Twenty-Second Annual Status Report on Recycled Water

Fiscal Year 2010-2011

SANITATION DISTRICTS OF LOS ANGELES COUNTY

Twenty-Second
ANNUAL STATUS REPORT

ON

RECYCLED WATER USE

Fiscal Year 2010-11

Sanitation Districts of Los Angeles County
1955 Workman Mill Road
Whittier, CA 90601

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PREFACE

In addition to its mission of collecting, treating and disposing of municipal wastewater, the Sanitation Districts of Los Angeles County (Sanitation Districts) have adopted the goal of maximizing the beneficial reuse of the highly treated effluents produced by its water reclamation plants. The Sanitation Districts work with a number of local, regional, and state agencies and other entities in an effort to continue developing recycled water as a "local" water supply to supplement the area's limited groundwater and imported water supplies.

In response to many requests for information regarding various aspects of the Sanitation Districts' water reuse program, this fiscal year report has been prepared for distribution to interested parties. This report is the twenty-second of its kind and includes: historic recycled water use activities, descriptions of plant operations, diagrams of the various recycled water distribution systems, lists of the users and quantities used, tables of recycled water quality, and plans for expanding the use of recycled water, among other subjects.

This report is divided into five chapters. Chapter 1 is an overview of the Sanitation Districts' water reuse program. Chapters 2, 3, and 4 detail the water reuse activities at each of the Sanitation Districts' ten water reclamation plants, which are grouped in three geographic areas: Los Angeles Basin, Santa Clarita Valley, and Antelope Valley, respectively. Chapter 5 details the various proposed water recycling projects in the Sanitation Districts' service area that are currently under development or in the planning phase.

In order to improve the flow and readability of this report, the narrative descriptions of the more complicated distribution system facilities (Long Beach Water Department, City of Cerritos, City of Lakewood, Central Basin Municipal Water District's Century and Rio Hondo systems, Walnut Valley Water District, Puente Hills/Rose Hills system, Upper San Gabriel Valley Municipal Water District's Whittier Narrows Recreation Area Extension, and the Sanitation Districts' Eastern Agricultural Site in Lancaster) have been moved to their own individual appendices at the end of this report. The same has been done for the chronology of Sanitation Districts' reuse activities and all of the individual effluent quality tables.

A "Facts-at-a-Glance" summary page containing a brief list of data regarding the Sanitation Districts' water recycling program for the fiscal year appears before Chapter 1.

If you would like additional copies of this report (paper or electronic), or would like to comment on its contents, please contact Earle Hartling, Water Recycling Coordinator at (562) 908-4288, extension 2806, or by email at *ehartling@lacsd.org*. Further information regarding the Sanitation Districts and its water recycling activities can be found at the Sanitation Districts' website at *http://www.lacsd.org/waterreuse/*.

Cover Photo: Rose Hills Memorial Park is the largest such facility in North America. Beginning in 1998, recycled water from the San Jose Creek Water Reclamation Plant began being delivered for irrigation, first to the upper area from the distribution system serving the Sanitation Districts' Puente Hills Landfill (background), then to the lower area via the Upper San Gabriel Valley Municipal Water District's extension to the Central Basin Municipal Water District's Rio Hondo distribution system. Currently, over 900 acre-feet per year are used on nearly 600 acres of cemetery, consistently making Rose Hills one of the Sanitation Districts' ten largest reuse sites.

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SANITATION DISTRICTS

Total Effluent Produced: 442.43 MGD (495,766 AFY), 0.2% decrease
Total Recycled Water Produced: 163.92 MGD (183,678 AFY), 64.8% of capacity, 37.0% of the total produced, 0.6% increase
Total Recycled Water Used: 76.25 MGD (85,448 AFY), 46.5% of recycled water produced, 12.1% decrease, 649 sites (26 new sites added, 2 sites disconnected)

Groundwater replenishment (4) -	40.52 MGD (45,401 AFY)	52.4% of total reuse	19.2% decrease
Landscape irrigation (602) -	13.66 MGD (15,306 AFY)	18.2% of total reuse	0.4% decrease
Agriculture (11) -	12.13 MGD (13,591 AFY)	16.1% of total reuse	8.1% decrease
Industrial (20) -	2.79 MGD (3,131 AFY)	3.7% of total reuse	1.1% decrease
Environmental (1) -	7.15 MGD (8,012 AFY)	9.5% of total reuse	4.1% increase

Total Reuse Since Inception: 2,497,638 AF (813.6 billion gallons)

Transmission lines: 1,360,790 linear feet (258 miles)

Acreage Served: 14,387 acres (direct non-potable use)

Jurisdictions Served: 31 (30 cities plus Los Angeles County Unincorporated Areas)

Recycled Water Purveyors: 30

Recycled Water Contracts: 24

Chemical Savings[1]: $128,000

Greenhouse Gas Reduction[2]: 192,260 tons of carbon dioxide

Capacity of Future Planned Reuse Projects: 77,220 AFY (68.91 MGD)

JOINT OUTFALL SYSTEM

Total Effluent Produced: 402.46 MGD (450,980 AFY), 0.6% decrease
Total Recycled Water Produced: 123.95 MGD (138,891 AFY), 30.8% of the total produced, 0.1% decrease
Total Recycled Water Used: 56.97 MGD (63,842 AFY), 46.0% of recycled water produced, 15.3% decrease

SANTA CLARITA

Total Recycled Water Produced: 19.96 MGD (22,365 AFY), 1.8% decrease
Total Recycled Water Used: 0.300 MGD (337 AFY), 1.5% of recycled water produced, 9.4% decrease

ANTELOPE VALLEY

Total Wastewater Treated: 23.10 MGD, 1.7% decrease
Total Recycled Water Produced: 20.01 MGD (22,422 AFY), 3.5% increase
Total Recycled Water Used: 18.98 MGD (21,270 AFY), 94.9% of recycled water produced, 1.1% decrease

1 Recycled water delivered to the various distribution systems is not dosed with either sulfur dioxide or sodium bisulfate for dechlorination or with defoamant.

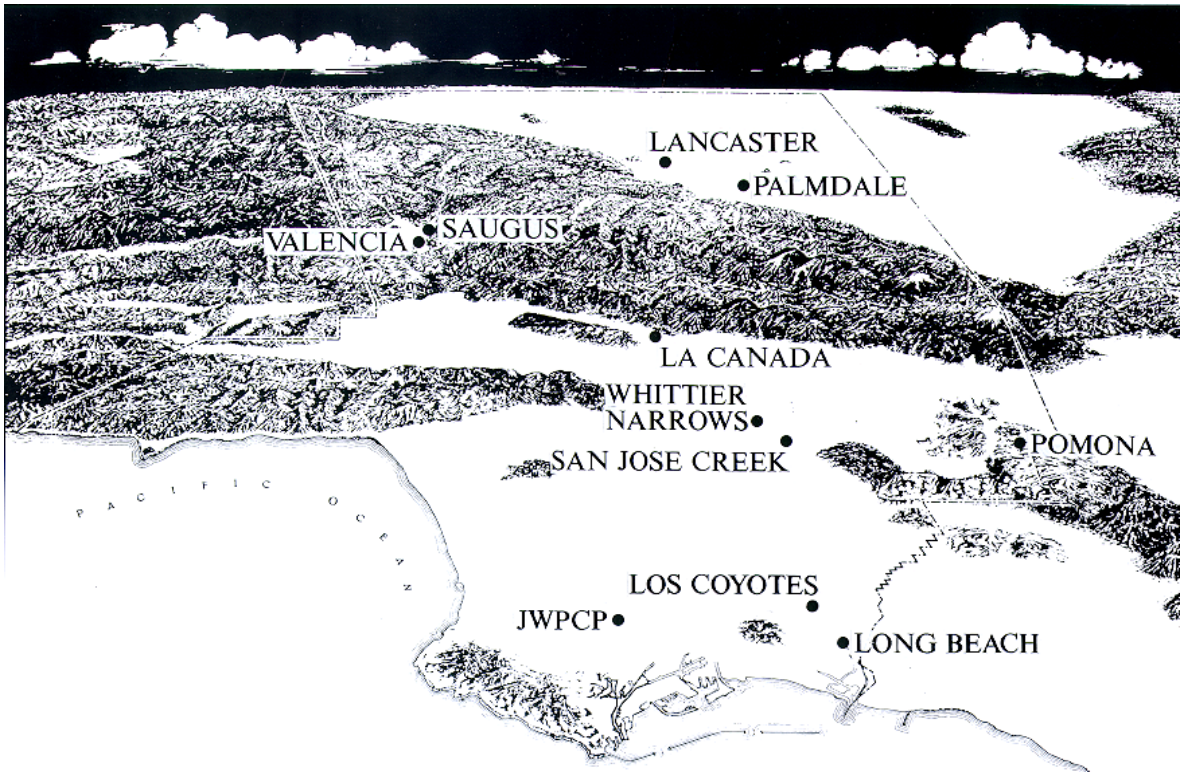
2 The use of locally produced recycled water eliminates the need to pump State Project water into the Los Angeles Basin at an energy cost of approximately 3,000 kWh/AF with the attendant CO_2 production.

1. OVERVIEW

1.1 WATER RECLAMATION ACTIVITIES

The Sanitation Districts of Los Angeles County (Sanitation Districts) operate 11 wastewater treatment facilities (Figure 1), 10 of which are classified as water reclamation plants (WRPs). These facilities serve approximately five million people in 78 cities and unincorporated areas within Los Angeles County. Effluent quality from the WRPs ranges from undisinfected secondary quality recycled water to filtered, disinfected tertiary quality recycled water. During Fiscal Year 2010-11 (FY 10-11), Sanitation Districts' facilities produced an average of 442.43 million gallons per day (MGD), or 495,766 acre-feet per year (AFY) of effluent, which is a decrease of 0.2% from the preceding fiscal year, and a 17.4% decrease from the historic peak of FY 89-90. Following this peak, total average effluent flow had decreased by 11% in FY 91-92 as a result of widespread water conservation in response to a drought-induced, statewide water crisis, as well as an economic recession. After the drought ended in 1992, overall effluent flows increased, due in part to population growth, a healthier economy, and the easing of conservation measures in response to the improved statewide water supply situation. Total effluent flow peaked again in 1998 due to the extremely heavy, El Niño generated rainfall. Since 1999, total flow production has continued decreasing despite population growth in the Sanitation Districts' service area. The 14.5% decrease in effluent production since FY 04-05 is a result of a downturn in local economic activity combined with increasing water conservation efforts (low flow toilets, waterless urinals, water efficient washing machines, etc.) due to a three-year statewide drought (2006-09). Effluent production at Sanitation Districts' facilities is currently at levels last seen in the late 1970s.

