PILLSBURY WINTHROP SHAW PITTMAN LLP
CHRISTOPHER J. MCNEVIN #109603
725 South Figueroa Street, Suite 2800
Los Angeles, CA 90017-5406
Telephone: (213) 488-7100
Facsimile: (213) 629-1033

Attorneys for Applicant
ORANGE COUNTY WATER DISTRICT

STATE WATER RESOURCES CONTROL BOARD

OF THE STATE OF CALIFORNIA

In the Matter of State Water Resources Control Board Hearing on Water Rights Applications 31165 and 31370 of San Bernardino Valley Municipal Water District and Western Municipal Water District of Riverside County; Application 31174 of Orange County Water District; Application 31369 of Chino Basin Watermaster; Application 31371 of San Bernardino Valley Water Conservation District; and Application 31372 and Waste Water Change Petition WW-0045 of the City of Riverside.	Application No. 31174 JOINT DIRECT TESTIMONY OF LESLIE MOULTON AND CHRIS ROGERS, ON BEHALF OF ORANGE COUNTY WATER DISTRICT FOR WATER RIGHTS APPLICATION 31174 Date: May 2, 2007 Time: 9:00 a.m. Location: Cal EPA Building Coastal Hearing Room

ESA

225 Bush Street
Suite 1700
San Francisco, CA 94104
415.896.5900 phone
415.896.0332 fax

www.esassoc.com

DIRECT TESTIMONY OF LESLIE MOULTON AND CHRIS ROGERS
ON BEHALF OF THE ORANGE COUNTY WATER DISTRICT
FOR WATER RIGHTS APPLICATION 31174

We, Leslie Moulton and Chris Rogers, declare and state as follows: We make this declaration as our direct testimony for the State Water Resources Control Board ("SWRCB") Hearing on Water Right Application 31174 of Orange County Water District ("OCWD or District"). This Declaration is **Exhibit OCWD 4-1**.

This testimony addresses the environmental impact analysis process and findings for the proposed water rights application. ESA worked with the District to prepare an Environmental Impact Report (EIR) on the District's Application to Appropriate Santa Ana River Water in accordance with the California Environmental Quality Act (CEQA). The Recirculated Draft Program EIR (SCH 2002081024) was circulated for public review in March 2006 and the Final EIR was certified in July 2006.

Background and Qualifications

I, Leslie Moulton, am the Director of the Water Practice for Environmental Science Associates (ESA), a position I have held for 13 years. I have been with ESA for 23 years. My duties include: management of environmental planning, impact analysis and environmental compliance documentation in accordance with the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA) and related federal, state, and local environmental regulations; impact analysis and mitigation planning; and permitting for water resource related programs and projects. I was the Project Director at ESA, under contract to the OCWD, for preparation of the Program EIR on the Orange County Water District's Application to Appropriate Santa Ana River Water. My resume is attached as **Exhibit OCWD 4-2**. I hold a BA degree in Human Biology from Stanford University.

I, Chris Rogers, am a Senior Biologist with Environmental Science Associates, a position I have held for 7 years. I have more than 20 years of professional experience. My duties include: field survey, resource assessment and impact evaluation; wetland delineation, botanical survey, CEQA and NEPA impact analysis for biological resources, environmental permitting, mitigation planning and implementation, and construction monitoring. As the Senior ESA Biologist, I conducted the field evaluations and impact analysis of biological resources for the PEIR on the District's Application to Appropriate SAR Water. My resume is attached as **Exhibit OCWD 5-1**. I hold a B.S. degree in Biology, emphasis in Botany, from San Francisco State University and have also completed graduate studies there in Ecology and Systematics.

The following written testimony was prepared by us and under our supervision, with assistance from ESA staff members Tom Barnes and Jennifer Jacobus. A true and correct copy of the entire Program EIR (i.e., Draft EIR, Project Summary Report, Final EIR, CEQA Findings, and MMRP) is incorporated into our testimony (**Exhibit OCWD 1-23**).

CEQA/NEPA Evaluation of OCWD's Past, Present, and Future Diversion and Recharge Projects and Activities

Overview

The diversion and groundwater recharge facilities identified in OCWD's Water Rights Application 31174 that are associated with the District's 505,000 acre-feet per annum (afa) requested maximum wet-year diversion of Santa Ana River water represent a mix of both existing facilities, completed or in progress at the time of OCWD's submittal of the application in 1992, and facilities proposed for development at the time of the application. Since the application was submitted, (and supplemented in 1998), OCWD has processed additional CEQA environmental review documents to support implementation of some of the originally proposed projects. In addition, in 2002 the District contracted with ESA to prepare a Program EIR (PEIR) on its Application to Appropriate Santa Ana River Water to address select projects as well as the increase in SAR diversion over existing conditions.

As a result of this history, there are four components of the environmental impact analysis for OCWD's past, present and future diversion and recharge projects reflected in the application:

1. Past. Prior to 1998, OCWD had undertaken timely CEQA review of its past projects; these prior OCWD CEQA documents were compiled in the Program EIR, Appendix M (Exhibit OCWD 1-23) except one, which is provided as Exhibit OCWD 1-32. OCWD had completed the CEQA environmental review process for its existing facilities, where applicable.[1] In addition, the U. S. Army Corps of Engineers (Corps) also completed NEPA compliance and prepared an EIS on the Prado Dam Operation for Water Conservation to create a water conservation pool up to elevation 505 behind Prado specifically to support OCWD water recharge efforts (not for the Corps' primary flood control purposes) (summarized in PEIR Appendix M-6 in Exhibit OCWD 1-23).

2. Present. OCWD undertook separate, project-level CEQA analysis of several projects, including: Basin cleaning devices for the Miller Basin, Weir Pond #3, Five Coves, the Anaheim and Kramer system recharge basins, and Burris and Bond Pits (categorical exemptions)(Exhibits OCWD 1-23 and OCWD 1-26); Santiago Creek Recharge Turnout (MND) (Exhibit OCWD 1-23); River Trails (River View) Recharge Basin (MND) (Exhibit OCWD 1-23); La Jolla Recharge Basin (EIR)(Exhibit OCWD 1-25); and the Prado Basin Water Conservation Feasibility Study EIR (increasing the flood season elevation to elevation 498 and not the 508 elevation shown in the original application) (Exhibit OCWD 1-27).

3. Present. OCWD contracted with ESA to prepare project-level CEQA analysis of the Anaheim Lake Expanded Recharge Project and the Santiago Creek Expanded Recharge Project. This is provided in the Program EIR, Chapter 4 (Exhibit OCWD 1-23).

4. Future. OCWD contracted with ESA to undertake CEQA review of its remaining future projects, via a specific, project-level analysis of the impacts of increased SAR diversion and recharge over existing 2002 conditions (PEIR, Chapter 4), and a program-level analysis of the impacts of physical construction of the remaining recharge and storage facility projects (PEIR Chapter 5.0) (Exhibit OCWD 1-23).

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[1] OCWD acquired Anaheim Lake and Warner Basin prior to the enactment of CEQA in 1970.

Table 1 presents a summary of the recharge and storage facilities identified in OCWD's application updated to show the current status of these projects and their CEQA and/or NEPA review[2]. The left-hand columns in this table present the facilities as they were originally listed for the SWRCB in Application A031174 (Table 4). The columns to the right provide updated information on these facilities as of April 2007.

In the course of leading the environmental review of the projects covered in the PEIR, and in the course of preparing to testify in this matter, my team reviewed all of the relevant CEQA work done by others for OCWD diversions and recharge activities, as well as the Corps' NEPA documentation on relevant water conservation activities at Prado Reservoir, so that we have a full picture of the impacts of all OCWD diversion and recharge projects. The following summarizes the chief environmental impact findings and mitigation commitments for CEQA and NEPA completed to date on the District's past, present and future projects.

Past Projects / Existing Facilities

Pre-CEQA Facilities

OCWD has engaged in water conservation and groundwater recharge activities on the SAR since 1933.[3] CEQA was enacted in 1970. Consequently, many of OCWD's existing recharge facilities including diversion structures, in-stream recharge activities and many off-channel spreading basins, such as Conrock Basin, Huckleberry Pond, Anaheim Lake, Miller Basin, and Warner Basin were approved and in operation prior to the enactment of CEQA in 1970, and as a result no CEQA analysis was conducted for these facilities and operations. Figure C-1, in PEIR Appendix C, provides a series of historical aerial photographs of the SAR at the OCWD spreading area in approximately 15 years increments from 1938 through 1970 that illustrates the successive development of OCWD's in-stream and off-river system recharge system facilities by 1970.

CEQA and NEPA for Past Projects

As shown on Table 1, under the first subsection entitled "Current Conditions," OCWD completed five CEQA documents on past projects implemented after the enactment of CEQA in 1970 and prior to submittal of its 1992 application to the SWRCB; the Corps prepared one NEPA document in 1992. PEIR Appendix C (Exhibit OCWD 1-23) summarizes the history of OCWD past projects and associated CEQA documentation completed prior to 2002, when OCWD initiated preparation of the Program EIR on its Application to Appropriate Santa Ana River Water. The appendix presents a summary of the key impact and mitigation findings for OCWD's existing facilities (including an impact and mitigation summary table, Table C-2). PEIR Appendix M (Exhibit OCWD 1-23) presents copies of the previous CEQA and NEPA documents (either in their entirety or as excerpts of the impact and mitigation findings summary).

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2 Table 1 presented here was originally published in OCWD's Final PEIR as part of the response to comments from the SWRCB. The SWRCB staff asked OCWD to complete such a table to help it reconcile the project list presented in the original application with the updated list presented in the PEIR and to track the CEQA/NEPA review status of the projects. Since Table 1 was presented in the Final PEIR response to comments it has been updated to reflect the completion of additional CEQA documentation.

