. Stabilized groundwater elevations at the Central Basin cone of depression under the modeled scenarios would range from approximately -50 feet msl to -85 feet msl (including Alternative 2b), which are all substantially higher than the Water Forum projected level of -116 to -130 feet msl. Because groundwater pumping associated with the 2002 Zone 40 WSMP would not cause sustainable yield recommendations to be exceeded except under an unlikely cumulative scenario, and groundwater levels at the Central Basin cone of depression are projected to be higher than those determined to be acceptable to the Water Forum, this impact would be less than significant.
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
	Impact 4.7-7: Hydrologic Impacts on the Cosumnes River. Groundwater pumping for water supply in 2030 associated with the 2002 Zone 40 WSMP could range from about 54,000 to 74,000 afy, as compared to a 2000 Baseline level of about 60,000 afy. Modeling shows that Cosumnes River flows would be virtually unchanged as a result of the 2002 WSMP, as would average annual Cosumnes River flow volume and average fall flows (September through November). Similarly, modeling showed virtually no change in Cosumnes River flow

Table 2-2
Summary of Project Impacts and Mitigation

under cumulative scenarios, as compared to the 2000 Baseline. Consequently, the 2002 Zone 40 WSMP would not adversely change the duration, timing, or frequency of periods when surface flow in the Cosumnes River would occur. This would be a less-than-significant impact.
Environmental Mitigation Guideline: No mitigation is necessary.
Residual Impact: N/A
Impact 4.7-8: Groundwater Quality. Implementing the 2002 Zone 40 WSMP would result in groundwater elevations that are generally higher than the 2000 Baseline condition and, depending upon pumping distribution and localized groundwater conditions, higher or lower than spring 2000 levels. Lowering of groundwater could result in deterioration of groundwater quality in some areas of the Central Basin because of uprising of poorer quality water from the lower aquifer zone. In the future, elevated manganese and iron levels may occur in groundwater but at levels that would represent an aesthetic, rather than health-related impact. Continued treatment of manganese and iron is expected for municipal wells in the future. Additionally, arsenic levels are not anticipated to exceed Title 22 standards. This would be a less-than-significant impact.
Environmental Mitigation Guideline: No mitigation is necessary.
Residual Impact: N/A
Impact 4.7-9: Movement of Groundwater Contaminants. Implementing the 2002 Zone 40 WSMP would result in groundwater elevations that are generally higher than the 2000 Baseline condition and, depending upon pumping distribution and localized groundwater conditions, higher or lower than spring 2000 levels. Localized lowering would result in no substantial increase in the rate of groundwater contaminant movement. Current remediation efforts would continue and would increase over time. This would be a less-than-significant impact.
Environmental Mitigation Guideline: No mitigation is necessary.
Residual Impact: N/A
Impact 4.7-10: Land Subsidence. Modeling conducted for the 2002 Zone 40 WSMP shows that groundwater elevations would be generally higher than the 2000 Baseline condition and, depending upon pumping distribution and localized groundwater conditions, higher or lower than spring 2000 levels. Lowering of groundwater levels is unlikely to result in substantial land subsidence. Historical data on subsidence in relation to past groundwater decline indicate that the area is not susceptible to substantial land subsidence with the anticipated future groundwater level decline. The range of land subsidence estimated to occur with the projected groundwater decline is 0.13 to 0.35 feet, and would occur over the course of several decades. Because no substantial land subsidence is expected to occur, this would be a less-than-significant impact.

Table 2-2
Summary of Project Impacts and Mitigation

	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
Impact 4.7-11: Efficiency of Wells. Implementing the 2002 Zone 40 WSMP would result in groundwater elevations that are generally higher than the 2000 Baseline condition and, depending upon pumping distribution and localized groundwater conditions, higher or lower than spring 2000 levels. Lowering of groundwater may result in reduced efficiency of existing groundwater wells and the need to deepen existing wells and increase pumping at deepened wells. This reduced efficiency, however, would translate into an economic, rather than environmental impact, as the volume and quality of groundwater available are not expected to decline following well deepening or increased pumping. The economic effects would be the increased costs associated with the implementation of these actions. This is a less-than-significant impact.	
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
4.8 Cultural Resources	
Impact 4.8-1: Disturbance of Cultural Resources. Development of the 2002 Zone 40 WSMP (water treatment plant, wells, storage facilities, groundwater treatment facilities, and pipelines) would include the removal of vegetation and soils, through grading and excavation activities. Because historical cultural resources may be present within subsurface soils, these grading and excavation activities could cause the disturbance of these resources. The disturbance of previously unidentified cultural resources would be a potentially significant impact.	
	Environmental Mitigation Guideline: SCWA shall: ▸ comply with all federal, state, and local regulations regarding the protection and preservation of cultural and paleontological resources; ▸ complete project-specific cultural resources record searches and field surveys, as needed; ▸ include consideration of paleontological resources during record searches and field surveys; ▸ plan construction activities to avoid important cultural sites identified by record searches and field surveys, as feasible; ▸ develop and implement an appropriate treatment plan to evaluate affected archaeological sites that cannot be avoided by construction; ▸ develop and implement a paleontological resources treatment plan to evaluate paleontological resources that may be discovered during construction; and