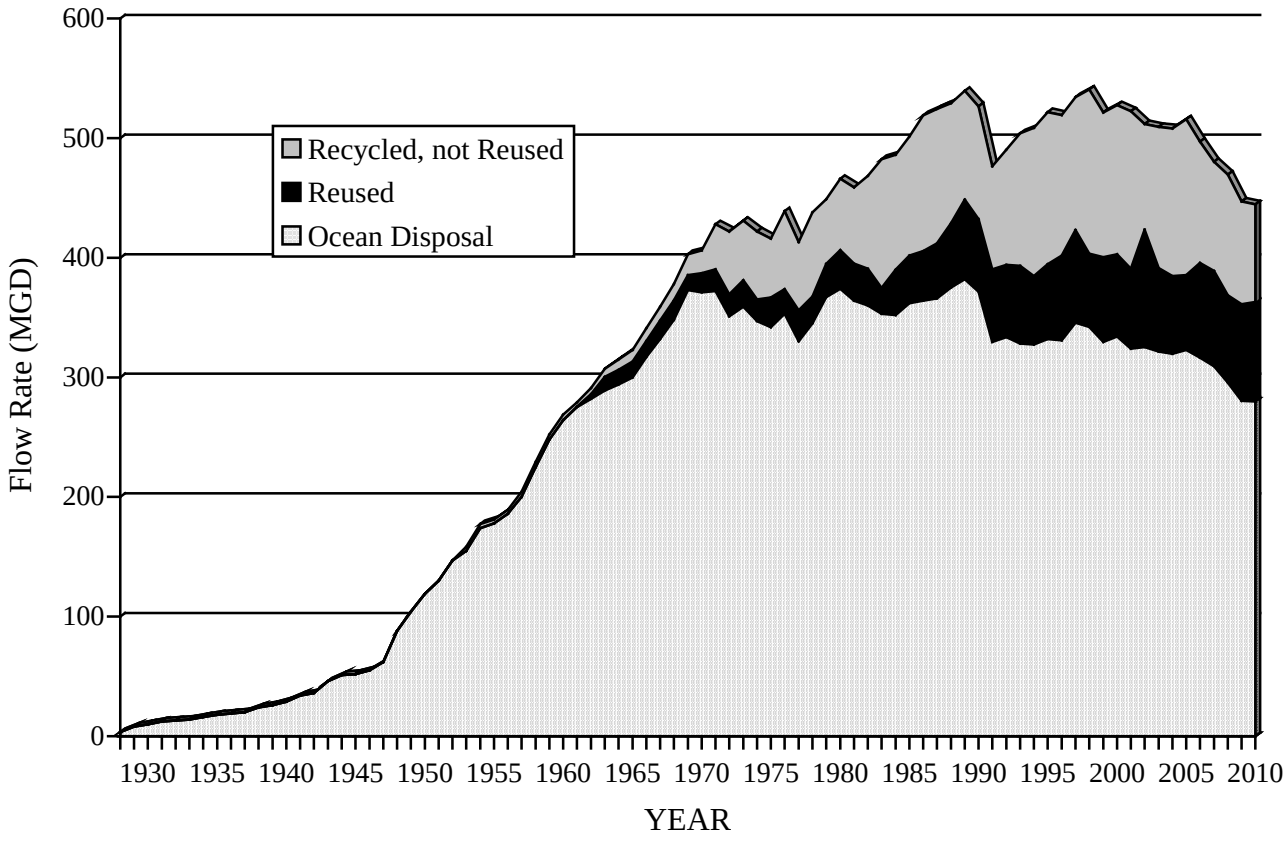
FIGURE 1
LOCATION OF SANITATION DISTRICTS' WASTEWATER TREATMENT FACILITIES



Capacity at the ten Sanitation Districts' WRPs is 252.8 MGD (283,285 AFY) as of the end of FY10-11. However, of the total effluent produced, only 163.92 MGD (183,678 AFY) consisted of recycled water available for reuse from these 10 facilities (64.8% of capacity). This amount is 37.0% of the total amount of effluent produced, and an increase of 0.6% over the preceding fiscal year. The remaining 278.51 MGD (312,089 AFY) was effluent discharged to the ocean from the Sanitation Districts' Joint Water Pollution Control Plant (JWPCP) in the City of Carson, a 0.7% decrease from the preceding fiscal year.

For the past half century, the Sanitation Districts have diverted high quality wastewater flows away from direct ocean disposal to the upstream WRPs in order to provide recycled water supplies for eventual reuse, as illustrated in Figure 2 (data through the end of calendar year 2010). Discharge to the ocean (lower band on graph) has steadily decreased since the WRPs in the Los Angeles Basin (i.e., the Joint Outfall System, or JOS) were built in the early 1970's, while additional needed treatment capacity has been added to the WRPs (the combined upper two bands on the graph). Significant drops in effluent production occurred in 1977 and 1991 in response to serious droughts. A similar drop in effluent production has been occurring since 2006 when the current water crisis in the State became apparent and conservation actions began to be implemented. The majority of these decreases came from the JWPCP, while the upstream WRPs were able to maintain a relatively high level of production, which contributed to recycled water's reputation as being "drought-proof." The center band represents the recycled water produced by the WRPs that is actually being put to beneficial use, while the upper band represents the remaining recycled water that is currently being discharged to rivers, but has the potential to be beneficially reused.

FIGURE 2
SANITATION DISTRICTS' FLOW DIVERSION TO RECYCLING
1928-2010



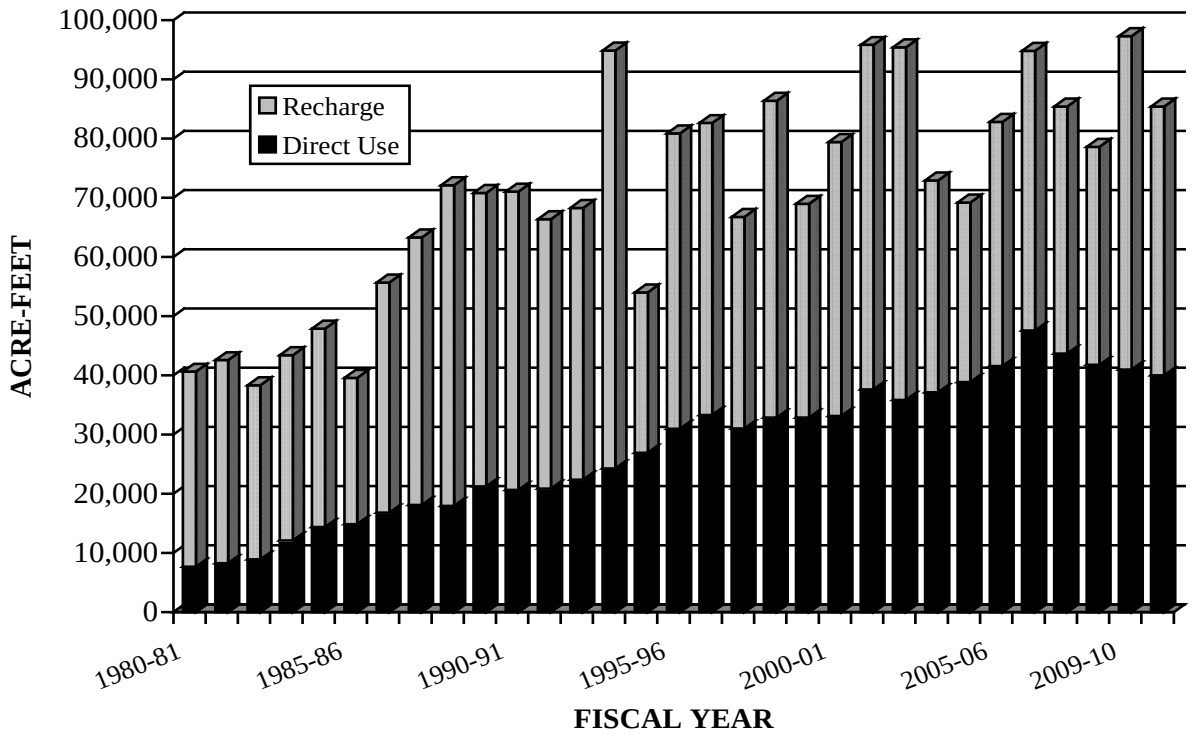
Of the total amount of recycled water produced, 76.256 MGD (85,448 AFY) was actively reused for a variety of applications including urban landscape irrigation, agricultural irrigation, industrial process water, recreational impoundments, wildlife habitat maintenance, and groundwater replenishment. The amount of recycled water produced and reused at each of the WRPs and the percent change from the preceding fiscal year is summarized in Table 1. The amount reused was 46.5% of the recycled water produced, a 12.1% decrease from the preceding fiscal year, which had seen higher than normal reuse volumes. During FY 10-11, 23 new landscape irrigation and three non-irrigation reuse sites began receiving Sanitation Districts' recycled water.

TABLE 1
RECYCLED WATER PRODUCED AND REUSED AT WATER RECLAMATION PLANTS
FISCAL YEAR 2010-11

Water Reclamation Plant	Nominal Treatment Capacity (AFY)	Quantity Recycled (AFY)	Percent Change from FY 09-10 (+/-)	Quantity Reused (AFY)	Percent Change from FY 09-10 (+/-)	Percent of Recycled Water Used
La Cañada	225	106	-0.9	106	-0.9	100
Long Beach	28,015	21,052	+2.7	6,428	-1.9	30.5
Los Coyotes	42,020	23,388	-13.6	5,617	-4.1	24.0
Pomona	16,810	10,089	+7.4	7,620	-7.5	75.6
San Jose Creek	112,055	75,555	-1.7	35,740	-27.5	47.3
Whittier Narrows	16,810	8,701	+64.1	8,330	+57.1	95.7
Valencia	24,205	16,749	-3.9	337	-9.4	2.0
Saugus	7,285	5,616	+5.0	0	0	0
Lancaster	19,050	13,323	+2.0	13,277	+1.6	99.7
Palmdale	16,810	9,099	+6.5	7,993	-5.2	87.8
TOTAL	283,285	183,678	+0.05	85,448	-12.1	46.5

The amount of recycled water used for replenishment of the underground water supply can vary greatly from year to year, depending on the amount and timing of rainfall runoff, maintenance activities in the spreading grounds, and other factors, as illustrated by the upper bar in Figure 3. The long-term trend of recycled water usage is best represented by the increase in direct, non-potable reuse for landscape and agricultural irrigation, industrial process supply, and environmental enhancement. The lower bar on Figure 3 shows the steady growth of annual average daily demand for direct, non-potable reuse through FY 10-11.

FIGURE 3
DIRECT NON-POTABLE REUSE VS. GROUNDWATER RECHARGE
1980-81 TO 2010-11



1.2 WATER RECYCLING PROJECTS

In 1970, prior to the droughts of 1976-77 and 1987-92, there were six reuse customers using 21 MGD on 940 acres (consisting of both irrigable acres and recharge basins). By the end of the subject fiscal year, there were a total of 649 reuse sites on approximately 14,387 acres, utilizing approximately 1,360,790 linear feet (about 258 miles) of transmission pipelines in 30 cities. This usage includes one city employing a water truck to haul recycled water to various greenbelt areas and occasional private water trucks hauling recycled water to construction sites. Table 2 summarizes the approximate length of distribution system pipelines (where applicable), the amount of recycled water used by each of the water recycling projects (detailed in later sections), the percent change from the preceding fiscal year, and the number of new reuse sites added to that recycling project over the past fiscal year. Figure 4 shows the increase in the number of reuse sites receiving recycled water from the Sanitation Districts from 1970 to mid- 2011.

Cities with Sites Using Sanitation Districts' Recycled Water

Bellflower	Norwalk
Bell Gardens	Palmdale
Cerritos	Paramount
Compton	Pico Rivera
Cudahy	Pomona
Diamond Bar	Rowland Heights
Downey	Santa Clarita
El Monte	Santa Fe Springs
Huntington Park	Signal Hill
Industry	South El Monte
La Cañada	South Gate
Lakewood	Vernon
Lancaster	Walnut
Long Beach	West Covina
Lynwood	Whittier

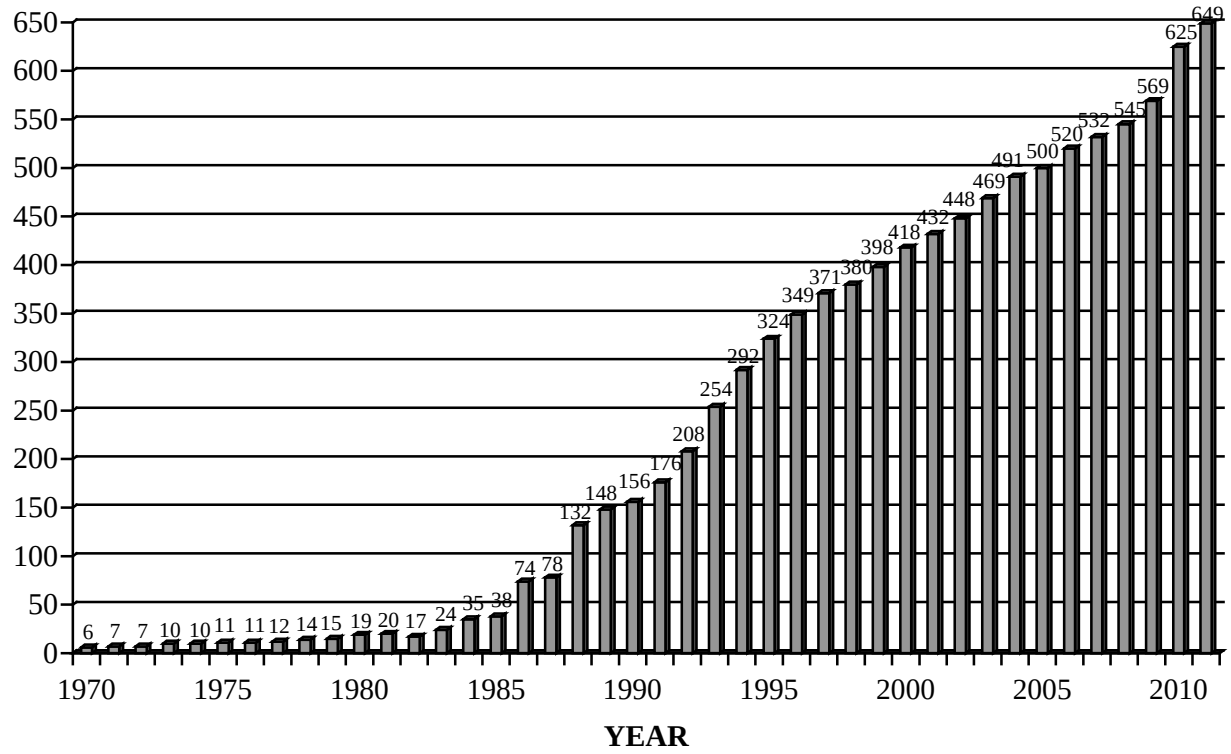
Note: Recycled water is also used in areas of Unincorporated Los Angeles County