3 OCWD was created by the California Legislature in 1933.

Table 1: Comparison of Table 4a of Application with Tables 2-3 and 3-1 of PEIR (Updated April 2007)

Projects Listed in Application A031174 (Table 4A)				Projects Listed in Draft PEIR Tables 2-3 and 3-1 - UPDATED APRIL 2007									
PURPOSE OF USE[1]	DIRECT DIVERSION QUANTITY		STORAGE AMOUNT	PURPOSE OF USE(1)	DIRECT DIVERSION QUANTITY (7)		STORAGE AMOUNT (7)	APPLICABLE CEQA / NEPA DOCUMENTATION				RECHARGE CAPACITY	STORAGE CAPACITY
	RATE[2] (CFS)	AMOUNT (AF/Y)	AF Per Annum		RATE(2) (CFS)	AMOUNT (AF/Y)	AF Per Annum	TITLE	DATE	LOCATION	Project-level CEQA/NEPA complete?	(AF/Y)	(AF/Y)
				EXISTING FACILITIES WITH PREVIOUS PROJECT-LEVEL CEQA AND/ OR NEPA COMPLETED									
CURRENT CONDITIONS				**CURRENT CONDITIONS (Table 2-3)**									
Deep Basins[3]				Deep Basins(3)									
Anaheim/Kraemer System	170	123,080	3,500	Anaheim/Kraemer System	280	91,800		Anaheim Lake acquired in 1957 prior to CEQA. Kramer Basin addressed in OCWD's Proposed Acquisition of Land for Development of Additional Off-channel Water Spreading Grounds, Draft EIR	1975	PEIR App. M-2 Exhibit OCWD 1-23	✓	91,800	
Burris/Santiago System	170	123,080	17,700	Burris/Santiago System	70	60,600		Burris Pit Water Conservation Facility FEIR; Santiago Creek Replenishment Program Pump Station and Pipeline, IS/Traffic Study	1976; 1986	PEIR App. M-3 / M-4 Exhibit OCWD 1-23	✓	60,600	
Warner System	40	28,960	4,400	Warner System	130	16,200		Warner Basin acquired in 1966 prior to CEQA.			NA	16,200	
Santa Ana River Groundwater Recharge	100	72,400		Santa Ana River Groundwater Recharge	100	70,400		Santa Ana River between Ball Road and Imperial Highway, EIR	1972	PEIR App. M-1 Exhibit OCWD 1-23	✓	70,400	
Off River System Groundwater Recharge	20	14,480		Off River System Groundwater Recharge	65	11,000		Santa Ana Rubber Dam and Bypass Project Negative Declaration	1991	PEIR App. M-5 Exhibit OCWD 1-23	✓	11,000	
Wildlife/Water Quality Enhancement [4]	100	*72,400*		Wildlife/Water Quality Enhancement [4]				Prado Wetlands Reconstruction Project MND	1996	Exhibit OCWD 1-32	✓		
Prado Dam (Conservation elev = 505)			25,800	Prado Dam (Conservation elev = 505)			25,800	Prado Dam Operation for Water Conservation Final Report and EIS	1992	Summarized in PEIR App. M-6 Exhibit OCWD 1-23	✓	-	25,800
SUBTOTAL	500	362,000	51,400		645	250,000	25,800					250,000	25,800
				PROPOSED FACILITIES WITH PROJECT-LEVEL CEQA / NEPA COMPLETED									
NEAR-TERM PROJECTS				**NEAR-TERM PROJECTS (Table 3-1)**									
Deep Basin Cleaning Device[5]				Deep Basin Cleaning Device(5)									
Anaheim/Kraemer System (including Miller)	50	36,200		Anaheim/Kraemer System		36,000		Anaheim and Kraemer: Cat Ex	Apr-07	Exhibit OCWD 1-26	✓	36,000	
				Miller Basin		7,000		Miller Basin: Cat Ex	May-03	PEIR App. M-10; Exhibit OCWD 1-23	✓	7,000	
				Weir Pond #3		8,000		Weir Pond #3: Cat Ex	May-03		✓	8,000	
				Five Coves		8,000		Five Coves: Cat Ex	May-03		✓	8,000	
Burris/Santiago System		14,480											
Warner System	40	28,960											
Prado Dam (Conservation elev = 508)			6,800	Prado Dam (Flood season elev = 498)[6]			10,000	EIR for Prado Basin Water Conservation Feasibility Study (SCH# 2004051004)	2006	Exhibit OCWD 1-27	✓		10,000
				La Jolla Recharge Basin		9,000		La Jolla Recharge Basin EIR (SCH # 2003041190)	2006	Exhibit OCWD 1-25	✓	9,000	
				Mira Loma Recharge Basin (moved to long-term)		-							
				Santiago Creek Expanded Recharge		3,000		Program EIR for OCWD Application to Appropriation Santa Ana River Water (SCH# 20020821024)	2006	Exhibit OCWD 1-23	✓	3,000	
				Anaheim Lake Expanded Recharge		2,000					✓	2,000	
				Santiago Creek Replenishment Program [7]		10,000		Santiago Creek Recharge Turnout ND	2000	PEIR App. M-7 Exhibit OCWD 1-23	✓	10,000	
				River View Recharge Basin [7]		4,000		River Trails (River View) Recharge Basin MND	2000	PEIR App. M-8 Exhibit OCWD 1-23	✓	4,000	
				FORMER LONG-TERM PROJECTS MOVED TO NEAR-TERM									
				Deep Basin Cleaning Vehicles									
				Burris and Bond Pits		25,000		Burris Pit Cat Ex and Bond Pit Cat Ex	Apr-07	Exhibit OCWD 1-26	✓	25,000	
SUBTOTAL		79,640	6,800			112,000	10,000					112,000	10,000
				PROPOSED FACILITIES WITH PROGRAM-LEVEL CEQA COMPLETED. PROJECT LEVEL CEQA/NEPA TO COME									
				FORMER NEAR-TERM PROJECTS MOVED TO LONG-TERM									
	Pro			Mira Loma Recharge Basin		10,000		Program EIR for OCWD Application to Appropriation Santa Ana River Water (SCH# 20020821024)	Jul-06	Exhibit OCWD 1-23		10,000	
LONG-TERM PROJECTS				**LONG-TERM PROJECTS (Table 3-1)**									
Prado Dam (Conservation elev = 514)			23,600	Prado Dam (Conservation elev = 514)			23,600						23,600
Additional Recharge Basins	90	65,160	5,000	Additional Recharge Basins		78,000						78,000	
Gypsum Canyon Reservoir			30,000	Gypsum Canyon Reservoir			30,000						30,000
Aliso Canyon Reservoir			30,000	Aliso Canyon Reservoir			30,000						30,000
				Deep Basin Cleaning Device (BCV)									
				Burris and Bond Pits (moved to near-term)		-							
				Subsurface Collection/Recharge System		10,000						10,000	
				Deep Basin Filtration Recharge		25,000						25,000	
				Recharge Galleries		20,000						20,000	
SUBTOTAL		65,160	88,600			143,000	83,600					143,000	83,600
TOTAL	**800**	**506,800**	**146,800**			505,000	119,400					**505,000**	**119,400**

1. The Purpose of Use for all diversions and storage is for groundwater replenishment for future domestic and irrigation. Irrigation use is approximately 3% of domestic use
2. The Direct Diversion rate shown is a sustainable annualized flow rate. The instantaneous diversion rate for the Deep Basins is 1,000 cfs, but this rate is sustainable for only brief periods
3. The Deep Basins recharge diverted SAR flows to the groundwater basin
4. Not included in total Direct Diversions because flows are returned to SAR after treatment
5. Deep Basin continuous cleaning device will increase percolation rates.
6. Storm flows captured for later release to the SAR for diversion downstream at recharge facilities when capacity becomes available.
7. Amount analyzed in CEQA document

IS = Initial Study
MND = Mitigated Negative Declaration
FEIR = Final EIR
Cat Ex = Categorical Exemption

Overall, these previous CEQA and NEPA documents identified short-term impacts that would occur during construction and long-term impacts associated with facility siting or operation and mitigation measures were adopted to address most of these impacts. Of particular note, OCWD has implemented a substantial mitigation program for habitat compensation and management as well as cultural resource recovery, documentation and relocation, adopted as part of the Corps' 1992 EIS for the Prado Dam Operation for Water Conservation. A few significant and unavoidable impacts associated with these past projects were identified as follows:

- *OCWD's Proposed Acquisition of Land for Development of Additional Off-channel Water Spreading Grounds (EIR, 1975)*: loss of agricultural productivity (37 acres), loss of an existing well used for irrigation, and reduction of sand transport to ocean beaches.

- *Burris Pit Water Conservation Facility (EIR, 1976)*: wildlife displacement, although the site is not a "key" area for any wildlife species and no rare or endangered species were found on the site; loss of some existing spreading/recharge operations; visual effects, long-term commitment of land, and alteration of soil percolation function.

As shown in Table 1, existing OCWD facilities with previous project-level CEQA or NEPA completed provide an existing recharge capacity of 250,000 afa and a storage capacity of 25,800 afa.

Present Facility Projects

Other CEQA documents prepared for OCWD

Since submittal of its application to the SWRCB in 1992, OCWD has pursued implementation of several of the projects originally listed as Near-term projects in the application, to improve and expand its groundwater recharge capabilities (see Table 1, above). In 2000 the District processed CEQA Negative Declarations for both the River Trails (River View) Recharge Basin project and the Santiago Creek Recharge Turnout Project. As described in PEIR Appendix C, all impacts for the Santiago Creek Recharge Turnout Project were found to be less than significant and mitigation measures were adopted to reduce impacts to less-than-significant for the River Trails project.

In 2003 and 2007 OCWD processed two sets of CEQA categorical exemptions for Basin Cleaning Devices to be used in seven recharge basins to improve recharge capacity; these projects do not result in any adverse environmental impacts. (Exhibit OCWD 1-23 (PEIR Appendix M-10) and Exhibit OCWD 1-27, respectively)

In 2006 OCWD certified the EIR for the La Jolla Basin Recharge Project (Exhibit OCWD 1-25). That EIR identified significant impacts in the areas of construction dust, noise, traffic, and biological resources, as well as hydrology and water quality, and OCWD adopted mitigation measures to reduce these effects to less than significant.

OCWD also completed an EIR on the Prado Basin Conservation Feasibility Study in 2006 (for which the Corps completed an EIS) (Exhibit OCWD 1-27). The EIR identified significant impacts to biological resources, cultural resources, water quality due to potential chemical spills from maintenance equipment, and recreation activities, and possible increased need for mosquito abatement. OCWD adopted mitigation measures to address these impacts, including additional habitat compensation and continued habitat management for special status species in accordance with the existing Biological Opinion from the U. S. Fish and Wildlife Service (USFWS), cultural resource recovery and documentation in accordance with the requirements of the State Historic Preservation Office (SHPO), annual maintenance and restoration of recreation areas following inundation, spill prevention plan

implementation for maintenance vehicles and funding for increased mosquito abatement. No significant unavoidable impacts were identified.