Table 2-2
Summary of Project Impacts and Mitigation

	▸ develop and implement a cultural resources and paleontological resources training program for construction personnel.
	Residual Impact: Less than significant
Impact 4.8-2: Effect of Varying Flows/River Stage on Cultural Resources along the Lower Sacramento River Bank Near Freeport. Implementation of the 2002 Zone 40 WSMP would result in Sacramento River flows at Freeport that differ slightly from existing conditions. These flow variations are not of sufficient frequency or magnitude to cause either significant exposure or inundation of cultural resources and thus represent a less-than-significant impact on cultural resources.	
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
4.9 Geology and Soils	
Impact 4.9-1: Changes in Geologic Structures. Development and planning of facilities proposed in the 2002 Zone 40 WSMP would require geotechnical studies and design guidelines, to identify and minimize any hazardous geologic changes to the underlying substrata. Therefore, changes in geologic substructures would be less than significant.	
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
Impact 4.9-2: Exposure to Major Geologic Hazards. Because the project area is relatively flat, the project is not expected to be exposed to landslides. Given the relative stability of the geologic subsurface environment in the project area and the geotechnical/soils studies and proper design practices that would be required in all future facilities, exposure to geologic hazards would be a less-than-significant impact.	
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
Impact 4.9-3: Increased Soil Erosion by Wind or Water. Soils in Zone 40 and along the Sacramento River could be exposed to wind and water erosion. Further, construction activities (i.e., trenching, dewatering) could result in the sedimentation of local waterways and the Sacramento River. This would be a significant impact.	
	Environmental Mitigation Guideline: ▸ Projects proposed in the 2002 Zone 40 WSMP shall comply with the Regional Water Quality Control Board's (RWQCB) requirements for discharges from general construction activity and trench dewatering in accordance with National

Table 2-2
Summary of Project Impacts and Mitigation

	Pollutant Discharge Elimination System (NPDES) requirements. These requirements call for the implementation of a Storm Water Pollution Prevention Program (SWPPP) identifying Best Management Practices (BMPs) to be employed during and following project construction to control soil erosion and waste discharges into waterways. BMPs may include, but would not be limited to, construction of berms and runoff diversion ditches, construction of temporary cofferdams to dewater work areas, hydroseeding, use of sediment detention devices, and similar measures. The SWPPP shall also specify measure for removing sediment from water pumped for trench dewatering before it is released to waterways. ▸ SCWA shall prepare on a project-by-project basis an Erosion Control plan that complies with the County's Erosion and Sedimentation Control Ordinance (1993).
	Residual Impact: Less than significant
4.10 Public Health and Safety	
	Impact 4.10-1: Public Health Impacts Associated with Recycled Water. Use of recycled water for nonresidential landscape irrigation is proposed for portions of the 2030 Study Area. The recycled water would comply with Title 22 requirements for unrestricted use. Because recycled water would comply with Title 22 health requirements and irrigation of residential landscaping is not proposed, significant adverse health effects are not anticipated. This would be a less-than-significant impact.
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
	Impact 4.10-2: Use of Hazardous Materials During Operations. The water treatment plant would use, store, and transport hazardous materials (e.g., chlorine, caustic soda, lime) in accordance with applicable federal, state, and local regulations for hazardous materials. This would be a less-than-significant impact.
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
4.11 Public Services and Utilities	
	Impact 4.11-1: Adequacy of Water Supply. The proposed project would not, in and of itself, increase demand for water in the Zone 40 study area. Instead, the project would implement the necessary facilities to meet existing and projected water demand in the 2030 Study Area. Because SCWA has secured or is in the process of securing adequate surface water and groundwater supplies, and because the proposed project would not substantially deplete existing water supplies, no significant water supply impacts would be anticipated.

Table 2-2
Summary of Project Impacts and Mitigation

	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
Impact 4.11-2: Relationship of 2002 Zone 40 Master Plan to the Sacramento Regional Wastewater Treatment Plant. The 2002 Zone 40 WSMP would implement the necessary facilities to supply water to the 2030 Study Area of Zone 40. A portion of the additional water supplied to the 2030 Study Area would be returned to the SRWTP via the municipal sewer system. As growth occurs in the 2030 Study Area, the volume of water needed, and consequently the volume of wastewater generated, would increase incrementally over the planning period. SRCSD has accounted for future growth within the 2030 Study Area in its Water Quality Impacts Beyond 2020 discussion of the SRWTP 2020 Master Plan.	
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A
Impact 4.11-3: Impacts on Existing Utility Corridors. Implementation of the 2002 Zone 40 WSMP could potentially disrupt existing aboveground and underground utility facilities in the 2030 Study Area. During the design phase, the County would consult with the local utility companies that operate utility facilities in the project area to avoid potential disturbances, where possible. Because the County would consult with the local utility companies prior to construction of the proposed project, less-than-significant impacts would occur.	
	Environmental Mitigation Guideline: No mitigation is necessary.
	Residual Impact: N/A