TABLE 2
RECYCLED WATER USED BY WATER RECYCLING PROJECT
FISCAL YEAR 2010-11

Project Name	Pipeline Length (linear feet)	Recycled Water Used (AFY)	Percent Change from FY 09-10 (+/-)	No. of New Reuse Sites
La Cañada-Flintridge Country Club		106	-0.9	
Long Beach Water Department	176,630	4,056	-5.1	2
Alamitos Seawater Barrier		2,372	+4.1	
City of Bellflower	1,900	42	-19.2	
City of Cerritos	142,600	1,823	-2.6	
City of Lakewood	28,300	443	-0.2	
Central Basin MWD (Century)	292,500	3,309	-5.1	2
Pomona Water Department	37,000	1,347	-28.3	
Spadra Landfill		350	-9.1	
Walnut Valley Water District	166,320	1,168	-5.6	2
Water Replenishment District		43,029	-41.8	
City of Industry	44,350	957	-18.9	
Rowland Water District	97,680	75	+8.7	18
California Country Club		423	-10.2	
LA Sanchez Nursery		12	0	
Central Basin MWD (Rio Hondo)	138,900	227	+8.6	
Puente Hills/Rose Hills	8,900	2,109	-6.2	
USGVMWD Rio Hondo Extension	11,020	544	-12.4	
F.L. Norman's Nursery[1]		17	-29.2	
Whittier Narrows Recreation Area	18,900	1,432	+149.0	
Castaic Lake Water Agency	16,490	337	-9.4	1
Piute Pond		8,012	+4.1	
Nebeker Ranch	15,900	4,111	-1.9	
Apollo Community Regional Park	23,800	206	+5.1	
Eastern Agricultural Site	96,600	947	-3.2	
City of Lancaster	29,800	1	-90.0	1
Los Angeles World Airports Lease	13,200	7,993	-5.2	
TOTALS	1,360,790	85,448	-12.1	26

1. Site ceased operations in April 2011.

FIGURE 4
INCREASE IN NUMBER OF REUSE SITES
1970-2011



During FY 10-11, 34.156 MGD (38,274 AFY) was used for groundwater replenishment from the San Jose Creek and Whittier Narrows WRPs. Approximately 1,534,463 acre-feet (AF) of recycled water from these two plants have been used to recharge the Central Basin aquifer since August 1962, when the Whittier Narrows WRP was commissioned, through the end of FY 10-11. Another 4.244 MGD (4,755 AFY) of effluent discharged from the Pomona WRP to the San Jose Creek Channel was credited toward indirect groundwater recharge, after estimating how much of this discharge was lost to the ocean during the winter storm season. In the past, this flow stream was not included in the total amount of recycled water used, since most of it entered groundwater via incidental recharge upstream of the spreading grounds. However, because this flow stream is credited against the allowable amount to be recharged, it has been included in the total amount of water actively reused, beginning in FY 94-95.

More recycled water is typically used for groundwater recharge (via surface spreading) than for all other applications combined because of its cost-effectiveness. The San Jose Creek, Whittier Narrows, and Pomona WRPs discharge to rivers or creeks (i.e., flood control channels) that can convey the water by gravity to existing off-stream recharge basins. These basins and the unlined portions of the rivers and creeks permit large volumes of recycled water to percolate by gravity into the aquifer. Recycled water used in this way requires no additional capital improvement and related operation and maintenance (O&M) costs or any energy consumption for pumping.

There was another source of replenishment water during FY 10-11, as the Alamitos Seawater Intrusion Barrier received 2.116 MGD (2,372 AFY) of recycled water originating from the Long Beach WRP and treated to an advanced level (see details in Section 2.2.2). Even though the purpose of this facility is to prevent seawater from moving inland and contaminating the groundwater aquifer, most of the injected water (roughly 80%) moves inland and becomes part of the region's drinking water supply. Due to operational limitations, the full

capacity of the Leo Vander Lans advanced treatment plant that supplies the Alamitos Barrier is still not being realized.

During FY 10-11, the total of 40.516 MGD (45,401 AFY) that went to groundwater replenishment was a 19.2% decrease from the preceding fiscal year. Of the total amount of water reused during FY 10-11, 52.4% went for groundwater replenishment, which is only the second time in the past seven years that this reuse application has made up more than half of total reuse. Concerns over the potential for a fish kill of a colony of non-native *Tilapia* fish living in effluent from the San Jose Creek WRP discharged to the lined portion of the San Gabriel River had previously prevented that effluent source from being diverted directly into the San Gabriel Coastal Spreading Grounds, necessitating that it continue to be discharged to the lined portion of the river instead. However, modifications were made at the spreading ground diversion gate that allowed it to be partially closed. In March 2009, a partial closure of the gate was initiated, with the degree of closure being increased incrementally over the following months to a point where the majority of flow in the Outfall was being diverted for recharge. The small amount of effluent being discharged to the lined portion of the San Gabriel River is sufficient to sustain the fish until a permanent solution for this invasive species can be found.

The remainder of the recycled water usage was divided between four broad categories of direct usage:

- A total of 602 of the individual reuse sites used recycled water for some form of landscape irrigation, and approximately 13.659 MGD (15,306 AFY), or 18.2% of the total water reused, went toward this application. These sites include 104 parks, 101 schools, 195 commercial and office buildings (e.g., offices, warehouses, retail, car dealerships, hotels, restaurants, etc.), 107 roadway greenbelts, 27 public facilities (e.g., police station, post office, libraries, landfills, etc.), 23 golf courses, 21 nurseries, 17 residential developments, 11 churches, and 7 cemeteries.

- Agricultural usage at 11 reuse sites accounted for approximately 12.129 MGD (13,591 AFY), or 16.1% of the total reused.

- Twenty-one industrial applications of recycled water (which include carpet dyeing, oil field injection, power plant cooling towers, metal finishing, street sweeping, sewer flushing, and construction applications such as dust control and concrete mixing) totaled 2.794 MGD (3,131 AFY), or 3.7% of the total reused.

- Approximately, 7.150 MGD (8,012 AFY), or 9.5% of the total reused, went to environmental enhancement of a wildlife habitat (Piute Ponds) in the Mojave Desert.

TOP TEN – LARGEST DIRECT REUSE SITES OF 2010-11*

1. **Antelope Valley Farms** **7,887 AFY**
   Palmdale WRP *(agricultural irrigation of alfalfa)*
2. **Nebeker Ranch** **4,111 AFY**
   Lancaster WRP *(agricultural irrigation of alfalfa)*
3. **Alamitos Intrusion Barrier** **2, 372 AFY**
   Long Beach WRP *(seawater barrier injection)*
4. **THUMS** **1,160 AFY**
   Long Beach WRP *(oil zone repressurization)*
5. **Puente Hills Landfill** **1,005 AFY**
   San Jose Creek WRP *(irrigation & dust control)*
6. **Industry Hills Recreation Area** **957 AFY**
   San Jose Creek WRP *(landscape irrigation)*
7. **Eastern Agricultural Site** **947 AFY**
   Lancaster WRP *(agricultural irrigation of alfalfa)*
8. **Rose Hills Memorial Park** **910 AFY**
   San Jose Creek WRP *(landscape irrigation)*
9. **Whittier Narrows Recreation Area** **798 AFY**
   Whittier Narrows WRP *(landscape irrigation)*
10. **Bonelli County Regional Park** **740 AFY**
    Pomona WRP *(landscape irrigation)*

** excluding discharge-based reuse applications of groundwater recharge by spreading and Piute Ponds*

Table 3 lists the number of sites in each category of use, along with total acreage and average daily usage. Figure 5 shows the distribution of reuse flows among these various applications.

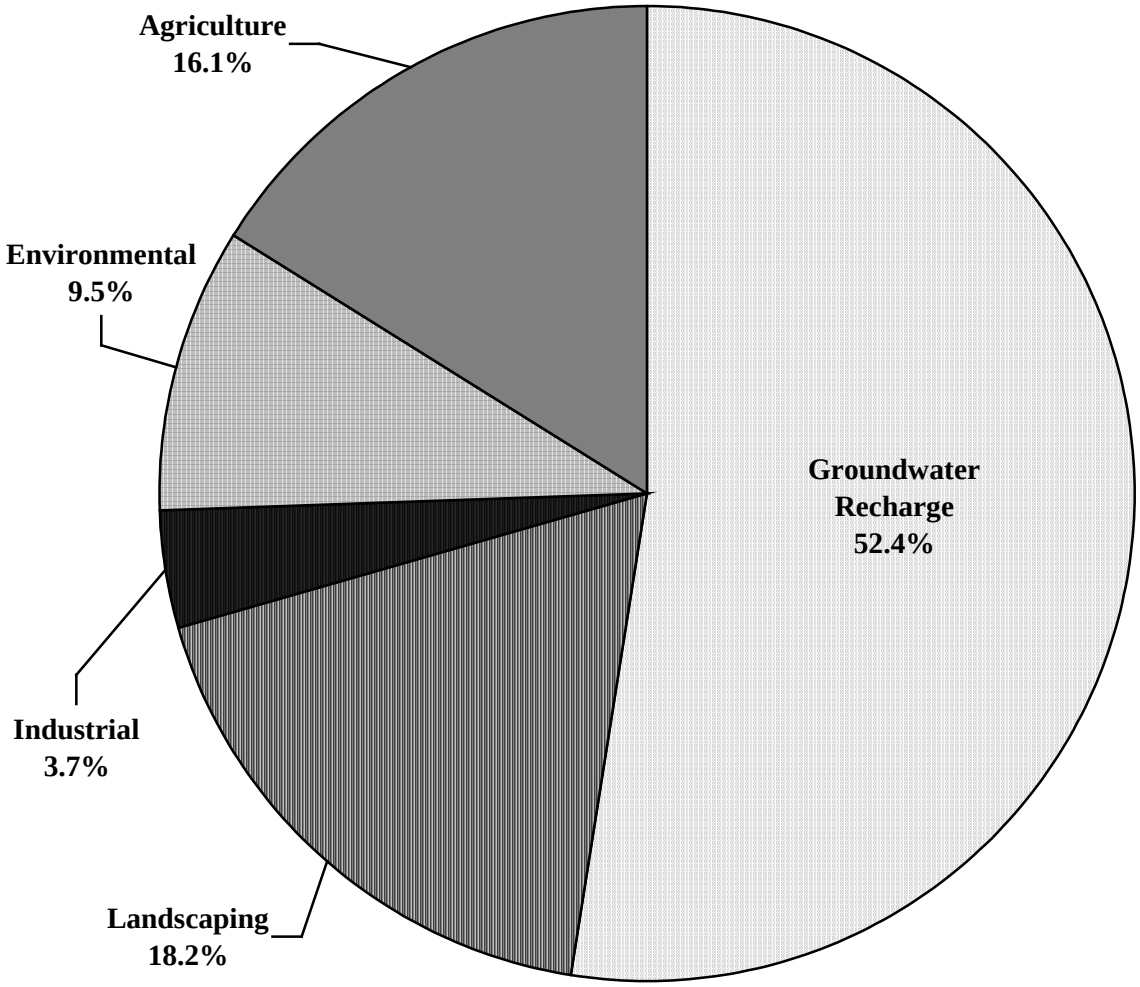
TABLE 3
CATEGORIES OF RECYCLED WATER USAGE
FISCAL YEAR 2010-11

Reuse Application	No. of Sites	Area Applied (acres)	Usage (MGD)
Parks	104	3,458.9	3.770
Golf Courses	23	2,665.8	3.999
Schools	101	1,203.7	1.548
Roadway Greenbelts	107	640.8	0.907
Public Facilities[1]	27	494.0	1.100
Commercial Buildings[2]	195	426.4	0.896
Nurseries	21	134.5	0.130
Cemeteries	7	701.4	1.037
Residential Developments	17	114.3	0.236
Churches	11	12.5	0.036
Industrial[3]	21	157.5	2.794
Agriculture[4]	10	3,977.0	12.129
Environmental Enhancement	1	400	7.150
SUBTOTAL	645	14,386.8	35.732
Groundwater Recharge	4	646	40.516
TOTAL	649	15,032.8	76.248

NOTES:

1. "Public Facilities" includes police stations, libraries, post offices, city halls, government offices, landfills, etc.
2. "Commercial Buildings" includes offices, warehouses, retail, car dealerships, hotels, restaurants, etc.
3. Industrial processes receiving recycled water include paper manufacturing, carpet dyeing, concrete mixing, cooling, oil field injection, construction applications such as soil compaction and dust control, and process equipment testing at the Alamitos Barrier Advanced Treatment Plant.
4. California Polytechnic University, Pomona, while technically a school, uses most of its recycled water for agricultural purposes and is thus included in this category.