2006 Program EIR

OCWD's PEIR for the Application to Appropriate Santa Ana River Water (Chapter 4.0) prepared by ESA addresses two projects at a project-level of detail, such that with certification of that PEIR OCWD could move forward with project construction and operation: the Anaheim Lake Expanded Recharge Project and the Santiago Creek Expanded Recharge project. The Anaheim Lake Expanded Recharge Project involves removing (flattening) three islands that exist now in the lake; this would provide an additional 2,000 afa of recharge capacity. The Santiago Creek project involves installation of a 1,500-foot long pipeline or culvert through an existing parking lot that covers a portion of Santiago Creek in order to increase groundwater recharge. The project would provide 3,000 afa of recharge capacity.

PEIR Table ES-4 Impacts of Proposed Anaheim Lake Expansion Project (Project-Level) and **PEIR Table ES-5** Impacts of Proposed Santiago Creek Expanded Recharge Project (Project-Level) shown below, summarize the impacts and mitigation measures identified for these projects. Implementation of the Anaheim Lake Expanded Recharge project and the Santiago Creek Expanded Recharge project would result in some potential significant impacts, primarily during construction, but mitigation measures were identified and adopted by OCWD that would reduce these potentially significant impacts to less than significant levels for these projects. Neither of these two projects would result in significant, unavoidable impact.

The Anaheim Lake Expanded Recharge Project would result in three impacts that require mitigation (see PEIR Table ES-4). First, construction would contribute sediment and/or pollutants to urban run-off during construction (Impact Hydro-2). This would be mitigated by preparation and implementation of a Storm Water Pollution Prevention Plan that identifies specific best management practice measures to be implemented during construction, in accordance with the requirements of the RWQCB (Measure M-Hydro-1). Second, construction would disrupt nesting birds at Anaheim Lake (Impact Bio-1). This impact would be mitigated by Measures M-Bio-1, M-Bio-2, and M-Bio-3, which require OCWD to conduct pre-construction survey to identify any trees supporting bird nesting and to restrict removal of any trees used for nesting to the non-nesting season when the nests are no longer in use; construction of artificial nesting platforms; and CDFG consultation regarding the cormorant rookery to identify and implement additional protective measures. Finally, while no known cultural resource sites would be disturbed by the project, Impact Cult-1 acknowledges that construction activities could disrupt unknown cultural resources. Adopted mitigation measure M-Cult-1 requires that if potential resources are found during construction, work within 50 feet will be halted, a qualified archaeologist or paleontologist will assess the potential resource, and, if significant, will determine the appropriate next steps in accordance with CEQA Guidelines 15064.5 (f). The Anaheim Lake Expansion Project would result in no impacts associated with operations.

The PEIR identified eight impacts requiring mitigation for the Santiago Creek Expanded Recharge Project. As shown on Table ES-5, five of these impacts are related to short-term construction effects such as noise, traffic, disturbance of contaminated soils, fuel spills from construction equipment, and potential disruption of previously unknown cultural resources. OCWD adopted mitigation measures to reduce these effects to less than significant. The remaining three impacts are associated with facility siting – construction activity within a stream channel and potential effect to historic resources if the parking lot is found to have any historic significance, or operation – potential effects of increased groundwater recharge on transport of potential surface soil contamination. As shown on PEIR ES-5, OCWD adopted measures for these impacts as well.

PEIR TABLE ES-4

ANAHEIM LAKE EXPANSION PROJECT

PROJECT LEVEL SUMMARY OF IMPACTS AND MITIGATIONS

Impact	Mitigation Measure(s)	Level of Significance After Mitigation
4.2. Hydrology and Water Resources		
HYDRO-2: Construction activities associated with Anaheim Lake Expanded Recharge could temporarily add sediment and pollutants to urban runoff and storm water runoff.	M-HYDRO-1: The District will prepare and implement a Storm Water Pollution Prevention Plan as required for coverage under the statewide National Pollutant Discharge Elimination System construction permit. At a minimum, specific measures should include the following: • Stockpiles of loose material shall be covered to prevent wind and water erosion and runoff diverted away from exposed soil. • Concrete wash water will be collected and disposed of in the sanitary sewer. • Fuel storage shall be within secondary containment.	Less than significant.
4.3. Biological Resources		
BIO-1: Implementation of the proposed project at Anaheim Lake could result in impacts to nesting cormorants, herons, egrets, raptors and other birds protected by the Migratory Bird Treaty Act.	M-BIO-1: The identified nesting trees will be removed outside the March 1 – July 31 breeding period. OCWD shall conduct pre-construction surveys for nesting birds within 30 days prior to removing the trees. The results of the surveys shall be forwarded to the USFWS and CDFG. If birds are found to be nesting in the trees to be removed during the survey, the tree removal will be delayed until the nests are no longer in use. M-BIO-2: OCWD shall construct artificial nesting platforms, to replace the number of active nests present during the breeding season before the trees on the island are removed. See Payne and Copes (1990) for successful platform design. M-BIO-3: OCWD will consult with CDFG prior to removing nesting trees to determine what additional measures, if any, will be required to offset project impacts to the cormorant rookery.	Less than significant.
4.4. Land Use and Recreation		
LU-1: The Anaheim Lake Expanded Recharge project could temporarily reduce the availability of recreational resources.	None required.	Less than significant.
4.5. Aesthetics		
AES-1: Construction of the Anaheim Lake Expanded Recharge project would pose temporary aesthetics impacts.	None required.	Less than significant.

PEIR TABLE ES-4

ANAHEIM LAKE EXPANSION PROJECT

PROJECT LEVEL SUMMARY OF IMPACTS AND MITIGATIONS (CONT.)

Impact	Mitigation Measure(s)	Level of Significance After Mitigation
4.6. Air Quality		
AIR-1: Construction activities would emit criteria pollutants.	None required.	Less than significant.
4.7. Cultural Resources		
CULT-1: Implementation of the Anaheim Lake Expanded Recharge project could affect unknown, potentially significant prehistoric and historic resources.	M-CULT-1: Pursuant to *CEQA Guidelines* 15064.5 (f), "provisions for historical or unique archaeological resources accidentally discovered during construction" will be instituted. In the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the District shall consult with a qualified archaeologist or paleontologist to assess the significance of the find. If any find is determined to be significant, representatives of the District and the qualified archaeologist and/or paleontologist would meet to determine the appropriate course of action. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report prepared by the qualified archaeologist according to current professional standards.	Less than significant.
4.8. Geology and Soils		
No impacts.	None required.	No impact.
4.9. Hazards and Hazardous Materials		
No impacts.	None required.	No impact.
4.10. Noise		
NOISE-1: Implementation of the Anaheim Lake Expanded Recharge project would temporarily increase noise in local areas.	None required.	Less than significant.
7.6 Cumulative Impacts		
CM-4: Construction and operation of Anaheim Lake Expanded Recharge projects would not contribute significantly to cumulative environmental impacts.	None required.	Less than significant.

PEIR TABLE ES-5

SANTIAGO CREEK EXPANDED RECHARGE PROJECT

PROJECT LEVEL SUMMARY OF IMPACTS AND MITIGATIONS

Impact	Mitigation Measure(s)	Level of Significance After Mitigation
4.2. Hydrology and Water Resources		
HYDRO-3: Construction activities associated with Santiago Creek Expanded Recharge temporarily could add sediment and pollutants to urban runoff and storm water runoff.	M-HYDRO-2: The District will prepare and implement a Storm Water Pollution Prevention Plan as required for coverage under the statewide National Pollutant Discharge Elimination System construction permit. At a minimum, specific measures should include the following: • Stockpiles of loose material shall be covered to prevent wind and water erosion and runoff diverted away from exposed soil. • Concrete wash water will be collected and disposed of in the sanitary sewer. • Fuel storage shall be within secondary containment • Construction debris including broken concrete will be removed from the creek. • Construction activities in the creek will not occur during the rainy season.	Less than significant.
HYDRO-4: Increased recharge within Santiago Creek could transport contamination from surface soils in the area into the groundwater. Nearby production wells could be affected.	M-HYDRO-3: Prior to implementing the project, the District will conduct a Phase I Site Assessment for hazardous waste and soil contamination for the portion of the Santiago Creek between Hart Park and the SAR. The District will comply with recommendations contained in the Site Assessment to avoid transporting contamination. M-HYDRO-4: If the Site Assessment identifies the potential for contaminated soils to be transported by the project, the District will either redesign the project to avoid this area or remediate the contamination prior to implementation of the project such that no adjacent properties or the groundwater basin would be adversely affected. M-HYDRO-5: The District will notify the owners of active production wells within 500 feet of the lower reach of Santiago Creek between Hart Park and the SAR of the District's intent to recharge groundwater within Santiago Creek. In coordination with these well owners, the District will develop and implement a groundwater monitoring plan similar to the existing plan for the upper reach of the creek that will provide early detection of potential changes to groundwater chemistry resulting from the project. If the monitoring plan identifies adverse effects to water chemistry, the recharge operations causing the effect will cease. The results from periodic groundwater monitoring will be submitted to the RWQCB. M-HYDRO-6: If adverse effects to groundwater quality caused by the recharge project are identified during groundwater monitoring, recharge operations will cease until the condition is resolved.	Less than significant.
4.3. Biological Resources		
BIO-2: Implementation of the Santiago Creek Expanded Recharge project would occur within the creek bed subject to USACE, RWQCB, and CDFG jurisdiction.	M-BIO-4: Prior to construction within Santiago Creek, the District shall obtain a permit from the USACE pursuant to Section 404 of the CWA. The final permit shall be submitted to the SARWQCB in application for certification pursuant to Section 401 of the CWA. M-BIO-5: Prior to construction within Santiago Creek, the District shall obtain a Streambed Alteration Agreement from CDFG pursuant to Section 1600 et seq. of the California Fish and Game Code. M-BIO-6: Prior to construction within Santiago Creek, the District shall consult with CDFG to determine any additional notifications or measures required to offset project impacts.	Beneficial.

TABLE ES-5

SANTIAGO CREEK EXPANDED RECHARGE PROJECT

PROJECT LEVEL SUMMARY OF IMPACTS AND MITIGATIONS (CONT.)

