

APPENDIX E
RECYCLED WATER AND GROUNDWATER
PROJECTED SUPPLIES

Table E-1: Projected Recycled Water Supplies

Table E-2: Wastewater Treatment Potential

Table E-3: Projected Groundwater Supplies

Table E-1						
Existing and Projected Recycled Water Supplies						
(Acre-Foot/Year)						
Purveyor	Supply Source Treatment Plant/Agency	Demand Agencies Committed to Serve				Type of Reuse
		2005	2010	2015	2020	
Carlsbad MWD	Carlsbad WRP/Carlsbad MWD	4800	5000	5000	5000	Landscape Landscape, Agriculture Landscape, Agriculture
	Gafner WRF/Leucadia CWD	2800	3000	3000	3000	
	Meadowlark WRF/Vallecitos WD	500	500	500	500	
		1500	1500	1500	1500	
Del Mar, City of	San Elijo WRF/San Elijo JPA	150	150	150	150	Landscape
Escondido, City of	Hale Avenue RRF/WRF/City of Escondido	2700	3300	4200	4200	Landscape, Agriculture, Industrial
Fallbrook PUD	Fallbrook Plant #1/Fallbrook PUD	800	850	850	850	Landscape, Agriculture
Oceanside, City of	San Luis Rey WWTP/City of Oceanside	300	2700	2700	2700	Landscape, Environmental
Olivenhain MWD	4-S Ranch WWTP/Olivenhain MWD	1800	2800	3800	3800	Landscape Landscape, Environmental Enhancement Pasture Irrigation, Environmental Enhancement
	Santa Fe Valley WRF/Olivenhain MWD	1000	2000	3000	3000	
	Whispering Palms WPCF/Whispering Palms CSD	500	500	500	500	
		300	300	300	300	
Otay WD	R. W. Chapman WRF/OWD & SBWRP/City of SD	4900	6200	6900	7800	Landscape, Environmental
Padre Dam MWD	Padre Dam WRF/Padre Dam MWD	900	900	900	900	Landscape, Indust., Agri., Environmental
USMC Camp Pendleton	Camp Pendleton WWTPs/USMC	800	800	800	800	Landscape
Poway, City of	North City WRP & San Pasqual WRP/City of San Diego	2300	2700	2700	2700	Landscape, Agriculture
Ramona MWD	Santa Maria & San Vicente WPCF/Ramona MWD	1300	1300	1300	1300	Landscape, Agri., Environmental Enhancement
Rincon del Diablo MWD	Hale Avenue RRF/WRF/City of Escondido	400	400	400	400	Landscape, Industrial, Agriculture
San Diego, City of		10500	16100	19600	19700	Landscape, Industrial Landscape, Environmental Enhancement Landscape, Industrial
	North City WRP/City of San Diego	8000	13000	15000	15000	
	San Pasqual WRP/City of San Diego	1500	2000	3500	3500	
	South Bay WRP/City of San Diego	1000	1100	1100	1200	
San Dieguito WD	San Elijo WRF/San Elijo JPA	700	700	700	700	Landscape
Santa Fe ID		1090	1090	1090	1090	Landscape Environmental Enhancement Environmental Enhancement
	San Elijo WRF/San Elijo JPA	450	450	450	450	
	Rancho Santa Fe WRF/Rancho Santa Fe CSD ¹	340	340	340	340	
	Fairbanks Ranch WRF/Fairbanks Ranch CSD ¹	300	300	300	300	
Valley Center MWD		350	460	1100	1620	Landscape, Environmental Enhancement Landscape, Environmental Enhancement
	Lower Moosa Canyon WRF/Valley Center MWD	300	310	800	1120	
	Central Valley Area WRPs/Valley Center MWD	50	150	300	500	
Vista ID	Shadowridge WRP/Vista ID	300	300	300	300	Landscape
	Total Demand	33450	45110	51850	53370	

¹ Does not offset a municipally-supplied demand.

Abbreviations:

CSD - Community Services District
 ID - Irrigation District
 MWD - Municipal Water District
 PUD - Public Utility District
 WD - Water District

RRF - Resource Recovery Facility
 WRF - Water Reclamation Facility
 WRP - Water Reclamation Plant
 WWTP - Wastewater Treatment Plant
 WPCF - Water Pollution Control Facility