FIGURE 5
DISTRIBUTION OF RECYCLED WATER USAGE
FISCAL YEAR 2010-11



1.3 ECONOMIC AND ENVIRONMENTAL IMPACTS

At the end of FY 10-11, the Sanitation Districts had 24 contracts (four pending initial deliveries) for the sale and/or delivery of recycled water produced at its facilities. Actual O&M and energy costs incurred by the Sanitation Districts while operating the pump stations on behalf of the purchasers of recycled water are also fully recovered through these contracts. Since the recycled water delivered to the various distribution systems was not dosed with either sulfur dioxide or sodium bisulfate for dechlorination or with defoamant, an estimated $128,000 in chemical savings was realized at the five Sanitation Districts' tertiary WRPs located in the JOS and at the Valencia WRP in the Sanitation Districts' Santa Clarita Valley Joint Sewerage System (SCVJSS).

Table 4 compares selected potable water rates and recycled water rates (in effect as of the end of FY 10-11), illustrating the savings realized by the end users. Table 5 lists all of the current recycled water purveyors.

TABLE 4
POTABLE VS. RECYCLED WATER RATES
FISCAL YEAR 2010-11

Purveyor	Potable Water ($/AF)	Recycled Water ($/AF)	Discount (%)
Long Beach Water Department	1,062.43	531.43 – 744.00	30 – 50
City of Cerritos	614.20	326.70	47
City of Lakewood	945.25	444.31	53
Central Basin MWD	805.00 – 915.00	283.00 – 506.00	31 – 63
Pomona Water Department	962.68	521.67	46
Walnut Valley Water District	1,019.30	649.04	36
Rowland Water District	1,010.59	635.98	37
San Gabriel Valley Water Co.	899.95	220.00 – 771.62	14 – 76
Valencia Water Company	609.40	511.83	16

To put things into perspective, the 85,448 AF of water reused in FY 10-11 is equivalent to the water supply for a population of 427,240, between the cities of Virginia Beach, VA and Atlanta, GA, the 39th and 40th largest cities in the U.S.[3] The use of locally produced recycled water reduces the need to pump State Project water over the Tehachapi Mountains at a net energy cost of roughly 3,000 kilowatt-hours (kWh) per acre-foot.[4] Thus, approximately 256.3 million kWh of electricity were conserved in FY 10-11, which is equivalent to the annual output of a 29.3-megawatt power plant consuming nearly 140,000 barrels of oil. At $0.15/kWh (based on Southern California Edison residential billing rate), this equates to an annual savings of approximately $38.5 million in electricity. At $94.94/barrel,[5] this equates to an annual savings of approximately $13.2 million in oil.

The conservation of fossil fuels and energy also resulted in significant reductions in potential air pollutants. During FY 10-11, 147.4 tons of nitrogen oxide, 25.6 tons of carbon monoxide, 15.4 tons of sulfur oxides, 5.1 tons of particulates, and 1.3 tons of reactive organic gases were kept out of the atmosphere.[6] Perhaps more important, the use of local recycled water avoided the production of approximately 192,300 tons of carbon dioxide, a greenhouse gas that contributes to global warming.[7]

Table 6 summarizes the water, energy, chemicals, and air pollutant savings realized by the use of local recycled water sources.

3 2010 Census.

4 "Refining Estimates of Water-Related Energy Use in California," California Energy Commission, December 2006.

5 June 30, 2011 spot price for "West Texas Intermediate crude oil".

6 Estimates based upon emission factors from "Power Plant Fuel Use and Emissions," South Coast Air Quality Management District, May 1986.

7 Estimate based upon data from "Compilation of Air Pollutant Emission Factors, Vol. 1: Stationary Point and Area Sources," USEPA, January 1995.

TABLE 5
RECYCLED WATER PURVEYORS

City of Long Beach
1800 East Wardlow Road
Long Beach, CA 90807-4994
(562) 570-2300

City of Cerritos
Bloomfield at 183rd Street
Cerritos, CA 90701
(562) 860-0311

City of Lakewood
5050 North Clark Avenue
Lakewood, CA 90714
(562) 866-9771

City of Bellflower
16600 Civic Center Drive
Bellflower, CA 90706
(562) 804-1424

City of Industry
P.O. Box 3366
Industry, CA 91744
(626) 333-2211

City of Pomona
505 South Garey Avenue
Pomona, CA 91766
(909) 620-2253

City of Cudahy
5220 Santa Ana Street
Cudahy, CA 90201
(323) 773-5143

Walnut Valley Water District
271 South Brea Canyon Road
Walnut, CA 91789
(909) 595-1268

City of Pico Rivera
6615 Passons Boulevard
Pico Rivera, CA 90660-1016
(562) 801-4462

City of Vernon
4305 Santa Fe Avenue
Vernon, CA 90058
(323) 583-8811

City of Paramount
16400 Colorado Avenue
Paramount, CA 90723
(562) 220-2020

City of Santa Fe Springs
11710 Telegraph Road
Santa Fe Springs, CA 90670
(562) 868-0511

City of Downey
9252 Stewart & Gray Road
Downey, CA 90242
(562) 904-7202

City of Whittier
13250 East Penn Street
Whittier, CA 90602
(562) 945-8215

City of South Gate
4244 Santa Ana Street
South Gate, CA 90280
(323) 563-5795

City of Lynwood
11330 Bullis Road
Lynwood, CA 90262
(562) 603-0220

City of Norwalk
12700 Norwalk Boulevard
Norwalk, CA 90650
(562) 929-2677

Rowland Water District
3021 S. Fullerton Road
Rowland Heights, CA 91748
(562) 697-1726

Castaic Lake Water Agency
27234 Bouquet Canyon Road
Santa Clarita, CA 91350
(661) 297-1600

City of Lancaster
615 West Avenue H
Lancaster, CA 93534
661-945-6863

Central Basin Municipal Water District
6252 Telegraph Road
Commerce, CA 90040-2512
(323) 201-5555

Park Water Company
9750 Washburn Road
Downey, CA 90241
(562) 923-0711

Bellflower Municipal Water Systems
16913 Lakewood Blvd.
Bellflower, CA 90706
(562) 531-1500

Bellflower-Somerset Mutual Water Co.
10016 Flower Street
Bellflower, CA 90706
(562) 866-9980

Golden State Water Company
11469 Rosecrans Avenue
Norwalk, CA 90650
(562) 907-9200

San Gabriel Valley Water Company
11142 Garvey Avenue
El Monte, CA 91733
(626) 448-6183

City of Huntington Park
6900 Bissell Street
Huntington Park, CA 90255
(323) 584-6323

Upper San Gabriel Valley MWD
11310 East Valley Boulevard
El Monte, CA 91731
(626) 423-2297

Valencia Water Company
24631 Avenue Rockefeller
Valencia, CA 91355
(661) 294-0828

Los Angeles Co. Waterworks No. 40
900 S. Fremont Avenue
Alhambra, CA 91803
(626) 458-5100

TABLE 6
WATER, ENERGY, CHEMICAL, AND AIR POLLUTANT SAVINGS FROM RECYCLED WATER USAGE - FISCAL YEAR 2010-11

Category	Units	Savings
Water Supply	acre-feet	85,448
Water Supply	No. of People	427,240
Energy	kilowatt-hours	256,344,000
Energy	megawatts	29.3
Energy	barrels of oil	138,914
Electricity	dollars	38,451,600
Petroleum	dollars	13,188,495
WRP chemicals	dollars	128,000
Nitrogen oxide	tons	147.4
Carbon monoxide	tons	25.6
Sulfur oxides	tons	15.4
Particulates	tons	5.1
Reactive organic gases	tons	1.3
Carbon dioxide	tons	192,258

1.4 SUMMARY

Of the 442.43 MGD of treated effluent produced by the Sanitation Districts, 163.92 MGD (37.0%) was treated to a suitable level for reuse, with 76.256 MGD (17.2%) actually being reused at 649 individual sites in 30 cities for numerous diverse applications (with slightly more than half of the reuse being for groundwater replenishment). Effluent production continued to decrease due to increased conservation and reduced commercial/industrial activity. The top 10 largest direct reuse sites (less than 2% of all sites, excluding recharge and environmental) used almost 25% of the recycled water delivered during the fiscal year. Twenty-six new reuse sites were added during FY 10-11; however, the amount of recycled water used decreased by 12.1% from the preceding fiscal year mostly due to a decrease in the amount of groundwater replenishment. The use of 85,448 AF of locally produced recycled water essentially resulted in the conservation of the water supply needs of nearly half a million people, and in significant reductions in treatment plant chemical usage, water rates for end users, energy consumption, and air pollution.

Since the official beginning of the Sanitation Districts' water recycling program in August 1962 with the start-up of the Whittier Narrows WRP, approximately 2,497,638 AF (813.6 billion gallons) of recycled water produced by Sanitation Districts' facilities have been beneficially used. This use of recycled water has avoided the release of approximately 5.62 million tons of carbon dioxide and 5,695 tons of other air pollutants into the atmosphere.

All of the currently active reuse sites, along with their acreage, start-up dates, applications, and quantities of recycled water used for FY 10-11 are presented chronologically in Table 7. A chronology of significant events in the Sanitation Districts' reuse programs is presented at the end of this report in Appendix A. Final effluent quality for each of the Sanitation Districts' tertiary WRPs is presented in Appendix B.

TABLE 7
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
(PAGE 1 OF 12)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Water Replenishment District (WNWRP)	Aug 62	--	R	6.141	6,881
La Cañada-Flintridge Country Club (La Cañada)	Oct 62	105	L,P	0.095	106
Apollo Lakes Community Regional Park (Lancaster)	Jun 69	56	L,P	0.184	206
Water Replenishment District (SJCWRP)	Jun 71	--	R	28.015	33,933
Cal Poly, Pomona-Kellogg (Pomona)	Dec 73	500	AG,L,O,P,AF	0.469	526
Lanterman Hospital (Pomona)	Dec 73	100	AG	0	0
South Campus Drive Parkway (Pomona)	Dec 73	8	L	0.010	11
Route 57 and 10 Freeways (Pomona)	May 75	18	L	0.020	23
Bonelli Regional County Park (San Dimas)	Apr 77	789	L	0.660	740
California Country Club (Industry)	Jun 78	120	L,P	0.378	423
Ironwood 9 Golf Course (Cerritos)	Nov 78	25	L,P	0.083	93
Caruthers Park (Bellflower)	Nov 78	5	L	0.038	42
El Dorado Park West (Long Beach)	Aug 80	135	L	0.128	144
El Dorado Golf Course (Long Beach)	Aug 80	150	L	0.223	249
Suzanne Park (Walnut)	Oct 80	12	L	0.014	16
Route 71 and 10 Freeways (Pomona)	Apr 81	12	L	0.036	40
Piute Ponds (Lancaster)	May 81	400	E	7.150	8,012
Recreation Park (Long Beach)	Oct 82	26	L	0.042	47
Recreation Golf Course (Long Beach)	Oct 82	149	L	0.197	221
Norman's Nursery (El Monte)	Mar 83	20.2	O	0.016	17
Whaley Park (Long Beach)	Jun 83	9	L	0.017	19
Industry Hills Recreation Area (Industry)	Aug 83	600	L,P	0.854	957
El Dorado Park East (Long Beach)	Jan 84	300	L	0.326	365
Nature Center (Long Beach)	Jan 84	60	L	0.058	64
605 Freeway at Wardlow (Long Beach)	Feb 84	50	L	0.028	32
Heartwell Park (Long Beach)	Feb 84	120	L	0.131	147
Skylinks Golf Course (Long Beach)	Apr 84	155	L,P	0.228	255
Douglas Park (Long Beach)	Apr 84	3	L	0.003	4
405 Freeway at Atherton (Long Beach)	May 84	5	L	0.00001	0.01
DeMille Junior High School (Long Beach)	Jun 84	5	AF,L	0.0004	0.4
Heartwell Golf Park (Long Beach)	Jun 84	30	L	0.060	68
Spadra Landfill landscape (Pomona)	Jul 84	53	L	0.240	269
Spadra Landfill dust control (Pomona)	Jul 84	--	I	0.010	11
Veterans Memorial Stadium (Long Beach)	Jan 85	6	AF	0.021	24
Harrington Farms Pistachio Orchard (Palmdale)	Apr 85	23	AG	0.082	92
Recreation Park Bowling Green (Long Beach)	Aug 85	3	L	0.004	5
California State University, Long Beach	Dec 85	52	AF,L	0.112	125
Long Beach City College (Long Beach)	Feb 86	15	AF,L	0.022	25
Recreation 9-Hole Golf Course (Long Beach)	Mar 86	37	L	0.059	66
Blair Field (Long Beach)	Apr 86	5	AF	0.010	12
Woodlands Park (Long Beach)	Apr 86	7	L	0.011	12
Colorado Lagoon Park (Long Beach)	Apr 86	4	L	0.003	4
Marina Vista Park (Long Beach)	Apr 86	30	L	0.027	30
Suzanne Middle School (Walnut)	May 86	4	AF,L	0.012	13
Walnut High School (Walnut)	May 86	15	AF,L	0.019	21
Vejar School (Walnut)	May 86	3	AF,L	0.010	11
Morris School (Walnut)	May 86	9	AF,L	0.009	10
Snow Creek Park (Walnut)	May 86	7	L	0.011	12
Snow Creek Landscape Maintenance Dist. (Walnut)	May 86	13.5	L	0.036	41
Lemon Creek Park (Walnut)	May 86	5	L	0.005	6
Friendship Park (West Covina)	May 86	6	L	0.007	8
Hollingworth School (West Covina)	May 86	3	AF,L	0.007	8
Lanesboro Park (West Covina)	May 86	2	L	0.007	7
Rincon Middle School (West Covina)	May 86	3	AF,L	0.008	9