Impact	Mitigation Measure(s)	Level of Significance After Mitigation
BIO-3: Increasing the flow in Lower Santiago Creek from 15 cfs to 30 cfs could affect existing vegetation and encourage riparian habitat.	None required.	Beneficial.
4.4. Land Use and Recreation		
LU-2: The Santiago Creek Expanded Recharge project could conflict with an applicable habitat conservation plan or NCCP.	None required.	Less than significant.
LU-3: The proposed Santiago Creek Expanded Recharge project could temporarily reduce the availability of recreational resources.	None required.	Less than significant.
4.5. Aesthetics		
AES-2: Construction at Santiago Creek would pose temporary aesthetic impacts.	None required.	Less than significant.
4.6. Air Quality		
AIR-2: Construction activities would emit criteria pollutants.	None required.	Less than significant.
4.7. Cultural Resources		
CULT-2: Implementation of the Santiago Creek Expanded Recharge project could affect unknown, potentially significant prehistoric and historic resources.	M-CULT-2: Prior to excavation, a qualified architectural historian shall conduct a survey of the Hart Park construction area. The historian shall determine the potential significance of the Hart Park parking area. The historian shall prepare a report to determine if the project would be in conformance with the Standards for Treatment of Historic Properties identified in Section 106 of the National Historic Preservation Act. The report will identify the significance of the parking area to be affected by the construction and recommend measures to minimize the potential impact. Measures may include minimizing the construction area to avoid construction impacts to side walls and access routes. M-CULT-3: Pursuant to *CEQA Guidelines* 15064.5 (f), "provisions for historical or unique archaeological resources accidentally discovered during construction" will be curated. In the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the District shall consult with a qualified archaeologist or paleontologist to assess the significance of the find. If any find is determined to be significant, representatives of the District and the qualified archaeologist and/or paleontologist would meet to determine the appropriate course of action. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report prepared by the qualified archaeologist according to current professional standards.	Less than significant.

TABLE ES-5

SANTIAGO CREEK EXPANDED RECHARGE PROJECT

PROJECT LEVEL SUMMARY OF IMPACTS AND MITIGATIONS (CONT.)

Impact	Mitigation Measure(s)	Level of Significance After Mitigation
4.8. Geology and Soils		
GEO-1: The Santiago Creek Expanded Recharge Project would be subject to geologic hazards including unstable soils and seismic hazards such as surface rupture, ground shaking, landslides, and liquefaction.	None required.	Less than significant.
GEO-2: The Santiago Creek Expanded Recharge Project would occur within an area that has been identified as a mineral resource zone for aggregate material.	None required.	Less than significant.
4.9. Hazards and Hazardous Materials		
HAZ-1: The Santiago Creek Expanded Recharge project could encounter soil during excavation that has been exposed to contamination.	See M-Hydro-3 and M-Hydro-4.	Less than significant.
HAZ-2: Construction activities within Santiago Creek could result in spilling hazardous materials into the creek.	M-HAZ-1: No refueling of heavy equipment shall be conducted within the creek bed. M-HAZ-2: Drip pans shall be placed under heavy equipment within the creek bed when not in operation.	Less than significant.
4.10. Noise		
NOISE-2: Implementation of the Santiago Creek Expanded Recharge project would temporarily increase noise in local areas.	M-NOISE-1: Prior to construction activities in Hart Park, notices will be sent to neighboring residences within a 1,000 foot radius of the construction area providing the planned construction schedule and including a contact number.	Less than significant.
4.11. Traffic		
TR-2: Construction activities for the Santiago Creek Expanded Recharge project could impact traffic flow and parking in Hart Park.	M-TR-1: Prior to construction, the District shall obtain an encroachment permit from the City of Orange. The encroachment permit will include a traffic control plan that will provide for temporary parking during construction.	Less than significant.
7.6 Cumulative Impacts		
C-4: Construction and operation of Santiago Creek Expanded Recharge would not contribute significantly to cumulative environmental impacts.	None Required.	Less than significant.

Construction and operation of the Santiago Creek Expanded Recharge and Anaheim Lake Expanded Recharge projects would not contribute to significant cumulative environmental impacts. Mitigation measures adopted by OCWD to address project-level construction impacts would reduce the contribution of these projects to potential cumulative effects to less than cumulatively considerable.

Future Projects

OCWD's 2006 PEIR evaluates, at a project-level, OCWD's proposal to increase its SAR water diversions in the future up to a wet-year maximum of 505,000 afa and also evaluates, at a program-level, the future facility projects OCWD proposes to implement to provide the necessary recharge and storage capacity. The PEIR evaluates the full effect of increasing the SAR diversion for recharge to the requested wet-year maximum of 505,000 afa (an increase of up to 255,000 afa over the existing condition of OCWD's 250,000 afa recharge capacity). The detailed analysis is intended to provide the CEQA environmental review needed to support SWRCB approval and consideration of OCWD's full water right application request for SAR diversion and to allow OCWD to pursue expansion of its recharge capacity through its identified future projects without the need to re-evaluate the potential effects of each increment of increased future SAR diversion. On the other hand, for the future recharge and storage facility projects, the PEIR provides program-level review and OCWD does intend to complete additional, project-level CEQA as it pursues implementation of each project.

This section summarizes first the environmental impact findings for OCWD's proposed increase in SAR diversion, addressing specifically the effects on hydrology and biological resources. It then summarizes the program-level impact analysis for the future facility projects. **PEIR Table ES-2** present an overall summary of the impacts to environmental resources identified in this PEIR; (the Anaheim Lake project and Santiago Creek project are discussed in the previous section on Present Facility Projects).

PEIR TABLE ES-2
SUMMARY OF PROJECT IMPACTS

		Future Projects		Specific Projects	
	SAR Water Diversion	Recharge Basins	Storage Reservoirs	Anaheim Lake Expansion	Santiago Creek Expansion
Hydrology	LS	LS/M	LS/M	LS/M	LS/M
Biology	NI	LS/M	PS	LS/M	NI
Land Use/Recreation	NI	LS/M	PS	LS	LS
Aesthetics	NI	LS/M	PS	LS	LS
Air Quality	NI	PS	PS	LS	LS
Cultural Resources	NI	LS/M	LS/M	LS/M	LS/M
Geology	NI	LS/M	PS	NI	LS
Hazards	NI	LS/M	LS/M	NI	LS
Noise	NI	LS/M	PS	LS	LS
Traffic	NI	LS/M	LS/M	LS	LS

PS= Potentially Significant Unavoidable
LS/M = Less than Significant with Incorporation of Mitigation
LS = Less than Significant
NI = No Adverse Impact

Increased SAR Diversion

The PEIR describes the existing facilities and proposed facilities, and evaluates the overall effects of the proposed water appropriation of 505,000 afa and the subsequent groundwater recharge (PEIR Chapter 4). **PEIR Table ES-3:** (not reproduced here; see Exhibit OCWD 1-23) Impacts of Proposed Santa Ana River Diversions (Project-Level) summarizes the impacts evaluated. The PEIR found that no significant impacts would result from the increased SAR diversions or subsequent groundwater recharge. The PEIR examined potential changes in river hydrology and found no change in base flow conditions in the lower Santa Ana River and less-than significant potential changes in the total volume future storm flows reaching the ocean with no appreciable change in the timing, frequency or magnitude of such storm flows. As a result, the PEIR determined that there would be no significant effects on biological resources or other beneficial uses in the lower Santa Ana River. Further, the PEIR determined that the proposed increase in SAR diversion would not result in any impacts to other environmental resources including: land use, aesthetics, air quality, noise, traffic, geology, hazards and cultural resources. These conclusions are described in more detail below.

Hydrology

PEIR Section 4.2 analyzes SAR hydrology and water resources.

Methodology: The EIR analysts compiled records of past and present river flow, based on information from a variety of sources including the state Department of Water Resources, USGS gage data, SAWPA, Santa Ana River Water Master. Along with OCWD, analysts also reviewed future river flow projections prepared by both the USACE and SAWPA (see PEIR Appendix D). ESA's EIR analysts evaluated potential impacts to SAR hydrology below Prado Dam, based on a comparison of existing river flows to future projected flows with implementation of the proposed project.

Under existing conditions in the SAR watershed, flow volumes greater than 570,000 afy already have passed through Prado Dam and OCWD's Main River System (PEIR Figure 4.2-1 and PEIR Table 4.2-2) in wet years. Therefore, the volume of water requested in the District's Application already has been present in the SAR during wet years.

As the SAR watershed continues to develop, even more water is expected to reach the OCWD operations area under future conditions. As water is made available to meet a growing municipal demand, wastewater treatment discharge volumes are expected to increase base flow in the SAR, as shown in PEIR Figure 4.2-5. However, lower water usage rates, recycling, and conservation measures may affect this future flow increase.

Both the USACE and SAWPA have projected future increases in storm and base flows in the SAR. Detailed summaries of both analyses can be found in PEIR Appendix D. PEIR Appendix K provides data supporting USACE and SAWPA flow projection. The projections by both entities exceed the amount of water requested in the District's Application.

The USACE is responsible for the major flood control facilities and operations along the SAR (such as Prado Dam), and has significant expertise in understanding and projecting peak flows on the river for the reasonably foreseeable future. As part of its latest feasibility study for increasing water conservation at Prado Dam,[4] the

[4] USACE, 2004: see PEIR Appendices C and D for additional information. All references are to published documents, or are provided in the PEIR.

USACE estimated future flow variability in the SAR under wet, dry, and average precipitation conditions. The USACE estimates that urbanization will increase flow volume reaching Prado Dam. In a future wet year (2052) with precipitation similar to water year 1978/79, the USACE estimates that 847,000 af could reach Prado Dam. The flow volume at Imperial Highway, approximately nine miles below Prado Dam where OCWD's Main River System begins, would be 868,000 af in a similar year. The USACE projections are based on population growth estimates within the SAR watershed for the year 2052 and the associated effects of urbanization on storm and base flows.

SAWPA has independently projected flow volume in the SAR for the year 2025 under wet, dry, and average precipitation conditions. SAWPA did not take into consideration the effects of increased imperviousness on storm flows and made projections for a shorter period of time than USACE. As a result, SAWPA's projections were lower than the USACE projections. SAWPA estimated the future flow volume at Prado Dam in a wet year could reach 562,300 afy by the year 2025. Unlike the USACE estimates, SAWPA's projections accounted for flow diversions for upper watershed recycling projects and additional flow contributions: the Arundo Removal Program[5] and the High Groundwater Mitigation Project. These programs enhance river flow volumes.

The wet-year annual flow in the SAR has already exceeded the 505,000 AF requested in OCWD's application three times in the last 30 years. Accounting for future upstream diversions, this water availability assessment estimates that a minimum of 654,698 AF is reasonably foreseeable during a future wet year at the OCWD points of diversion due to the projected increases in storm flow and base flow. This volume represents a minimum wet-year volume, assuming that 100 percent of diversions proposed upstream are actually implemented. If less water is diverted upstream of Prado Dam or if recycling efforts divert less water than planned, more water will reach Prado Dam during wet years. In addition, depending on the proposed uses of recycled water, some fraction of the water may return to the SAR, increasing the amount of water reaching Prado Dam. Finally, severe wet years could result in storm flows that exceed those experienced in the past, which also would increase the potential peak flow volume of the river.