**Table E-2
Wastewater Treatment
(Million Gallons/Day)**

Treatment Plant Name	Agency	Location (City)	Plant Capacity															Average	Wastewater Disposal
			2000			2005			2010			2015			2020			Effluent	
			P	S	T	P	S	T	P	S	T	P	S	T	P	S	T	TDS (mg/l)	
4S Ranch WWTP	OMWD	Rancho Bernardo, CA	0.3	0.3	0.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	925	Ocean
Camp Pendleton WWTPs	USMC	Camp Pendleton, CA	8.0	8.0	0.7	9.0	9.0	3.0	10.0	10.0	5.0	10.0	10.0	8.0	10.0	10.0	10.0	1030	Stream
Encina WPCF/Carlsbad WRP	CMWD	Carlsbad, CA	32.0	32.0	0.0	32.0	32.0	2.0	32.0	32.0	4.0	32.0	32.0	4.0	36.0	36.0	4.0	1300	Ocean
Fairbanks Ranch WPCF	Fbanks Ranch CSD	Fairbanks Ranch, CA	0.3	0.3	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	960	Percolation Ponds
Fallbrook Plant #1	Fallbrook PUD	Fallbrook, CA	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	720	Ocean
Gafner WRF	Leucadia CWD	Carlsbad, CA	1.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1300	Ocean
Hale Avenue RRF/WRP	City of Escondido	Escondido, CA	18.0	18.0	0.0	18.0	18.0	4.5	18.0	18.0	9.0	18.0	18.0	9.0	18.0	18.0	9.0	1000	Ocean
La Salina WWTP	City of Oceanside	Oceanside, CA	5.5	5.5	0.0	5.5	5.5	0.0	5.5	5.5	0.0	5.5	5.5	0.0	5.5	5.5	0.0	897	Ocean
Lower Moosa Canyon WRF	Valley Center MWD	Valley Center, CA	0.3	0.3	0.0	0.3	0.3	0.3	0.4	0.4	0.4	0.7	0.7	0.7	1.0	1.0	1.0	1000	Percolation Ponds
Meadowlark WRF	Vallecitos WD	Carlsbad, CA	2.0	2.0	2.0	2.5	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1000	Ocean
North City WRP	City of San Diego	San Diego, CA	23.0	23.0	4.0	27.0	27.0	8.0	30.0	30.0	30.0	30.0	30.0	30.0	45.0	45.0	45.0	1100	Ocean
Padre Dam WRF	Padre Dam MWD	Santee, CA	2.0	2.0	2.0	2.0	2.0	2.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	900	Ocean
Point Loma WWTP	City of San Diego	San Diego, CA	240.0	0.0	0.0	240.0	0.0	0.0	240.0	0.0	0.0	240.0	0.0	0.0	240.0	0.0	0.0	1850	Ocean
Ralph W. Chapman WRF	Otay WD	Spring Valley, CA	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	850	Ocean
Rancho Santa Fe WPCF	Rancho Santa Fe CSD	Rancho Santa Fe, CA	0.5	0.5	0.0	0.6	0.6	0.0	0.8	0.8	0.0	0.8	0.8	0.0	0.8	0.8	0.0	900	Percolation Ponds
San Elijo WPCF/WRP	San Elijo JPA	Encinitas, CA	5.3	5.3	0.0	5.3	5.3	2.5	5.3	5.3	2.5	5.3	5.3	2.5	5.3	5.3	2.5	1151	Ocean
San Luis Rey WWTP	City of Oceanside	Oceanside, CA	10.7	10.7	0.7	12.1	12.1	2.0	13.5	13.5	5.0	15.5	15.5	5.0	17.4	17.4	5.0	874	Ocean
San Pasqual WRP	City of San Diego	San Diego, CA	1.0	1.0	1.0	3.5	3.5	3.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	1020	Ocean
San Vicente WWTP	Ramona MWD	Ramona, CA	0.6	0.6	0.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	612	Stream
Santa Fe Valley WRF	Olivenhain MWD	Rancho Santa Fe, CA	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	925	Percolation Ponds
Santa Maria WPCF	Ramona MWD	Ramona, CA	0.8	0.8	0.35	1.1	1.1	0.35	1.5	1.5	0.35	1.5	1.5	1.0	1.5	1.5	1.5	867	Stream
Shadowridge WRP	Vista ID	Vista, CA	1.2	1.2	1.2	1.6	1.6	1.6	2.0	2.0	2.0	2.3	2.3	2.3	2.5	2.5	2.5	898	Ocean
South Bay WRP	City of San Diego	San Diego, CA	0.0	0.0	0.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	1000	Ocean
South Bay WWTP	City of San Diego	San Diego, CA	0.0	0.0	0.0	10.5	10.5	0.0	21.0	21.0	0.0	35.0	35.0	0.0	49.0	49.0	0.0	1100	Ocean
Valley Center WWTP	Valley Center MWD	Valley Center, CA	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1000	Percolation Ponds
Whispering Palms WPCF	Whispering Palms CSD	Whispering Palms, CA	0.4	0.4	0.0	0.4	0.4	0.0	0.4	0.4	0.0	0.4	0.4	0.2	0.4	0.4	0.4	963	Percolation Ponds
Total Capacity			356.6	116.6	17.5	395.1	155.1	55.9	418.1	178.1	96.1	434.5	194.5	100.4	470.1	230.1	118.7		