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

TABLE 7
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
(PAGE 2 OF 12)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Route 57 and 60 Freeways (Rowland Heights)	May 86	19.7	L	0.035	39
Rowland Heights Reg. Co. Park (Rowland Heights)	May 86	11	L	0.012	13
Rowland High School (Rowland Heights)	May 86	9	AF,L	0.020	23
Killian Elementary School (Rowland Heights)	May 86	3	AF,L	0.005	6
Walnut Elementary School (Walnut)	May 86	4	AF,L	0.001	1
WUSD Administrative Service Center (Walnut)	May 86	4	L	0.002	3
Walnut Ranch Park (Walnut)	Jun 86	26	L	0.019	22
Amar Road greenbelt (Walnut)	Jun 86	16	L	0.015	17
Diamond Bar Golf Course (Diamond Bar)	Jul 86	174	L,P	0.165	185
Walnut Ridge Landscape Maintenance Dist. (Walnut)	Mar 87	25.5	L	0.030	34
Morningside Park (Walnut)	Mar 87	4	L	0.004	4
Gateway Corporate Center (Diamond Bar)	Jun 87	45	L	0.045	51
Library/Civic Center (Cerritos)	Dec 87	4	L	0.014	16
Olympic Natatorium (Cerritos)	Dec 87	6	L	0.016	18
Whitney Learning Center (Cerritos)	Dec 87	10	AF,L	0.019	21
Gonsalves Elementary School (Cerritos)	Dec 87	5	AF,L	0.014	16
Wittman Elementary School (Cerritos)	Dec 87	5	AF,L	0.009	10
Gahr High School (Cerritos)	Dec 87	28	AF,L	0.053	60
Area Development Project No. 2 (Cerritos)	Jan 88	11.5	L,P	0.055	61
Medians/Parkways (Cerritos)	Jan 88	42.8	L	0.145	162
605 Freeway (Cerritos)	Jan 88	58.6	L	0.131	147
91 Freeway (Cerritos)	Jan 88	70	L	0.036	41
Frontier Park (Cerritos)	Jan 88	2.5	L	0.008	9
Carmenita Junior High School (Cerritos)	Jan 88	5	AF,L	0.017	19
Cerritos Elementary School (Cerritos)	Jan 88	6	AF,L	0.017	20
Stowers Elementary School (Cerritos)	Jan 88	6	AF,L	0.022	25
Kennedy Elementary School (Cerritos)	Jan 88	7	AF,L	0.021	24
City Park East (Cerritos)	Jan 88	18	L	0.040	45
Satellite Park (Cerritos)	Jan 88	2	L	0.005	5
Leal Elementary School (Cerritos)	Jan 88	6	AF,L	0.010	11
Cerritos High School (Cerritos)	Jan 88	20	AF,L	0.039	44
Elliott Elementary School (Cerritos)	Jan 88	7	AF,L	0.013	14
Carmenita Park (Cerritos)	Jan 88	4.5	L	0.012	14
Juarez Elementary School (Cerritos)	Jan 88	7	AF,L	0.019	21
ABC Adult School & Office (Cerritos)	Jan 88	3	L	0.014	15
Tracy Education Center (Cerritos)	Jan 88	6	AF,L	0.003	3
Liberty Park (Cerritos)	Jan 88	20	L	0.069	77
Gridley Park (Cerritos)	Jan 88	9	L	0.019	21
Jacob Park (Cerritos)	Jan 88	4.5	L	0.012	13
Heritage Park (Cerritos)	Feb 88	12	L	0.034	38
Bragg Elementary School (Cerritos)	Feb 88	7	AF,L	0.023	26
Haskell Junior High School (Cerritos)	Feb 88	18	AF,L	0.039	44
Pat Nixon Elementary School(Cerritos)	Feb 88	5	AF,L	0.009	10
Cabrillo Lane Elementary School (Cerritos)	Feb 88	9	AF,L	0	0
Sunshine Park (Cerritos)	Feb 88	3.5	L	0.008	9
Friendship Park (Cerritos)	Feb 88	4	L	0.008	9
Bettencourt Park (Cerritos)	Feb 88	2	L	0.005	5
Brookhaven Park (Cerritos)	Feb 88	2	L	0.006	7
Saddleback Park (Cerritos)	Feb 88	2	L	0.005	5
Westgate Park (Cerritos)	Feb 88	4	L	0.007	8
Rainbow Park (Cerritos)	Mar 88	2.5	L	0.007	8
Bellflower Christian School (Cerritos)	Mar 88	31.4	AF,L	0.034	38
Cerritos Community College (Cerritos)	Mar 88	55	AF,L	0.074	83
Cerritos Regional County Park (Cerritos)	Apr 88	59	L	0.109	122

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

TABLE 7
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
(PAGE 3 OF 12)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Artesia Cemetery District (Cerritos)	Apr 88	10.9	L	0.022	24
Rosewood Park (Cerritos)	Apr 88	2.7	L	0.008	9
20659 E. Valley Blvd. (Walnut)	May 88	7	O	0.0001	0.01
Nebeker Ranch (Lancaster)	Jun 88	600	AG	3.668	4,111
Lakewood 1st Presbyterian Church (Long Beach)	Sep 88	1	L	0.001	1
Westhoff Elementary School (Walnut)	Sep 88	8	AF,L	0.006	6
Tree Farm (Palmdale)	Feb 89	46	O	0.012	13
Virginia Country Club (Long Beach)	Mar 89	135	L,P	0.077	86
Lakewood Golf Course (Long Beach)	Mar 89	128	L,P	0.272	305
Scherer Park (Long Beach)	Mar 89	24	L	0.031	35
Sports Complex (Cerritos)	Mar 89	25	AF,L	0.045	51
Sunnyside Memorial Park (Long Beach)	Apr 89	35	L	0.071	79
All Soul's Cemetery (Long Beach)	Apr 89	40	L	0.104	116
Cherry Avenue Park (Long Beach)	May 89	10	L	0.011	13
River (Rynerson) Park (Lakewood)	Aug 89	40	L	0.064	72
Monte Verde Park (Lakewood)	Aug 89	4	L	0.051	58
Mae Boyer Park (Lakewood)	Aug 89	8	L	0.032	35
Jose Del Valle Park(Lakewood)	Aug 89	12	L	0.026	29
Jose San Martin Park (Lakewood)	Aug 89	9.3	L	0.021	23
City Water Yard (Lakewood)	Aug 89	1	L	0.010	11
Woodruff Avenue greenbelt (Lakewood)	Aug 89	4.1	L	0.011	12
South Street greenbelt (Lakewood)	Aug 89	3.3	L	0.009	10
Mayfair Park (Lakewood)	Dec 89	18	L	0.039	44
Shoemaker On/Off Ramp - 91 Freeway (Cerritos)	Dec 89	4.6	L	0.013	14
Temple Avenue greenbelt (Walnut)	Jan 90	1	L	0.001	1
Transpacific Development Co. (Cerritos)	Feb 90	6.9	L	0.010	11
Automated Data Processing (Cerritos)	Feb 90	0.7	L	0.004	4
Sheraton Hotel (Cerritos)	Mar 90	0.6	L	0.003	4
Walnut Tech Business Center (Walnut)	Apr 90	1	L	0.002	2
Cerritos Pontiac/GMC Truck (Cerritos)	May 90	0.5	L	0.001	1
Moothart Chrysler (Cerritos)	May 90	0.4	L	0.005	6
St. Joseph Parish School (Lakewood)	Aug 90	3.5	AF,L	0.010	11
Foster Elementary School (Lakewood)	Sep 90	6	AF,L	0.016	18
Windjammer Off Ramp - 91 Freeway	Sep 90	0.8	L	0.002	2
Browning Oldsmobile (Cerritos)	Sep 90	0.1	L	0.001	1
Civic Center Way and City Hall	Nov 90	2.8	L	0.014	16
Los Coyotes Diagonal(Long Beach)	Mar 91	1	L	0.001	1
City Water Truck (Cerritos)	May 91	--	L	0.0003	0.4
Private Haulers (Cerritos)	May 91	--	I	0	0
Parkside Condominiums (Cerritos)	May 91	1.8	L	0.006	6
Mayfair High School (Lakewood)	May 91	36.5	AF,L	0.041	46
Wilson High School	Jun 91	5	AF,L	0.022	24
Concordia Church (Cerritos)	Jun 91	4	L	0.005	6
Church of the Nazarene (Cerritos)	Aug 91	1	L	0.003	4
B&B Stables (Cerritos)	Aug 91	18	I	0.005	5
Lemon Avenue greenbelt (Walnut)	Sep 91	4.3	L	0.006	7
Lindstrom Elementary School (Lakewood)	Sep 91	12	AF,L	0.014	15
Lakewood High School (Lakewood)	Sep 91	25	AF,L	0.024	27
Shadow Park Homeowner's Association (Cerritos)	Nov 91	6	L	0.014	16
South Coast AQMD Headquarters (Diamond Bar)	Nov 91	2	L	0.005	5
Long Beach Water Department office	Jan 92	2	L	0.002	2
Reservoir Park (Signal Hill)	Feb 92	2	L	0.009	10
Burroughs Elementary School (Signal Hill)	Feb 92	4	AF,L	0.003	3
Andy's Nursery (Bellflower)	Feb 92	9	O	0	0

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

TABLE 7
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
(PAGE 4 OF 12)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Lake Center Park (Santa Fe Springs)	Mar 92	8	L	0.018	20
Lake Center School (Santa Fe Springs)	Mar 92	8	AF,L	0.016	18
Clarkman Walkway (Santa Fe Springs)	Mar 92	0.1	L	0.0003	0.3
Hughes Middle School (Long Beach)	Apr 92	3	AF,L	0.013	15
405 Freeway at Walnut (Long Beach)	Apr 92	9	L	0.008	9
Area Development Project No. 6 (Cerritos)	Apr 92	9	L	0.056	63
Towne Center Walkway (Santa Fe Springs)	Apr 92	0.1	L	0.0003	0.3
Lakeview Child Care (Santa Fe Springs)	May 92	0.2	L	0.001	2
Orr & Day Road medians (Santa Fe Springs)	May 92	0.1	L	0.00002	0.03
Somerset Park (Long Beach)	May 92	3	L	0.001	1
Longfellow Elementary School (Long Beach)	May 92	1	AF,L	0	0
Granada Park Homeowners Association (Cerritos)	May 92	3.8	L	0.013	15
Walnut Valley Water Dist. reservoir (Diamond Bar)	May 92	1	L	0.005	6
Florence Avenue medians (Santa Fe Springs)	Jun 92	3	L	0.005	6
Gauldin Elementary School (Downey)	Jun 92	8.4	AF,L	0.005	5
Rio San Gabriel School (Downey	Jun 92	14.8	AF,L	0.014	16
Bellflower High School (Bellflower)	Jul 92	28.4	AF,L	0.063	70
Ernie Pyle Elementary School (Bellflower)	Aug 92	4.9	AF,L	0.012	13
Telegraph Road medians (Santa Fe Springs)	Aug 92	0.5	L	0.003	3
Lakeview Park (Santa Fe Springs)	Aug 92	6.7	L	0.011	12
Clark Estate (Santa Fe Springs)	Aug 92	4.3	L	0.005	5
Towne Center Green (Santa Fe Springs)	Aug 92	2.3	L	0.006	7
Pioneer Road medians (Santa Fe Springs)	Sep 92	0.4	L	0.030	34
Police Station (Santa Fe Springs)	Sep 92	0.2	L	0.001	1
Aquatic Center (Santa Fe Springs)	Sep 92	0.5	L	0.004	4
Lewis School (Downey)	Nov 92	4.6	AF,L	0.005	6
Wilderness Park (Downey)	Nov 92	24	L	0.092	103
First Chinese Baptist Church (Walnut)	Dec 92	0.3	L	0.002	2
605 Freeway at Foster (Bellflower)	Jan 93	14	L	0	0
Promenade Walkway (Santa Fe Springs)	Jan 93	0.3	L	0.001	1
Rio San Gabriel Park (Downey)	Jan 93	6.4	L	0.032	36
East Middle School (Downey)	Jan 93	26	AF,L	0.017	19
Zinn Park (Bellflower)	Jan 93	1.7	L	0.003	4
Cerritos Post Office (Cerritos)	Feb 93	0.7	L	0.005	6
605/105 Interchange (Bellflower)	Feb 93	22	L	0.0001	0.1
Hollywood Sports Center (Bellflower)	Feb 93	22.5	L	0.002	2
Santa Fe Springs High School (Santa Fe Springs)	Feb 93	14.5	AF,L	0.023	25
605/5 Freeway at Florence (Santa Fe Springs)	Feb 93	17	L	0.0002	0.2
Center for the Performing Arts (Cerritos)	Mar 93	1	L	0.004	4
Old Downey Cemetery (Downey)	Apr 93	7.5	L	0.026	30
Thompson Park (Bellflower)	Apr 93	15	L	0.014	16
105 Freeway at Bellflower (Downey)	May 93	17.9	L	0.009	10
Palms Park (Lakewood)	May 93	20	L	0.003	3
Crawford Park (Downey)	Jul 93	2.1	L	0.006	7
Humedo Nursery (Downey)	Aug 93	11	O	0.005	6
105 Freeway at Lakewood (Downey)	Sep 93	25	L	0.003	4
Shaw Industries Carpet Mill (Santa Fe Springs)	Sep 93	--	I	0.076	85
Palms Elementary School (Lakewood)	Sep 93	3.5	AF,L	0.012	13
Artesia High School (Lakewood)	Sep 93	20.9	AF,L	0.033	37
West Middle School (Downey)	Oct 93	19.5	AF,L	0.015	17
Circle Park (South Gate)	Oct 93	4	L	0.013	15
Burger King restaurant (Diamond Bar)	Oct 93	0.2	L	0.001	1
Majestic Mgmt., 19850 E. Business Pkwy (Walnut)	Nov 93	0.8	L	0.004	4
General Electric, 19705 E. Business Pkwy. (Walnut)	Nov 93	1.6	L	0.006	7