Therefore, it is reasonably foreseeable that under future cumulative river conditions, more than 505,000 AF will reach OCWD points of diversion during a wet year when considering the projected increases in base flow and storm flow and after accounting for planned diversions.

Impact Findings: The District's proposed increase in diversions of SAR water would not alter base flows in the lower SAR, but could reduce the amount of future storm flow that would otherwise reach the ocean. This would be a less than significant impact for the following reasons:

- Peak flows will continue to reach the ocean during large storm events that could occur in dry, average, or wet years. The duration and size of the peak flows could be reduced by diversions, but instantaneous peak flow rates would be similar to conditions without the project, depending on how the Army Corps of Engineers operates Prado Dam and the intensities of individual storms.

- No biological resources or other beneficial uses downstream of OCWD's diversions would be adversely affected by the reduction in annual volume or duration of peak flows that would otherwise reach the ocean, because the downstream channel is predominantly concrete lined. (Effects of increased diversions on biological resources are discussed in PEIR Section 4.3.4.)

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5 See PEIR Section 4.3 Biological Resources of the PEIR for an explanation of the Arundo Removal program.

The District's proposed diversion of SAR water could reduce the amount of water that would otherwise reach the ocean. The District would attempt to continue to divert all base flow and as much storm flow as possible to a maximum total diversion of 505,000 afa. Since virtually all base flow is currently diverted, and this diversion is downstream of viable habitat areas, the continued diversion of increasing base flow would result in no impacts. Future diversions of storm flow could result in an overall reduction of water reaching the ocean from existing conditions. The following sections assess the impact of the proposed diversions.

Base Flow. The proposed diversions would not change daily operations or conditions in the lower SAR. River flow would continue to be regulated at Prado Dam in accordance with the USACE-approved Water Control Manual. The District would continue to capture essentially all base flow released from Prado Dam, allowing virtually no base flow to pass through the concrete-lined portion of the SAR and reach the ocean. Base flow is expected to increase due to urbanization, and the District proposes to increase water diversions commensurate with base flow increases.

The continued diversion would result in a condition that is similar to the historical flow regime of the lower SAR. River flow records indicate that the SAR has been dry in the summer downstream of 17th Street in Santa Ana since the USGS began recording stream flow there in 1923, which was ten years prior to the formation of OCWD. Historical literature also suggests that prior to the start of agricultural diversions in the mid-1800s, similar hydrologic conditions existed in Santa Ana such that summer flows percolated into the ground prior to reaching the ocean, leaving the lower reach dry (see PEIR Chapter 2.0). Therefore, the continued diversion of base flow as it increases would maintain existing 2002 baseline conditions (when the NOP for the PEIR was published) and would maintain a hydrologic condition similar to the historical hydrologic condition of the lower SAR. The diversion of base flow would be considered a less than significant impact.

Storm Flow. Flow rates in the lower portion of the watershed are controlled primarily by the operation of Prado Dam. The frequency, timing, and volume of peak storm flow bypassing the District's recharge facilities depend on the rate and volume of water reaching Prado Basin, storage capacity above the dam, tributary flow below the dam, and the operational procedures enacted by the USACE. Previous analyses conducted pursuant to CEQA have evaluated the effects of the operation of Prado Dam, the on-going diversion and recharge operations, and flood control improvements in the river channel (see PEIR Appendix C).

PEIR Figures 4.2-1 and 4.2-3 illustrate the annual variation in SAR flows. Flows over 300 cfs only occur during the winter months. PEIR Figure 4.2-3 shows that OCWD is generally able to divert some storm flow each year. When the river flows are less than 300 cfs, sand berms are constructed in the river bottom to enhance percolation. Two inflatable rubber dams have been installed to allow diversion of river flow out of the river into recharge facilities. When river flows exceed approximately 800 cfs, the sand berms are naturally washed away. When the river flow rate is 1,000 – 2,000 cfs or higher, OCWD lowers the inflatable rubber dams, allowing river water to flow past the recharge area to the ocean.

The District would continue to divert storm flows with existing facilities. As more recharge basin and reservoir storage capacity is constructed, more storm water may be diverted from the river during storm flow events. During any year type (wet, average, or dry), OCWD will attempt to divert as much as possible downstream of Prado Dam up to the total requested 505,000 afa. In a few past years (e.g., 1989/1990, 1960/1961) almost no water reached the ocean due to extremely dry hydrology. USGS river gage data show that less than 5,000 afa has reached Fifth Street in Santa Ana downstream of the OCWD diversion points in 17 different years since 1955.

Most of these low flow years occurred prior to 1970. Although some additional flow enters the river channel downstream of this river gage, the flows measured at Fifth Street are an indication of the magnitude of flows reaching the ocean.

In the future, increased storage capacity above Prado Dam would assist in capturing more storm flow. In addition, increased recharge capacity in Orange County would allow more water to be diverted during moderate flow periods. This would reduce the annual volume of water that would otherwise reach the ocean. Depending on future increases in river flow, the increased diversion capacity could result in less water reaching the ocean than under existing conditions. This would not be considered a significant impact since the total volume of water reaching the ocean annually has steadily increased over the last three decades. The potential reduction in annual flows reaching the ocean would result in a condition more consistent with pre-development conditions. Also, tributary flow entering the river channel downstream of the District's diversion points would flow to the ocean similar to existing conditions.

Even with storage reservoirs and additional recharge capacity, peak flows will continue to reach the ocean during large storms. Given the nature of the storm flows in the watershed, even with all of OCWD's proposed storage and recharge projects in place, it is likely that large storm events could be experienced during any year type (wet, average, or dry) that would result in short periods of extremely high flows that would overwhelm diversion points and continue to the ocean. These high flow rates would be regulated by USACE flood control procedures. It is anticipated that releases from Prado Dam that exceed 3,500 cfs will bypass the OCWD recharge area and reach the ocean. These events can occur during dry years or wet years. However, they occur much more frequently in wet years.

In summary, with storage reservoirs constructed upstream of Prado Dam and increased recharge basin capacity, less storm water may reach the ocean during some years than would occur under current conditions. This is considered a less than significant impact for the following reasons:

1) Peak flows will continue to reach the ocean during large storm events that could occur in dry, average, or wet years. The duration and size of the peak flows could be reduced by diversions, but instantaneous peak flow rates would be similar to conditions without the project, depending on how the Army Corps of Engineers operates Prado Dam and the intensities of individual storms.

2) No biological resources or other beneficial uses downstream of OCWD's diversions would be adversely affected by the reduction in annual volume or duration of peak flows that would otherwise reach the ocean, because the downstream channel is predominantly concrete lined. (Effects of increased diversions on biological resources are discussed in PEIR Section 4.3.4.)

3) Increased runoff intensity caused by upstream urbanization will increase peak flows reaching Prado Basin during storms which will increase frequency of releases exceeding 3,500 cfs.

Beneficial Uses. The SARWQCB has designated beneficial uses of the SAR for Reach 1 and 2 (see PEIR Figure 4.2-6). Reach 1 is designated with REC1, REC2, and intermittent WILD and WARM beneficial uses. Existing conditions in Reach 1 would not be affected by the continued diversion of virtually all base flow. Further, the Orange County Flood Control District diverts dry weather flows at the I-405 crossing to improve water quality at downstream beaches. Additional base flow at the I-405 crossing would make it more difficult to divert dry weather urban runoff and could adversely affect ocean water quality.

Reach 2 is designated with REC1, REC2, WARM, WILD, RARE, AGR, and GWR (groundwater recharge) beneficial uses. The proposed project would not change the current conditions in the river with respect to beneficial uses and would help to achieve the GWR beneficial use. The project would benefit groundwater storage and water supply in the region and reduce overall demands for imported water in the SAR watershed. As Southern California is required to reduce its use of Colorado River water, the SAR remains a vital source of local water supply. The continued diversion would have no adverse impacts to designated beneficial uses of the SAR.

Upstream Water Rights. OCWD's proposed diversions would have no effect on river flow upstream of Prado Basin. Future flows will likely increase irrespective of the District's appropriation permit. The proposed project provides the means to beneficially use water that reaches Prado Basin after leaving the upper watershed. This complies with the 1969 Stipulated Judgment, and would not impinge on the rights of upstream entities under the Judgment. The continued diversion would have no adverse impacts to other water rights to SAR water.

USACE Reach 8 and 9. Below Prado Dam, the volume and rate of water discharged from the dam are dictated by the terms of the USACE Water Control Manual, which has been reviewed pursuant to CEQA and NEPA and approved by the USACE.[6] Water releases from Prado Dam are adjusted to match OCWD's groundwater recharge capacity when possible to minimize flow passing OCWD's operations area.

The proposed project would not impact USACE Reaches 8 and 9 between Prado Dam and Imperial Highway. Future projects proposed by the District to increase the capacity of the conservation pool behind Prado Dam could affect flow rates below the dam. If the operation of Prado Dam is modified to conserve greater volumes of water for release during dry weather periods, average flow during the dry weather periods could increase in Reaches 8 and 9 and at OCWD's Main River System. Projects related to the operation of Prado Dam will be reviewed pursuant to NEPA separately by the USACE. The continued diversion would have no adverse impacts to USACE Reaches 8 and 9.

Water Quality. Water quality in the SAR is vulnerable to pollution potentially transported by treated wastewater effluent, storm water, urban runoff, upper-watershed groundwater, and accidental spills. The proposed project would not change this existing condition.

The groundwater basin is currently recharged primarily with SAR water. The quality of the SAR water is not anticipated to diminish as flows increase since much of the increased base flow will continue to be attributable to treated wastewater discharges. The quality of these discharges is regulated by the SARWQCB to protect beneficial uses of the SAR, which include groundwater recharge. The proposed project would not affect beneficial uses or water quality objectives of the river as assigned in the Basin Plan. No impacts to SAR water quality or groundwater quality are expected to result from the proposed project.

The District maintains a monitoring program to assess potential long-term water quality trends that could affect the groundwater basin. In 2004, the District conducted the SAR Water Quality and Health study to evaluate SAR water quality and potential health risks. Based on the data collected during the study it was determined that the SAR and groundwater met all water quality standards and guidelines for organic and inorganic contaminants in

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6 USACE, 1994

drinking water. Furthermore, no chemicals of wastewater origin were identified at concentrations that would jeopardize public health in the SAR, in the infiltration basins, or in groundwater.[7]

Future management of the SAR as a critical regional water supply will continue to be the responsibility of the District, DHS, upstream water districts, the SARWQCB, and SAWPA. The District's application to the SWRCB for water rights will not alter this condition or adversely affect water quality of the river or groundwater.