Abbreviations:

WRF - Water Reclamation Facility
 WRP - Water Reclamation Plant
 WWTP - Wastewater Treatment Plant
 WPCF - Water Pollution Control Facility
 RRF - Resource Recovery Facility
 TDS - Total Dissolved Solids
 mg/l - Milligrams per Liter

P - Primary Treatment
 S - Secondary Treatment
 T - Tertiary Treatment

**TABLE E-3
EXISTING AND PROJECTED GROUNDWATER SUPPLIES (AF/YR)^a**

AGENCY	GROUNDWATER BASIN or LOCATION	2005	2010	2015	2020
Olivenhain MWD	Lower San Dieguito River Basin	0	2,000	2,000	2,000
Fallbrook PUD/Camp Pendleton ¹	Lower Santa Margarita River	0	6,000	6,000	6,000
Helix WD	Santee/El Monte Basin	200	200	200	200
City of Oceanside	Mission Basin	6,500	6,500	6,500	6,500
Otay WD ²	Otay Mesa area (fractured bedrock and alluvium)	0	0	2,000	2,000
Padre Dam MWD ³	Santee/El Monte Basin	1,500	3,500	3,500	3,500
USMC Camp Pendleton ⁴	San Juan and Lower Santa Margarita	7,900	10,300	10,300	10,300
Ramona MWD	Santa Maria Basin	200	200	200	200
City of San Diego	San Pasqual Valley	1,000	2,000	3,000	4,000
City of San Diego	San Diego Formation ^d	1,000	2,000	3,000	4,000
Sweetwater Authority ⁵	Lower Sweetwater Basin/San Diego Fm	4,000	10,000	10,000	10,000
Yuima MWD ⁶	Pauma Basin	8,800	8,800	8,800	8,800
Tia Juana Valley CWD	Tijuana Valley/ San Diego Fm	0	2,000	2,000	2,000
TOTAL EXISTING AND PROJECTED⁷		31,100	53,500	57,500	59,500

^a This table represents a compilation of information by Authority staff and is based on input from local agencies. As discussed in Section 4.4.2, there are a number of economic, legal and environmental considerations that bear on implementation of any identified project.

^b The City of San Diego's proposed development of the San Diego Formation does not include potential uses of the aquifer for seasonal, emergency or long-term storage. Previous studies indicate that the storage potential may be as high as 90,000 acre-feet or more.

¹ The Authority assumes that the planned Santa Margarita River Conjunctive Use Project will be implemented by 2010 using reclaimed water to replenish the Lower Santa Margarita Basin.

² Otay WD is currently studying numerous groundwater development options. Although plans for projects have been not be finalized, it is assumed that Otay WD will develop at least 2,000 AF/YR of groundwater by the year 2015.

³ Groundwater production credited to Padre Dam MWD includes groundwater production of Lakeside and Riverview Water Districts. These two agencies purchase imported water from Padre Dam MWD and supplement that supply with groundwater. The projected production increase is anticipated to come from the possible construction of a small brackish groundwater extraction and treatment operation conceptualized by Padre Dam MWD.

⁴ It is assumed that recycled water production from Camp Pendleton's wastewater treatment plants is not used to recharge those portions of the basins used for groundwater production.

⁵ Sweetwater groundwater production comes from its National City Well Field (San Diego Fm.) and its newly constructed Richard A. Reynolds Groundwater Demineralization Facility and a planned 4,000 AFY expansion by 2010.

⁶ Yumia MWD's average annual groundwater production of roughly 2000 AFY plus 6,800 AF/YR of local water produced by individual mutual water companies served by Yuima MWD.

⁷ The above groundwater production summary and forecast does not include production by Vista ID from the Warner Basin because the groundwater has been counted as surface water because it is pumped to a surface water reservoir prior to being used. In addition, the City of San Diego has indicated to the Authority that they are developing plans to maximize the development of the City's rights and interests in the following groundwater basins: San Pasqual, Santa Maria, San Dieguito, Santee/El Monte, Mission Valley, Middle and Lower Sweetwater, Lower Tijuana River Valley, and San Diego Formation aquifer, including groundwater extraction and disinfection, brackish groundwater recovery, and recharge and recovery of imported and recycled water.