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

TABLE 7
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
(PAGE 5 OF 12)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Hollydale Park (South Gate)	Nov 93	46	L	0.112	126
Delta Dental (Cerritos)	Nov 93	1.8	L	0.002	2
Cal Poly LandLab (Pomona)	Nov 93	2.5	AG,L	0.013	15
Rodeo Ridge Estates (Walnut)	Dec 93	6.3	L	0.005	6
Robertson's Ready-Mix (Santa Fe Springs)	Dec 93	--	I	0.005	5
710/105 Interchange (Paramount)	Dec 93	18.5	L	0	0
Downey/Contreras greenbelt (Paramount)	Dec 93	0.1	L	0.0003	0.3
Compton Golf Course (Paramount)	Dec 93	13	L	0.021	24
Alondra Junior High School (Paramount)	Dec 93	14	AF,L	0.012	14
Mokler Elementary School (Paramount)	Dec 93	10	AF,L	0.009	11
Los Cerritos Elementary School (Paramount)	Dec 93	8	AF,L	0.011	12
Wirtz Elementary School (Paramount)	Dec 93	9	AF,L	0.011	12
Keppel Elementary School (Paramount)	Dec 93	4	AF,L	0.002	3
Billy Lee Nursery (Paramount)	Dec 93	2.5	O	0.008	9
Golden Springs Drive medians (Diamond Bar)	Jan 94	1.3	L	0.005	6
105 Freeway at Wright (Lynwood)	Jan 94	19.6	L	0.001	2
710 Freeway at M.L. King (Lynwood)	Jan 94	15.5	L	0	0
710 Freeway at Rosecrans (Compton)	Jan 94	24.2	L	0.007	8
Independence Park (Downey)	Feb 94	10.4	L	0.011	13
Paramount Park (Paramount)	Feb 94	9	L	0.022	24
Paramount High School (Paramount)	Feb 94	19	AF,L	0.021	23
Southern California Edison nursery (Cerritos)	Mar 94	3.5	O	0.004	5
Walnut Hills Village Shopping Center (Walnut)	Mar 94	2.4	L	0.004	5
Rosecrans/Paramount medians (Paramount)	Mar 94	0.2	L	0.002	2
Somerset medians (Paramount)	Apr 94	0.9	L	0.005	6
Rio Hondo Golf Course (Downey)	Apr 94	92.4	L	0.193	216
Zimmerman Park (Norwalk)	Apr 94	9.5	L	0.015	17
Vista Verde Park (Norwalk)	Apr 94	6.5	L	0.012	14
Gerdes Park (Norwalk)	Apr 94	8.6	L	0.015	17
Clearwater Junior High School (Paramount)	Apr 94	4	AF,L	0.031	35
Vestar Development (Cerritos)	Jun 94	9.6	L	0.035	39
Steam Engine Park (Paramount)	Jun 94	0.6	L	0.001	1
5 Freeway at Shoemaker/Firestone (Norwalk)	Jul 94	0.8	L	0.003	4
Spane Park (Paramount)	Jul 94	5	L	0.008	9
Orange/Cortland Parkway (Paramount)	Jul 94	1.3	L	0.002	3
Carpenter School (Downey)	Aug 94	7.4	AF,L	0.007	7
Brookside Equestrian Center (Walnut)	Aug 94	13.6	L	0.003	3
Field, S/W corner Norwalk/Telegraph (S.F. Springs)	Aug 94	5.2	L	0.010	11
Washington Elementary School (Whittier)	Sep 94	5	AF,L	0.007	3
605 Freeway at Beverly (Whittier)	Sep 94	30	L	0.044	50
John Anson Ford Park (Bell Gardens)	Sep 94	45	L	0.054	60
Ramona Park (Norwalk)	Oct 94	4.8	L	0.004	4
Alondra median (Paramount)	Oct 94	0.6	L	0.007	8
Imperial/Wright Road medians (Lynwood)	Oct 94	0.2	L	0.001	1
Walnut Valley Water District Office (Walnut)	Oct 94	0.2	L	0.002	2
Cattelus Development (Walnut)	Oct 94	18.9	L	0.016	18
Circuit City, 501 Cheryl Lane (Walnut)	Oct 94	1	L	0.007	8
Dreyer's Grand Ice Cream, 351 Cheryl Lane (Walnut)	Oct 94	0.6	L	0.003	3
Sorenson Elementary School (Whittier)	Oct 94	4	AF,L	0.006	7
Palm Park West (Whittier)	Nov 94	5	L	0.008	8
Metrolink Station (Industry)	Nov 94	0.6	L	0.002	3
Little Lake Park (Santa Fe Springs)	Dec 94	18	L	0.033	36
Sundance Condominiums (Cerritos)	Jan 95	9	L	0.028	32
Del Paso High School (Walnut)	Jan 95	3	AF,L	0.003	3

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TABLE 7
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
(PAGE 6 OF 12)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Dow Corning, 20832 Currier Road (Walnut)	Jan 95	0.1	L	0.0001	0.1
John Anson Ford Park (Bell Gardens)	Sep 94	45	L	0.054	60
Circuit City Headquarters, Currier/Lemon (Walnut)	Apr 95	1.1	L	0.005	6
Sysco Food Service, 20701 Currier Road (Walnut)	Apr 95	2.3	L	0.012	13
Tung Hsin Trading, 20420 E. Business Pkwy (Walnut)	Apr 95	0.8	L	0.003	4
Amergence Tech. Inc., 20480 E. Bus. Pkwy (Walnut)	Apr 95	0.9	L	0.003	3
Dura Freight Lines, 515-525 S. Lemon (Walnut)	Apr 95	0.5	L	0.001	1
S/W-S/E Corner Lemon/Bus. Parkway (Walnut)	Apr 95	0.2	L	0.004	4
Dura Freight Lines , 20275 Bus. Parkway (Walnut)	Apr 95	1.3	L	0.003	3
Coaster Co. of America, 20300 Bus. Parkway (Walnut)	Apr 95	0.7	L	0.003	3
Dura Freight Lines, 20405 Bus. Parkway (Walnut)	Apr 95	1	L	0.003	3
Dura Freight Lines, 20595 E. Business Pkwy (Walnut)	Apr 95	0.8	L	0.001	2
Dura Freight Lines, 20445 E. Business Pkwy (Walnut)	Apr 95	0.7	L	0.001	2
Orange Grove School (Whittier)	Apr 95	6.6	AF,L	0.004	5
South Middle School (Downey)	May 95	15.8	AF,L	0.007	8
Nuffer Elementary School (Norwalk)	Jun 95	10.4	AF,L	0.007	8
Lampton Middle School (Norwalk)	Jun 95	9.5	AF,L	0.009	10
THUMS (Long Beach)	Jun 95	8	I	1.035	1,160
820 Fairway Drive medians (Industry)	Jun 95	0.1	L	0.002	2
Spencer N Enterprises, Inc., 435 S. Lemon (Walnut)	Jun 95	0.5	L	0.001	1
General Electric, 19805 E Business Pkwy (Walnut)	Jun 95	1.1	L	0.005	6
Menlo Logistics, 20002 E. Business Pkwy (Walnut)	Jun 95	4	L	0.006	7
General Electric, 20005 E. Business Parkway (Walnut)	Jun 95	6.7	L	0.010	11
Hargitt Middle School (Norwalk)	Jul 95	9.5	AF,L	0.025	28
Norwalk Adult School (Norwalk)	Jul 95	17.2	AF,L	0.026	29
John Glenn High School (Norwalk)	Jul 95	38.8	AF,L	0.039	44
Ramona Elementary School (Norwalk)	Jul 95	6.8	AF,L	0.004	4
New River Elementary School (Norwalk)	Jul 95	10.3	AF,L	0.008	9
Morrison Elementary School (Norwalk)	Sep 95	7.7	AF,L	0.003	4
Katherine Edwards Middle School (Whittier)	Sep 95	19	AF,L	0.022	24
Longfellow Elementary School (Whittier)	Sep 95	4.5	AF,L	0.004	5
Walter Dexter Middle School (Whittier)	Sep 95	15.5	AF,L	0.007	8
D.D. Johnston Elementary School (Norwalk)	Sep 95	8.9	AF,L	0.006	7
Corvallis Middle School (Norwalk)	Sep 95	16.9	AF,L	0.030	34
Norwalk High School (Norwalk)	Sep 95	35.1	AF,L	0.033	37
Heritage Park (Santa Fe Springs)	Oct 95	9.2	L	0.009	10
Belloso Farm Nursery (Paramount)	Oct 95	2.5	O	0.002	2
Robertson's Ready-Mix (Paramount)	Nov 95	--	I	0.007	8
Cerritos Nursery (Cerritos)	Dec 95	3	O	0.006	7
Spadra Gas-to-Energy Plant	Dec 95	--	I	0.049	55
Founders Memorial Park (Whittier) (13)	Jan 96	4	L	0.008	9
Los Nietos Park (Santa Fe Springs)	Jan 96	11.2	L	0.014	15
Bell Gardens Soccer Field (Bell Gardens)	Feb 96	2.6	AF	0.004	5
Jersey Ave. School/city athl. fields (S.F. Springs)	Mar 96	8	AF	0.004	5
Salt Lake Municipal Park (Huntington Park) (14)	Apr 96	20.9	L	0.040	45
Sorenson Park (Whittier) (15)	May 96	10.7	L	0.016	18
Sorenson Library (Whittier) (16)	May 96	0.4	L	0	0
Encore Maintenance-Warmington Homes (Cerritos)	May 96	1.1	L	0.002	3
Bellflower Blvd. medians (Bellflower)	Jul 96	0.3	L	0.002	3
Alta Produce (Paramount)	Aug 96	4	AG	0.003	2
Artesia Off Ramp - 91 Freeway (Cerritos)	Aug 96	3.3	L	0.005	6
Ping Ting Hsu, 20701 Currier Road (Walnut)	Aug 96	0.1	L	0.001	1
Belloso Farm Nursery (South Gate)	Sep 96	2.5	O	0.001	1
Temple Park (Downey)	Oct 96	1	L	0.001	1