Groundwater. The District's modeling of the Orange County groundwater basin indicates that the basin can be managed effectively to yield 460,000 to 490,000 afa without adversely affecting the condition of the basin provided that sufficient recharge water is available. The model inputs, assumptions, and results have been peer-reviewed by a panel of experts.

As shown in **PEIR Table 4.2-7**, groundwater production provided approximately 67 percent of the water demand in the service area in 2004. Under future scenarios with the proposed near-term recharge capacity of an additional 97,000 afy, the basin could produce up to 427,000 afy and still avoid long-term overdraft. This would provide up to 75 percent of the annual water demand in 2025. The continued diversion would have no adverse impacts to groundwater.

PEIR TABLE 4.2-7
AVERAGE ANNUAL WATER BALANCE WITHIN OCWD

	Annual Recharge (afy)	Annual Production (afy)	Annual Water Demand (afy)	Percent of Demand supplied by Groundwater
Existing (2004)	330,000[a]	337,000[a]	500,000[a]	67
Future (2025 with near-term projects)	427,000	427,000	570,000[b]	75

SOURCES:
[a] OCWD, 2003-2004 Engineer's Report on Groundwater Conditions, Water Supply and Basin Utilization in the Orange County Water District. February 2005.
[b] MWDOC, Retail Demand Projection with 2004 Data, Producers Model (based on a survey of retail producers from 2004).

[7] National Water Research Institute, Report of the Scientific Advisory Panel, *Santa Ana River Water Quality and Health Study,* August 2004.

PENDING SAR WATER RIGHTS APPLICATIONS

Upper Santa Ana River – above Prado Basin

- San Bernardino Valley Municipal Water District and Western Municipal Water District (Muni/Western) – Application Number 31165
- Chino Basin Watermaster – Application Number 31369
- San Bernardino Valley Municipal Water District and Western Municipal Water District (Muni/Western) – Application Number 31370
- San Bernardino Valley Water Conservation District – Application Number 31371
- City of Riverside – Application Number 31372

Lower Santa Ana River – below Prado Basin

- Orange County Water District – Application Number 31174

Cumulative Impact of SAR Diversion. OCWD diversions would be a component of cumulative diversions within the SAR watershed that would result in a reduction of the amount of storm water that would otherwise reach the ocean. As discussed in PEIR Section 4.2.5, the reduction in future storm flows below Prado is a less than significant impact to resources below Prado Dam.

OCWD is the only water applicant on the lower Santa Ana River below Prado Dam. While the water diversion activities of the upstream entities affect the flow in the Santa Ana River that reaches Prado Dam, OCWD is not competing with these upstream entities for the water in the upper river. OCWD is interested in securing a right to divert the Santa Ana River flow that reaches Prado Basin, without trying to restrict the rights of upstream legal users to divert water or recycled wastewater (consistent with the 1969 Judgment).

PEIR Appendix J (in Exhibit OCWD 1-23) presents a discussion of potential cumulative effects within the overall SAR watershed as a result of other upstream water rights applications and other reasonably foreseeable activities affecting river flow. Although several cumulative effects are identified upstream of Prado Basin by other water rights applicants in their CEQA environmental review documents, OCWD's proposed diversions downstream would not contribute to those upstream effects.

Biology

Methodology: ESA Senior Biologist Chris Rogers conducted reconnaissance-level surveys of the project sites on December 2, 2002, May 20, 2003, and March 22, 2005. References used in the preparation of this section include information from the following reports and surveys:

- Records from the California Natural Diversity Database (CNDDB)[8] and California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California;[9]
- The Draft EIR/EIS Relocation and/or Protection of the SAR Interceptor;[10]
- The Supplemental Final EIS/EIR for the Prado Basin and Vicinity, Including Reach 9 and Stabilization of the Bluff Toe at Norco Bluffs;[11]
- The Prado Basin Water Conservation Feasibility Study Main Report and Draft EIS/EIR;[12] and
- The Environmental Assessment of the Santa Ana Watershed Program, 2000-2002[13] (See PEIR Appendix L-1).

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8 CNDDB, 2005.

9 CNPS, 2005.

10 Orange County Sanitation District, 2000.

11 USACE, November 2001.

12 USACE, July 2004.

13 Zembal and Hoffman, 2000.

A list of special-status plant and animal species reported to occur in the vicinity of the project site was compiled on the basis of data in the California Natural Diversity Database,[14] consultation with California Native Plant Society (CNPS) literature,[15] consultation with the USFWS, consultation with icthyologists (e.g., Thomas R. Haglund, Ph.D.), and biological literature of the region (e.g., Swift et al., 1993; Zembal and Hoffman, 2000). Other consulted references include the *Prado Basin Water Conservation Feasibility Study, July 2004*, the *Draft EIR/EIS Relocation and/or Protection of the SAR Interceptor*, and the *Supplemental Final EIR/EIS for Prado Basin and Vicinity, Including Reach 9 and Stabilization of the Bluff Toe at Norco Bluffs*. The PEIR discussion of the Santa Ana sucker (SAS) (*Catostomus santaanae*) is supported by a technical memorandum provided by biological specialists, Thomas R. Haglund, Ph.D., and Jonathan N. Baskin, Ph.D., which is included in PEIR Appendix E.[16] PEIR Appendix L presents several of the background documents relevant to the assessment of biological resources within the lower SAR.

Findings: Diversion of SAR water would not result in any impacts to biological resources for the following reasons:

- The diversion of SAR water will not alter the existing condition of the biological resources in the river.
- No sensitive species, designated critical habitat, or habitat conservation areas would be affected by the District's diversions because the river is predominantly a concrete-lined channel below the OCWD diversions.
- No downstream habitats were identified that would benefit from increased bypass flow.
- Existing operations and flood control improvements have been evaluated pursuant to CEQA requirements. The Corps of Engineers and the Orange County Flood Control District (OCFCD) have engaged in off-site habitat restoration as mitigation for effects to habitat in the river. The OCWD participates in this mitigation within Prado Basin, including invasive species removal programs, the Santa Ana Sucker Conservation Program, and the least Bell's vireo conservation program.

Diversion of SAR Water. The proposed diversion of additional SAR water would not alter existing conditions in the river. Currently, the USACE releases water from Prado Dam at a rate that accommodates the District's capacity for groundwater recharge when possible. The operation of the Prado Dam to maintain these flows has been evaluated and approved by USACE. Future increases in base flow would be diverted; the diversions would have no effect on the river upstream of Imperial Highway and would not change existing conditions downstream of Imperial Highway. The proposed action, therefore, would not affect biological resources in the river because existing facilities and conditions would not be altered. The following section summarizes the impact assessment.

Plant Communities. The proposed action would not affect the existing condition of plant communities in the lower SAR. No candidate or special-status plant species or community would be significantly affected by the anticipated increased diversions.

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14 CNDDB, 2005.

15 Skinner and Pavlik, 1994.

16 Thomas R. Haglund and Jonathan N. Baskin, 2005. Memorandum Re: Status of Santa Ana suckers in the Santa Ana River with particular attention to their status downstream of Prado Dam. 23 March 2005.

Minimal amounts of non-native grasses periodically grow near drop structures and along the banks of the existing Main River System between Imperial Highway and SR-22. However, all vegetation is routinely cleared during regular maintenance and earth-moving activities. These in-stream activities, as well as existing recharge basins and use of the Prado Dam for conservation, have been previously evaluated pursuant to CEQA requirements, and the District has implemented mitigation for identified effects to biological resources. These effects and mitigation measures are summarized in PEIR Appendix C and include habitat restoration and *Arundo* removal programs. Flood control improvements downstream of Prado Dam have substantially altered the river from its natural state. These improvements also have been evaluated pursuant to CEQA and NEPA requirements, and mitigation measures for identified impacts to biological resources have been implemented by the USACE and OCFCD, as summarized in PEIR Appendix F.

The proposed diversion would not change existing facilities or activities in the lower SAR. The District would continue to periodically remove vegetation and create temporary levees to maximize the recharge capacity of the river bottom. Thus, plant communities and future habitat value in the Main River System would be similar to existing conditions.

Wildlife and Fishes. The continued and proposed diversions would not alter existing conditions in the SAR and would not impact wildlife or fishes that currently use the river channel. There is no permanent vegetation or habitat that supports native or sensitive wildlife or fish populations within the District's Main River System downstream of Imperial Highway. The flood-control improvements made by USACE and OCFCD, and to a lesser degree the District's in-stream recharge activities, minimize habitat availability for wildlife and fishes. The District's Main River System operations, existing recharge basins, and use of the Prado Dam for conservation, have been previously evaluated pursuant to NEPA and CEQA requirements. The impacts to biological resources and associated mitigations are summarized in PEIR Appendix C and include monitoring programs for least Bell's vireo and southwestern willow flycatcher; the Santa Ana sucker conservation program; brown-headed cowbird trapping programs; and redesigned drop structures that minimize fish injury and death. The effects of flood-control improvements on wildlife and fishes also have been evaluated pursuant to NEPA and CEQA requirements, as summarized in Appendix F.

The temporary establishment of non-native vegetation within the District's Main River System provides foraging and nesting habitat for various birds, such as cormorants, great blue heron, Forster's tern, and California least tern. The proposed action would not alter this existing condition.

The threatened SAS has been found in the SAR below Prado Dam. However, recent studies suggest there are no viable, reproducing SAS populations downstream of Imperial Highway.[17] Ten flood control drop structures between Imperial Highway and SR-22 impede the movement of fishes into or out of the lower SAR. Nevertheless, storm flows can wash fishes, including the SAS, downstream from Reach 9 into the District's recharge area. The District participates in the Santa Ana Sucker Conservation Program (see PEIR Appendix L-6), which was established in 2000 pursuant to the FESA to allow multiple agencies that have jurisdiction over the SAR to "take" a limited number of suckers. The Conservation Program defines the allowed activities for each agency and provides mitigation measures to compensate for loss of suckers. The District's in-stream recharge operations are permitted under the Conservation Program. The District must capture and relocate any individual fish that are washed below Imperial Inflatable Dam after high flow events and implement a research program to advance sucker conservation

17 Haglund and Baskin, 2005 (in Exhibit OCWD 1-23).

upstream of its facilities in Reach 9. The proposed action would not alter these conditions or activities and therefore would not affect the current range of the SAS.

Bypass Flows. Currently during dry-weather months, USACE operates Prado Dam to maximize water conservation. Flow volumes are managed to minimize the amount of water bypassing the District's Main River System. There would be minimal beneficial impacts to downstream vegetation, wildlife, or fish if the District allowed bypass flows to occur.