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TABLE 7
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
(PAGE 7 OF 12)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Woodruff Avenue medians (Bellflower)	Oct 96	0.8	L	0.005	5
Lawrence Allen & Assoc., 20822 Currier Rd. (Walnut)	Oct 96	0.1	L	0.0001	0.1
Fairway Business Cntr., 19700 Bus. Parkway (Walnut)	Nov 96	0.4	L	0.002	2
Joe Rodgers Park (Long Beach)	Nov 96	4.5	L	0.007	7
Ham Park (Lynwood)	Dec 96	10	L	0	0
Jauregui Nursery (Paramount)	Dec 96	2	O	0.005	6
Heritage Corporate Center (Santa Fe Springs)	Jan 97	29.9	L	0.027	30
Belloso Farm Nursery (Bellflower)	Jan 97	8	O	0	0
Foster Road medians (Norwalk)	Jan 97	0.3	L	0.002	2
Rowland Heights Christian Church (Rowland Heights)	Feb 97	0.5	L	0.001	1
Rosecrans Avenue medians (Paramount)	Mar 97	0.2	L	0.008	9
Texaco/Somerset medians (Paramount)	Mar 97	0.2	L	0.001	1
McLane Mowers (Paramount)	Mar 97	0.6	L	0	0
ABC Nursery (Paramount)	Mar 97	16	O	0	0
L.A. Co. Vector Control Bldg. (S.F. Springs)	Mar 97	3.8	L	0.003	4
Greenstone Warehouse (Santa Fe Springs)	Apr 97	0.4	L	0.002	2
Viewsonic, 510 Cheryl/455 Brea Canyon (Walnut)	Jul 97	1.8	L	0.011	12
Jauregui Nursery (Long Beach)	Jul 97	5	O	0.029	33
McNab Avenue medians (Bellflower)	Jul 97	0.1	L	0.0004	0.5
Foster Road/Premier Ave. medians (Downey)	Aug 97	0.1	L	0.001	1
Palm Growers Nursery (Downey)	Oct 97	7.3	O	0	0
Alondra Blvd medians @ SGR (Bellflower)	Oct 97	0.1	L	0.0002	0.2
Puente Hills Landfill irrigation (Industry)	Nov 97	320	L	0.764	856
Puente Hills Landfill dust control (Industry)	Nov 97	130	I	0.133	149
Puente Hills Gas-to-Energy Facility (Industry)	Nov 97	--	I	0.607	680
Midway International (Cerritos)	Feb 98	0.3	L	0.001	1
Countryside Suites (Diamond Bar)	Mar 98	1.4	L	0.003	3
Lugo Park (Cudahy)	Apr 98	7	L	0.005	5
Rose Hills Memorial Park – upper area (Whittier)	Jun 98	298	L	0.373	418
El Dorado Lakes Condominiums (Long Beach)	Aug 98	11	L	0.025	28
Bloomfield Associates, 17871 Park Plaza Dr. (Cerritos)	Sep 98	0.5	L	0.001	1
Maruichi American building (Santa Fe Springs)	Oct 98	0.4	L	0.001	1
Diamond Crest Homeowners Assn. (Diamond Bar)	Oct 98	14	L	0.018	20
Norm Ashley Park (Walnut)	Nov 98	0.2	L	0.0005	1
Play Hut, 368 Cheryl Lane (Walnut)	Nov 98	0.8	L	0.003	3
Waterfall Estates (Rowland Heights)	Dec 98	1.2	L	0.004	5
WalMart (Long Beach)	Dec 98	3	L	0.014	16
Norwalk Golf Course (Norwalk)	Jan 99	8	L	0.022	25
Vestar Development (Long Beach)	Feb 99	8	L	0.035	39
Soco-Lynch Corp. building (Santa Fe Springs)	Feb 99	1	L	0.002	3
183rd Street On Ramp - 91 Freeway (Cerritos)	Feb 99	0.6	L	0.001	1
MC&C building (Santa Fe Springs)	Mar 99	0.7	L	0.007	7
Lakewood Blvd. medians (Paramount)	Mar 99	0.2	L	0.002	2
Progress Park (Paramount)	Mar 99	6.2	L	0.012	14
Garfield Avenue medians (Paramount)	Apr 99	0.1	L	0.001	1
Calvary Chapel (Diamond Bar)	Apr 99	1	L	0.014	16
B&B Pallet Co. (South Gate)	May 99	--	I	0	0
Hi-Tek Warehouse, 20851 Currier Road (Walnut)	Jun 99	0.2	L	0.001	1
Garcia's Nursery (Bellflower)	Jun 99	6	O	0	0
Campus Group Inc, 319 Cheryl Road (Walnut)	Jul 99	0.1	L	0	0
Wind River Homeowners Assn. (Rowland Heights)	Jul 99	12.6	L	0.031	35
AT&T building, 12900 Park Plaza Drive (Cerritos)	Aug 99	0.9	L	0.010	11
Orange Avenue medians (Paramount)	Aug 99	0.1	L	0.003	3
Metropolitan State Hospital (Norwalk)	Sep 99	80	L	0	0

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TABLE 7
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
(PAGE 8 OF 12)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Moffit School (Norwalk)	Sep 99	1.6	AF,L	0.005	5
L.A. Fitness Inter., 20801 Golden Springs (Industry)	Sep 99	1.2	L	0.001	2
Comtop Enterprises, 268 Benton Court (Industry)	Sep 99	0.3	L	0.001	1
Gemini Foods Corp., 251 Benton Court (Industry)	Sep 99	0.6	L	0.001	1
Tri-Net Technology, 21709 Ferraro Parkway (Industry)	Sep 99	0.3	L	0.001	1
Hupa International, 21717 Ferraro Parkway (Industry)	Oct 99	0.3	L	0.0003	0.3
Nu-Health Products, 20875-85-95 Currier (Walnut)	Oct 99	0.1	L	0	0
Rio Hondo Channel (Downey)	Nov 99	0.8	L	0.001	1
Simms Park (Bellflower)	Dec 99	12.5	L	0.014	15
Lemon Avenue medians (Industry)	Dec 99	0.1	L	0.0003	0.4
Prudential Insurance Co., 21558 Ferraro. (Walnut)	Jan 00	3.5	L	0.008	9
Foster Road Greenbelt (Norwalk)	Mar 00	3.3	L	0.003	3
McDonald's Restaurant (Diamond Bar)	Mar 00	0.1	L	0.001	1
San Luis Street @ flood channel (Paramount)	Apr 00	3	L	0.005	1
J&L Footwear, 250 Benton Court (Industry)	Jul 00	0.6	L	0.001	1
Jefferson School (Paramount)	Jul 00	0.5	AF,L	0.003	3
Columbus High School (Downey)	Aug 00	25	AF,L	0.015	17
Triangle Park (South Gate)	Nov 00	0.4	L	0.002	2
Markwins Inter. Corp., 22067 Ferraro (Industry)	Nov 00	1.9	L	0.004	4
Lee Wang LLC, 21901 Ferraro Parkway (Industry)	Nov 00	2	L	0.005	6
Sun Yin USA, 280 Maclin Court (Industry)	Nov 00	0.8	L	0.001	2
SL Investment Group LLC, 218 Maclin Ct. (Industry)	Nov 00	1.5	L	0.002	2
Morrow Meadows, 231 Benton Court (Industry)	Apr 01	0.9	L	0.002	2
Golden Springs Business Park (Santa Fe Springs)	Apr 01	31.4	L	0.113	126
The Cross Schools of Education (Walnut)	May 01	0.6	AF,L	0.001	1
Bellflower Storage (Bellflower)	Jun 01	3	L	0.002	2
Railroad Beautification (Paramount)	Jul 01	0.5	L	0	0
Rio Hondo Channel (Bell Gardens)	Jul 01	0.3	L	0.003	3
Bank of the West (Rowland Heights)	Sep 01	0.1	L	0.0004	0.4
Gym/Teen Center (Walnut)	Sep 01	0.6	L	0.001	2
CDM building (Santa Fe Springs)	Oct 01	0.1	L	0.002	2
Laskey-Weil building, 13101 Moore Street (Cerritos)	Oct 01	0.4	L	0.002	2
Willow Street medians (Long Beach)	Dec 01	2.4	L	0.003	3
Yellow Box Corp., 19835 Walnut Drive (Walnut)	Dec 01	0.3	L	0.002	2
Harvard Estates (Rowland Heights)	Dec 01	2	L	0.002	3
L.A. Co. Recorder's Office (Norwalk)	Jan 02	2.7	L	0.014	15
Tays Cool Fuel (Paramount)	Feb 02	0.2	L	0.003	3
Walnut Nazarene Church (Walnut)	Feb 02	0.8	L	0.0003	0.3
Antelope Valley Farms (Palmdale)	Mar 02	2,100	AG	7.038	7,887
L.A. River landscaping (South Gate)	Mar 02	2.5	L	0.001	1
Majestic Mgmt., 168-188 Brea Canyon Rd. (Walnut)	Apr 02	0.6	L	0.002	2
Synnex, 108-118 Brea Canyon Rd. (Walnut)	Apr 02	0.7	L	0.002	3
Majestic Management, 108-288 Mayo Drive (Walnut)	Apr 02	0.1	L	0.005	5
Holiday Inn Express (Walnut)	May 02	0.4	L	0.002	2
Lemon Avenue Investments (Walnut)	Jun 02	0.6	L	0.002	3
Magnolia at Snow Creek (Walnut)	Jul 02	5.4	L	0.018	21
Lakewood-Adoree medians to 105 Fwy. (Downey)	Jul 02	3.4	L	0.031	35
River Ridge Golf Course (Pico Rivera)	Jul 02	21.3	L	0.021	24
Long Beach Water Dept. Impoundment (Long Beach)	Jul 02	--	I	0.001	1
Everbright Management, 1163 Fairway (Industry)	Sep 02	0.6	L	0.003	4
Everbright Management, 1169 Fairway (Industry)	Sep 02	0.2	L	0.001	1
Kelly Paper, 228 Brea Canyon Road (Walnut)	Sep 02	1.2	L	0.0004	0.4
V-Tec Automotive, 19677 Valley Blvd. (Walnut)	Sep 02	0.1	L	0.0001	0.2
Grand and Valley landscaping (Walnut)	Sep 02	0.1	L	0.005	6

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TABLE 7
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
(PAGE 9 OF 12)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Extra Space Storage (Walnut)	Oct 02	0.8	L	0.001	1
Latter Days Saints Church (Walnut)	Oct 02	0.9	L	0.003	3
Nogales and Killian landscaping (Rowland Heights)	Oct 02	0.1	L	0.001	1
A&R West Family LLC, 20855 Golden Sprgs. (D. Bar)	Nov 02	0.2	L	0.001	1
Chancellor Village Senior Housing (Cerritos)	Nov 02	0.9	L	0.002	2
Simon Trucking (Santa Fe Springs)	Nov 02	0.9	L	0.001	1
Foster/Coldbrook medians (Bellflower)	Nov 02	0.1	L	0.0003	0.4
L.A. County Library (Norwalk)	Nov 02	0.9	L	0.005	6
Metro State/Wheelabrator (Norwalk)	Jan 03	B	I	0.248	278
Alamitos Seawater Intrusion Barrier (Long Beach)	Feb 03	--	R	2.116	2,372
Boeing (Long Beach)	Mar 03	52	L	0.013	14
Brea Canyon Rd./Old Ranch Road medians (Industry)	May 03	0.1	L	0.0002	0.2
CLT Computers, Inc., 20153 Paseo del Prado (Walnut)	May 03	0.6	L	0.002	2
Rio Hondo College (Whittier)	Jun 03	85	AF,L	0.023	26
Mill Elementary School (Whittier)	Jun 03	15	AF,L	0.008	9
Del Amo Blvd. Greenbelt (Lakewood)	Jul 03	0.3	L	0.002	3
Imperial Equestrian (South Gate)	Jul 03	1.5	L	0.004	4
Norwalk Walkway/Parking (Santa Fe Springs)	Jul 03	1	L	0.003	4
Tournament Players Club (Santa Clarita)	Aug 03	120	L	0.277	311
The Old Road medians, 26840-27236 (Santa Clarita)	Aug 03	5.8	L	0.020	22
Autosmart Intl., 19885 Harrison Ave. (Industry)	Aug 03	0.2	L	0.001	1
Broadway.com, 19715 Harrison Ave. (Industry)	Aug 03	0.5	L	0.002	2
Bayharbor-Harrison Assn., 19901 Harrison (Industry)	Aug 03	0.8	L	0.003	4
J Pack International, 19789 Harrison Ave. (Industry)	Aug 03	0.5	L	0.001	1
Ziprint Image Corp., 19805 Harrison Ave. (Industry)	Aug 03	0.2	L	0.001	1
San Malone Enterprises, 19865 Harrison (Industry)	Aug 03	0.3	L	0.002	3
Shinetec Group, Inc., 19685 Harrison Ave. (Industry)	Aug 03	0.4	L	0.001	1
Majestic Realty, Grand Ave./Village Staples (Walnut)	Aug 03	1.6	L	0.005	6
Orange Grove Services, Lemon/La Puente (Walnut)	Sep 03	0.4	L	0.003	3
Max Property LLC, 21401 Ferraro Pkwy. (Industry)	Sep 03	0.7	L	0.004	5
NP 21301 Ferraro Pkwy., 21301 Ferraro (Industry)	Sep 03	0.8	L	0.002	2
568 TriNet Court (Walnut)	Oct 03	0.3	L	0.001	1
Steve Horn Way/Bellflower medians (Downey)	Nov 03	0.3	L	0.015	17
Walnut City Hall (Walnut)	Dec 03	0.6	L	0.001	1
Walnut Senior Center (Walnut)	Dec 03	0.5	L	0.001	1
Hill's Pet Nutrition, 318 Brea Canyon Rd. (Walnut)	Dec 03	2.6	L	0.006	7
Young Hoon Cho, 1709 Nogales St. (Rowland Heights)	Mar 04	0.1	L	0.0003	0.4
Shell Station, 21103 Golden Springs Dr. (Diamond Bar)	Mar 04	0.1	L	0.0003	0.4
Ferraro/Grand East ramp (Industry)	Apr 04	3.8	L	0.005	6
Hing Wa Lee Plaza, 1569 Fairway Dr. (Walnut)	May 04	0.1	L	0.001	1
Tucker Elementary School (Long Beach)	May 04	3	AF, L	0.005	6
Southcoast Cabinet, 20625 Lycoming St. (Walnut)	Jun 04	0.3	L	0.001	1
APL Logistics, 408 Brea Canyon Rd. (Walnut)	Jun 04	2.1	L	0.006	7
Alamitos Hill Reservoir landscaping (Long Beach)	Jul 04	8.6	L	0.002	2
Adnoff Family Trust, 20801 Currier Rd. (Walnut)	Jul 04	0.1	L	0.001	1
Sentous Valley LLC, 2889 Valley Blvd. (Walnut)	Aug 04	0.1	L	0.0004	0.4
Pro Growers Nursery (Norwalk)	Sep 04	11.3	O	0.040	45
Kaiser Administration building (Downey)	Oct 04	2.5	L	0.005	6
Downey Studios (Downey)	Oct 04	1	L	0.004	5
Community Day School (Walnut)	Nov 04	0.1	AF,L	0.0004	0.5
Majestic Mgmt., Bldg. 25 on Mayo Dr. (Walnut)	Jan 05	0.1	L	0.0003	0.3
Gateway Pointe (Whittier)	Jan 05	8	L	0.016	18
Puente Hills Materials Recovery Facility (Industry)	Feb 05	2.4	L	0.005	5
Sy Develop. condos, 20118-20138 Colima, (Walnut)	Jun 05	0.1	L	0.00001	0.01