Below SR-22, the river bed has been converted into a golf course. Downstream of the golf course, the river is contained within a concrete-lined channel. Even with bypass flows, there would be no valuable habitat for wildlife or fishes because the river lacks suitable substrate to support vegetation and periodic flood-control maintenance activities remove vegetation. In addition, a concrete flood control structure impedes fish migration and prohibits connectivity with suitable habitat in upstream reaches. USACE and OCFCD periodically dredge the soft bottom of the SAR below Adams Avenue to maintain the flood control channel. This prevents the permanent establishment of instream and riparian vegetation, which could provide habitat for wildlife. These activities were permitted and reviewed under NEPA/CEQA during the USACE's development of the Phase II GDM for the SAR Mainstem Project (see PEIR Appendix F).

Some urban runoff enters the river channel downstream of the golf course. OCFCD currently diverts dry-weather flows in the SAR near the I-405 crossing to the Orange County Sanitation District treatment plant to prevent non-point source pollution from reaching Newport Beach and Huntington Beach at the mouth of the SAR. The treated water is discharged into the ocean through a four-mile ocean outfall pipe. Bypass flows below OCWD's operations could interfere with this program that protects beach water quality if dry weather flows increased substantially.

Future Facility Projects

Future projects are reviewed in PEIR Chapter 5 at a program-level of detail; the impact analysis is organized by category of facility: surface recharge, enhancement of existing recharge, subsurface recharge, and storage reservoirs, as shown in **PEIR Table 5-1**. OCWD will conduct additional, project-level CEQA review of these future projects, as appropriate, as it decides to pursue these additional facilities.

Recharge Facilities. The District has identified a set of potential near-term projects for diverting additional river flows using existing diversion structures, adding 97,000 afa of recharge capacity. Near-term projects include surface recharge basins, creek enhancements, and basin cleaning vehicles. The District also has identified a set of long-term projects that could provide an additional 158,000 afa of recharge capacity. Recharge projects include surface recharge basins, subsurface recharge facilities, and additional basin cleaning vehicles. All long-term projects would require additional, detailed environmental evaluation and CEQA review prior to implementation.

Storage Facilities. In addition to recharge facilities, the District has identified a set of possible storage projects to capture and retain storm water flows for later release into recharge basins. The District has proposed raising the maximum elevation of the Prado Dam conservation pool and constructing off-river surface water storage reservoirs. The Corps of Engineers completed NEPA review in 2006 to raise the Prado Dam conservation pool elevation during the flood season to 498. In the longer term, further conservation pool increases to 514 feet msl would require further environmental review and approval by the Corps of Engineers, including a detailed evaluation of impacts to sensitive biological habitats within Prado Basin.

PEIR TABLE 5-1
FUTURE PROJECT CATEGORIES

Surface Recharge	Enhancement of Existing Recharge	Subsurface Recharge	Storage Reservoirs
Near-Term Projects			
• La Jolla Recharge Basin *(Project-level EIR since completed by OCWD in 2006)*	• Basin Cleaning Vehicles (BCVs) *(Project-level Cat Ex's since completed by OCWD in 2003)*		• Prado Dam Conservation Pool Elevation 508 feet *(Project-level CEQA and NEPA since completed on Flood season elevation storage increase to 498)*
• Mira Loma Recharge Basin			
Long-Term Projects			
• Fletcher Recharge Basin	• Basin Cleaning Vehicles (BCVs) *(Project-level Cat Ex's since completed by OCWD in 2007)*	• Subsurface Collection/ Recharge Systems (SCARS)	• Prado Dam Conservation Pool Elevation 514 feet
• Additional Recharge Basins		• Recharge Galleries	• Gypsum Canyon Reservoir
• Deep Basin Filtration Recharge			• Aliso Canyon Reservoir

Constructing off-stream storage reservoirs in Aliso and/or Gypsum Canyons would involve new dam construction, a conveyance pipeline to transfer water from the Prado Basin to the reservoir, and a pipeline to transfer water back to the SAR for release to OCWD's recharge facilities. Water would be diverted from the Prado Basin conservation pool, which already has a diversion point. These projects are included here as long-term projects to be analyzed more fully in the future. The PEIR identifies the types of environmental impacts and mitigation requirements anticipated for these types of facilities to be addressed in future project-level CEQA review.

The following impact and mitigation summary tables from the PEIR are included here to support this summary discussion of environmental impacts and mitigation measures adopted to reduce these impacts to less than significant where feasible.

- **PEIR Table ES-6:** Impacts of Proposed Future Surface Recharge Basins (Program-Level)
- **PEIR Table ES-7:** Impacts of Proposed Future Enhancement of Existing Recharge Systems (Program-Level)
- **PEIR Table ES-8:** Impacts of Proposed Future Subsurface Recharge Systems (Program-Level)
- **PEIR Table ES-9:** Impacts of Proposed Future Storage Reservoirs (Program-Level)

PEIR TABLE ES-6

FUTURE PROJECTS – SURFACE RECHARGE BASINS

PROGRAM LEVEL SUMMARY OF IMPACTS AND MITIGATIONS

Impact	Mitigation Measure(s)	Level of Significance After Mitigation
5.2.1. Hydrology		
Future surface recharge projects could result in significant impacts to storm water quality.	RB-HYDRO-1: The District will prepare and implement Storm Water Pollution Prevention Plans as required for coverage under the statewide National Pollutant Discharge Elimination System construction permit. RB-HYDRO-2: The District will design facilities to be consistent with Orange County's storm water quality requirements.	Less than significant.
Future surface recharge projects could result in significant impacts to groundwater quality.	RB-HYDRO-3: Prior to implementation of new recharge facilities, the District shall conduct groundwater modeling to evaluate the ability of the groundwater basin to accommodate the additional water at the specific recharge location. If modeling concludes that the basin can not accommodate the additional recharge, no recharge basins will be constructed in that area. RB-HYDRO-4: The District shall continue to coordinate with the Department of Health Services and local water producers to effectively manage and maintain high water quality. The District shall continue water quality monitoring of recharge water to assess the potential for affecting groundwater quality. The District shall submit water quality monitoring results to the Department of Health Services. If monitoring identifies water quality concerns, OCWD shall coordinate with the Department of Health Services to develop and implement necessary water quality protection measures. RB-HYDRO-5: Prior to implementation of new recharge facilities, the District shall conduct Phase I site assessments for each potential recharge basin prior to approval to assess potential for soil contamination to exist on site or in neighboring areas that could be affected by the project. If contaminated soils are identified the District will implement measures to prevent adversely affecting groundwater.	Less than significant.
5.2.2. Biological Resources		
Future surface recharge projects could result in significant impacts to biological resources.	RB-BIO-1: The District will consult with resource agencies including the USFWS, CDFG, the USACE, and the RWQCB to obtain necessary permits prior to implementation of projects that could result in disturbance to biological resources. RB-BIO-2: The District shall implement a pre-construction mitigation strategy first to identify sensitive habitats, plants, and wildlife species, and then to avoid impacts if possible. If avoidance is not possible, the District shall minimize the impact and compensate in accordance with permitting requirements. This general mitigation strategy is summarized below. • **Determine if sensitive habitats or species are present:** The District will retain qualified biologists to survey the project site for sensitive habitats, plants, and wildlife species. • **Avoid loss of sensitive habitats and species:** The District will avoid disturbing sensitive biological resources, if possible. During project planning and siting, alternative locations or project configurations will be evaluated.	Less than significant.

TABLE ES-6

FUTURE PROJECTS – SURFACE RECHARGE BASINS

PROGRAM LEVEL SUMMARY OF IMPACTS AND MITIGATIONS (CONT.)

Impact	Mitigation Measure(s)	Level of Significance After Mitigation
	• **Minimize loss of sensitive habitats and species:** If avoidance is not possible, the District will limit construction activities in and around sensitive habitats and species to the minimum area necessary. • **Compensate for unavoidable loss of sensitive habitats and species:** If avoidance is not possible, the District will compensate for the unavoidable losses in coordination with the USFWS and CDFG. Compensation for sensitive habitats and special-status plant communities could involve either purchasing property with similar habitat or plant communities and providing for their protection and management for wildlife value in perpetuity, or enhancing sensitive habitat and plant communities within existing conservation areas.	
5.2.3. Land Use and Recreation		
Future surface recharge projects could conflict with existing land use designations and temporarily impact the availability of recreational resources.	RB-LU-1: The District shall conduct siting studies to determine the most suitable locations to place facilities. Siting studies shall consider existing and planned land uses in the vicinity of the project. Projects will be located in areas with suitable neighboring land uses wherever feasible. RB-LU-2: If sensitive land uses cannot be avoided, buffer zones, access controls, and visual screens will be implemented to minimize impacts wherever feasible. RB-LU-3: The District shall identify locations for project facilities that minimize impacts to recreational facilities. RB-LU-4: For projects located near recreational areas, the District shall coordinate with the applicable recreation or park agency to identify ways to minimize impacts of project construction on recreational activities. Measures may include but are not limited to: • Posting of signage indicating dates during which use of recreational areas would be restricted due to construction; • Placement of fencing to isolate construction areas and allow continued use of other areas of recreational parks and facilities; and • Timing of construction activities to avoid peak recreational use seasons.	Less than significant.
5.2.4. Aesthetics		
Future surface recharge projects could result in significant impacts to local aesthetic character.	RB-AES-1: The District shall design facilities to be consistent with local policies and programs to protect scenic values and to avoid visual intrusions. RB-AES-2: The District shall incorporate landscaping plans into final designs of project facilities to mask views of new structures.	Less than significant.

TABLE ES-6

FUTURE PROJECTS – SURFACE RECHARGE BASINS

PROGRAM LEVEL SUMMARY OF IMPACTS AND MITIGATIONS (CONT.)

Impact	Mitigation Measure(s)	Level of Significance After Mitigation
5.2.5. Air Quality		
Construction of future surface recharge projects could result in significant air quality impacts.	RB-AIR-1: The District shall establish best management practices (BMPs) to reduce air emissions from construction projects. BMPs may include measures such as restricting hours of use of construction equipment, minimizing idling, using fuel additives or alternatives in construction equipment, and implementing dust control plans. RB-AIR-2: The District shall require contractors to comply with its BMPs and with SCAQMD emissions regulations.	Potentially significant and unavoidable.
5.2.6. Cultural Resources		
Construction of future surface recharge projects could result in significant impacts to cultural resources.	RB-CULT-1: The District shall conduct archaeological and paleontological resource evaluations before and during construction activities as appropriate to minimize impacts to cultural resources.	Less than significant.
5.2.7. Geology and Soils		
Future surface recharge projects could be subject to geologic hazards.	RB-GEO-1: The District shall prepare site-specific, design-level geotechnical investigations for each site prior to the commencement of construction. Each investigation shall include an analysis of expected geologic hazards at the site and recommended measures to avoid the hazards. The investigations will include assessing liquefaction hazards to neighboring structures. The District shall include recommended measures necessary to avoid geologic hazards in design specifications.	Less than significant.
5.2.8. Hazards and Hazardous Materials		
Future surface recharge projects could be subject to hazards such as surface and subsurface soil contamination.	See RB-Hydro-5. RB-HAZ-1: Excavated materials containing hazardous waste shall be disposed of in accordance with applicable hazardous waste transportation and disposal regulations by the District within 90 days of excavation.	Less than significant.
5.2.9. Noise		
Construction of future surface recharge projects could result in significant noise impacts.	RB-NOISE-1: The District will require contractors to comply with local noise ordinances. RB-NOISE-2: The District shall implement procedures to reduce noise generation from project construction activities. Typical noise control procedures could include the following: • Require construction contractors to comply with the construction hours and days limitations established in local noise ordinances. Night-time construction would require approval from local jurisdictions. • Require all construction contractors to locate fixed construction equipment (e.g., compressors and generators) as far as possible from noise-sensitive receptors. • Equipment used in the construction of individual projects and management actions shall be muffled and maintained in good operating condition. Internal combustion	Less than significant.

TABLE ES-6

FUTURE PROJECTS – SURFACE RECHARGE BASINS

PROGRAM LEVEL SUMMARY OF IMPACTS AND MITIGATIONS (CONT.)

Impact	Mitigation Measure(s)	Level of Significance After Mitigation
	engine-driven equipment shall be fitted with intake and exhaust mufflers that are in good condition. • Additional noise attenuating measures include changing the location of stationary construction equipment and/or staging areas; notifying adjacent residences and nearby sensitive receptors in advance of construction work; shutting off idling equipment; rescheduling construction activities; requiring on-going construction noise monitoring to assure adherence to City/County construction equipment standards; and/or installing temporary barriers around stationary construction noise sources.	
5.2.10. Traffic		
Construction of future surface recharge projects could result in significant impacts to local traffic.	RB-TR-1: The District will consult with local jurisdictions and Caltrans when considering future projects to develop measures to minimize impacts to traffic from construction activities. The District will implement these measures wherever feasible. RB-TR-2: The District shall obtain encroachment permits from local jurisdictions and Caltrans prior to construction when construction would result in work within roadway easements or would require lane closures. RB-TR-3: The District shall minimize heavy-duty truck traffic associated with soil hauling and deliveries during peak traffic periods.	Less than significant.
7.5 Cumulative Impacts		
C-2: Construction activities could contribute temporarily to cumulatively significant environmental impacts to air quality.	See RB-Air-1 and RB-Air-2	Potentially significant and unavoidable.

PEIR TABLE ES-7

FUTURE PROJECTS – ENHANCEMENT OF EXISTING RECHARGE SYSTEMS

PROGRAM LEVEL SUMMARY OF IMPACTS AND MITIGATIONS

Impact	Mitigation Measure(s)	Level of Significance After Mitigation
No impacts to environmental resources would result from the use of Basin Cleaning Vehicles.	None required.	No impact.

PEIR TABLE ES-8

FUTURE PROJECTS – SUBSURFACE RECHARGE SYSTEMS

PROGRAM LEVEL SUMMARY OF IMPACTS AND MITIGATIONS

Impact	Mitigation Measure(s)	Level of Significance After Mitigation
5.4.1. Hydrology		
Future subsurface recharge projects could result in significant impacts to storm water quality during construction activities.	See RB-HYDRO-1 and RB-HYDRO-2.	Less then significant.
Future subsurface recharge projects could result in significant impacts to groundwater quality.	See RB-HYDRO-3, RB-HYDRO-4, RB-HYDRO-5, and RB-HYDRO-6.	Less then significant.
5.4.2. Biological Resources		
Future subsurface recharge projects could result in significant impacts to biological resources.	See RB-BIO-1 and RB-BIO-2.	Less than significant.
5.4.3. Land Use and Recreation		
Future subsurface recharge projects could temporarily impact the availability of recreational resources.	See RB-LU-1, RB-LU-3, and RB-LU-4.	Less than significant.

PEIR TABLE ES-8

FUTURE PROJECTS – SUBSURFACE RECHARGE SYSTEMS

PROGRAM LEVEL SUMMARY OF IMPACTS AND MITIGATIONS (CONT.)

Impact	Mitigation Measure(s)	Level of Significance After Mitigation
5.4.5. Air Quality		
Construction of future subsurface recharge projects could result in significant air quality impacts.	See RB-AIR-1 and RB-AIR-2.	Potentially significant and unavoidable.
5.4.6. Cultural Resources		
Construction of future subsurface recharge projects could result in significant impacts to cultural resources.	See RB-CULT-1.	Less than significant.
5.4.7. Geology And Soils		
Future subsurface recharge projects could be subject to geologic hazards.	See RB-GEO-1.	Less than significant.
5.4.8. Hazards And Hazardous Materials		
Future subsurface recharge projects could be subject to hazards such as surface and subsurface soil contamination.	See RB-HYDRO-5 and RB-HAZ-1.	Less than significant.
5.4.9. Noise		
Construction of future subsurface recharge projects could result in significant noise impacts.	See RB-NOISE-1 and RB-NOISE-2.	Less than significant.
5.4.10. Traffic		
Construction of future subsurface recharge projects could result in significant impacts to local traffic.	See RB-TR-1, RB-TR-2, and RB-TR-3.	Less than significant.
7.5 Cumulative Impacts		
C-2: Construction activities could contribute temporarily to cumulatively significant environmental impacts to air quality.	See RB-AIR-1 and RB-AIR-2	Potentially significant and unavoidable.

PEIR TABLE ES-9

FUTURE PROJECTS – STORAGE RESERVOIRS

PROGRAM LEVEL SUMMARY OF IMPACTS AND MITIGATIONS

Impact	Mitigation Measure(s)	Level of Significance After Mitigation
5.5.1. Hydrology		
Construction of off-river storage reservoirs could significantly impact storm water runoff quality.	See RB-HYDRO-1 and RB-HYDRO-2.	Less then significant.
Future storage reservoir projects could reduce storm water volumes reaching the ocean.	None required.	Less than significant
5.5.2. Biological Resources		
Future storage reservoir projects could result in significant impacts to biological resources, including habitat for sensitive species.	See RB-BIO-1 and RB-BIO-2.	Potentially significant and unavoidable.
5.5.3. Land Use and Recreation		
Future storage reservoir projects could conflict with existing land use designations and habitat conservation plans, and could impact the availability of recreational resources.	See RB-LU-1 through RB-LU-4.	Potentially significant and unavoidable.
5.5.4. Aesthetics		
Future storage reservoir projects could have a significant impact on scenic vistas and aesthetic resources.	See RB-AES-1 and RB-AES-2.	Potentially significant and unavoidable.
5.5.5. Air Quality		
Construction of storage reservoir projects could result in significant air quality impacts.	See RB-AIR-1 and RB-AIR-2.	Potentially significant and unavoidable.
5.5.6. Cultural Resources		
Construction of storage reservoir projects could result in significant impacts to cultural resources.	See RB-CULT-1.	Less than significant.
5.5.7. Geology and Soils		
Future storage reservoir projects could be subject to geologic hazards.	See RB-GEO-1.	Potentially significant and unavoidable.

PEIR TABLE ES-9

FUTURE PROJECTS – STORAGE RESERVOIRS

PROGRAM LEVEL SUMMARY OF IMPACTS AND MITIGATIONS (CONT.)

Impact	Mitigation Measure(s)	Level of Significance After Mitigation
5.5.8. Hazards and Hazardous Materials		
Future storage reservoir project sites could contain potentially hazardous materials.	See RB-HAZ-1.	Less than significant.
5.5.9. Noise		
Construction and operation of future storage reservoir projects could result in significant noise impacts.	See RB-NOISE-1 and RB-NOISE-2.	Potentially significant and unavoidable.
5.5.10. Traffic		
Construction of storage reservoir projects could result in significant impacts to local traffic and require the construction of new roads.	See RB-TR-1 through RB-TR-3.	Less than significant.
7.5 Cumulative Impacts		
C-3: Construction of off-river storage facilities within open space could contribute to cumulatively significant impacts to air quality, noise, and traffic. Operations could add to cumulatively significant impacts to aesthetics, biological resources, and land use.	See RB-Air-1, RB-Air-2, RB-Noise-1, RB-Noise-2, RB-TR-1, RB-TR-2, and RB-TR-3.	Potentially significant and unavoidable.

At a program-level of review, the PEIR concludes that construction and operation of future projects could result in potentially significant and unavoidable direct and cumulative impacts in the area of air quality associated with construction emissions. In addition, the proposed future surface water storage reservoirs (Aliso and Gypsum Canyon) were found to have potentially significant and unavoidable impacts in the areas of biological resources, land use, aesthetics, air quality, geology and soils, noise, and traffic. Future project-level impact analysis is required and would be conducted by OCWD to further assess the impacts of these future projects, re-evaluate the impact significance and determine if there are feasible methods of avoiding or minimizing these potentially significant effects.

Growth Inducement

OCWD does not supply water directly to customers for use. Rather, OCWD is responsible for managing and protecting the groundwater basin under northern and central Orange County to maximize its beneficial uses by others. While OCWD does have an important role in the region's water supply management, it does not have a role in either planning or approving land use development and growth or in extending water service to specific areas, developments or users within its service area.

Other sources of supply are potentially available or could be pursued to meet future increases in water demands of local jurisdictions independent of groundwater usage. These other sources include increased import of water from Metropolitan, water transfers for import from others outside the region, and desalination (each of these options would result in additional environmental impacts). OCWD's proposed project would not cause or induce growth within the area since it is reasonably foreseeable that the major water suppliers within OCWD's service area (MWDOC, and the cities of Anaheim, Fullerton, and Santa Ana) and/or the local communities and water agencies within the MWDOC service area would pursue other water supply options to meet the needs of planned growth in the absence of OCWD's proposed project.

Executed under the penalty of perjury under the laws of the State of California in **San Francisco**, California on April 11, 2007.

Leslie Moulton,
Director – ESA Water
Vice President

for Chris Rogers,
ESA Senior Ecologist