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TABLE 7
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(PAGE 10 OF 12)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Dills Park (Paramount)	Jul 05	12.5	L	0.030	34
N/E corner Cheryl Lane/Baker Parkway (Industry)	Aug 05	3.3	L	0.014	16
Jakk's Pacific, Inc. 21733-21749 Baker (Industry)	Aug 05	1.2	L	0.004	4
20813 Valley Blvd. medians (Walnut)	Sep 05	0.4	L	0.001	1
20265 Valley Blvd. medians (Walnut)	Sep 05	0.4	L	0.001	1
19849 Valley Blvd. medians (Walnut)	Sep 05	0.4	L	0.001	1
Kohl's Center (Walnut)	Sep 05	2	L	0.009	10
Hollydale Elementary (South Gate)	Sep 05	3	AF,L	0.001	1
Malburg Generation Station (Vernon)	Oct 05	B	I	0.597	668
Phoenix Private Schools (Rowland Heights)	Dec 05	0.1	AF,L	0.0002	0.2
The Home Depot, 21535-21651 Baker (Industry)	Jan 06	2.8	L	0.009	10
Industry East Land LLC, 21415 Baker (Industry)	Jan 06	2.3	L	0.006	7
Stuart and Gray medians (Downey)	Dec 05	0.4	L	0.006	7
Woodruff and Maple medians (Bellflower)	Mar 06	0.1	L	0.0001	0.1
Charles Hailong Cui, 350 Cheryl Lane (Walnut)	Apr 06	0.7	L	0.004	5
LA Sanchez Nursery (Industry)	Apr 06	5	O	0.010	12
Sculpture Garden (Santa Fe Springs)	May 06	0.6	L	0	0
Fairway median@ Brea Canyon (Walnut)	Jun 06	0.3	L	0.001	1
Grand Avenue Crossing (Industry)	Jul 06	18.5	L	0.019	21
22002 Valley Blvd. (Industry)	Jul 06	1.6	L	0.003	4
Foster Road medians (Santa Fe Springs)	Jul 06	1	L	0.009	11
Rose Hills Memorial Park – lower area (Whittier)	Aug 06	275	L	0.438	491
Christian Chapel of Walnut Valley (Walnut)	Aug 06	2.2	L	0.006	6
Target Store T-2179, 747 Grand Ave. (Walnut)	Sep 06	3.9	L	0.006	6
Whittier Narrows Recreation Area (South El Monte)	Sep 06	568	L	0.712	798
Leg Avenue, 19601 E. Walnut Dr. (Walnut)	Oct 06	0.5	L	0.003	3
LandRover (Cerritos)	Dec. 06	0.3	L	0.003	3
Harold M. Pitman Co., 21908-21958 Baker (Industry)	Jan 07	0.8	L	0.002	2
Eastern Agricultural Site (Lancaster)	Feb 07	696	AG	0.845	947
Williams-Sonoma, 21508-21662 Baker (Industry)	Apr 07	4.8	L	0.012	14
FedEx Ground, 200 Old Ranch Road (Walnut)	May 07	28	L	0.012	13
Currier Road Devel. Inc., 20819 Currier Rd. (Walnut)	May 07	0.3	L	0.001	1
Bluff Park (Long Beach)	Jul 07	25.8	L	0.016	17
Stearns Park (Long Beach)	Jul 07	21	L	0.021	24
Bixby Park (Long Beach)	Jul 07	12.5	L	0.013	14
South El Monte High School (South El Monte)	Aug 07	16.1	AF, L	0.062	69
Williams-Sonoma, 21700 Baker (Industry)	Aug 07	2	L	0.006	6
Douglas Park development (Long Beach)	Nov 07	2.1	L	0.062	70
21350 Valley Blvd. (Industry)	Feb 08	0.4	L	0.001	1
Grand Avenue Venture, 21508 Ferraro Pkwy (Walnut)	Apr 08	3.5	L	0.003	4
Space Learning Center (Downey)	Apr 08	10.5	L	0.024	27
Surgical Center, Carmenita & 166th (Cerritos)	May 08	0.1	L	0.0003	0.4
UPS Parking Structure, 13150 Moore (Cerritos)	May 08	0.5	L	0.001	1
Grand Avenue/Baker Parkway medians (Industry)	May 08	6.7	L	0.013	14
Majestic Management, 21530-21590 Baker (Industry)	May 08	2	L	0.008	9
Cornerstone Commerce Center (Downey)	Jun 08	0.8	L	0.006	7
Gomez Upholstery, 19935 Valley Blvd. (Walnut)	Jul 08	2	L	0	0
Susann Sutseng Lee, 1335-1337 Otterbein (Rowland)	Jul 08	0.1	L	0.0004	0.4
Golden Springs Plaza (20657 Golden Sprgs (Dia. Bar)	Aug 08	0.4	L	0.002	2
Chili's Restaurant, Golden Springs Dr. (Diamond Bar)	Sep 08	0.01	L	0.001	1
Majestic Management, 21808 Garcia Ln. (Industry)	Sep 08	0.5	L	0.001	2
Majestic Management, 21858 Garcia Ln. (Industry)	Sep 08	0.4	L	0.001	2
Majestic Management, 21912 Garcia Ln. (Industry)	Sep 08	0.3	L	0.001	1
Majestic Management, 21760-21788 Garcia (Industry)	Sep 08	0.4	L	0.001	2

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

TABLE 7
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
(PAGE 11 OF 12)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
CFT Development, Golden Springs Dr. (Diamond Bar)	Oct 08	0.01	L	0.001	1
Mora Drive medians (Santa Fe Springs)	Oct 08		L	0.004	5
Jenny Hsieh, 20125 Valley Blvd. (Walnut)	Nov 08	0.03	L	0.00003	0.03
UPS Main Building, 13233 Moore (Cerritos)	Nov 08	4.4	L	0.012	13
Fountain Walk Senior, 18310 Carmenita (Cerritos)	Nov 08	0.1	L	0.0004	0.4
Public Works Dept. sewer flushing (Lancaster)	Jan 09	--	I	0.001	1
Public Works Dept. street sweeping (Lancaster)	Feb 09	--	I	0.0004	0.4
ASCIP Building, 16550 Bloomfield (Cerritos)	Feb 09	0.1	L	0.0004	1
Tincher Elementary School (Long Beach)	Feb 09	1.5	AF, L	0.004	5
Firestone Blvd. medians (Downey)	Feb 09	0.1	L	0.0004	0.4
Citibank, 8764 Firestone Blvd. (Downey)	Feb 09	0.1	L	0.001	1
Brea Canyon Rd./Currier Road median (Walnut)	Feb 09	2	L	0.005	5
Cardinal Capital Partners, Currier/Lemon (Walnut)	Mar 09	2.5	L	0	0
Family Property Holdings, 20888 Amar Rd. (Walnut)	May 09	0.04	L	0.0004	0.5
KW Global Inc., 293 Brea Canyon Drive (Walnut)	May 09	0.3	L	0.001	2
Steve Horn Pkwy. medians @ Kaiser (Downey)	May 09	1.4	L	0.023	26
Walgreens/Big Lots, 9018 Firestone (Downey)	May 09	0.4	L	0.003	4
Lancaster University Center (Lancaster)	May 09	2	L	0	0
12800 Center Court (Cerritos)	Jul 09	0.4	L	0.002	2
Pacific Alloy Casting (South Gate)	Jul 09	--	I	0.016	18
Sunshine Park (L.A. County)	Jul 09 (May 86)	4	L	0.002	3
Rowland Elementary School (Rowland Heights)	Jul 09 (May 86)	3	AF,L	0.002	2
Farjardo School (Rowland Heights)	Jul 09 (May 86)	4	AF,L	0.0005	1
Farjardo Park (Rowland Heights)	Jul 09 (May 86)	4	L	0.001	2
Nogales High School (L.A. County)	Jul 09 (Jun 86)	11	AF,L	0.005	6
Queen of Heaven Cemetery (Rowland Hts.)	Jul 09 (Jun 86)	35	L	0.003	3
Schabarum Regional County Park (L.A. County)	Jul 09 (Sep 86)	233	L	0.020	22
Pepperbrook Park (Hacienda Heights)	Jul 09	4.4	L	0.002	2
Countrywood Park (Hacienda Heights)	Jul 09	5.4	L	0.002	2
Rowland Heights Golf Center (Rowland Heights)	Jul 09	8	L	0.002	3
Medians at 755 Nogales (Industry)	Jul 09	0.1	L	0.0001	0.1
Medians at 4115-1/2 Nogales (West Covina)	Jul 09	0.1	L	0.001	2
Medians at 2654-1/2 Valley (West Covina)	Jul 09	0.2	L	0.00003	0.03
Bu Sha Temple, 4111 Nogales (West Covina)	Jul 09	0.5	L	0.0001	0.1
Megan Racing, 788 Phillips (Industry)	Jul 09	0.1	L	0.0004	0.4
JJ Plaza, 18253 Colima (Rowland Heights)	Jul 09	0.1	L	0.0001	0.1
New World RTCI-LP, 18958 Daisetta (Rowland Hts.)	Jul 09	0.1	L	0.00001	0.02
Battery Technology, 16651 Johnson (Industry)	Jul 09	0.1	L	0.0001	0.1
FTH Group Inc., 16685 Johnson (Industry)	Jul 09	0.1	L	0.0001	0.1
Ancillary Provider 16664 Johnson (Industry)	Jul 09	0.1	L	0.0001	0.1
Ancillary Provider 16666 Johnson (Industry)	Jul 09	0.2	L	0.0002	0.3
Pan American, 16610 Gale Ave. (Industry)	Jul 09	0.2	L	0.0002	0.2
Blue Pacific, 1354 Marion Ct. (Industry)	Jul 09	0.2	L	0.0003	0.3
Romano's Macaroni Grill, 17603 Colima (Rowland)	Jul 09	0.1	L	0.001	1
Acosta Growers, 16412 Wedgeworth Dr. (Industry)	Jul 09	5	O	0.001	1
Wedgeworth Elementary School (Hacienda Heights)	Aug 09	2.5	AF,L	0.001	1
Wilson High School (Hacienda Heights)	Aug 09	18.3	AF,L	0.006	7
Light of America, Inc. (20722 Currier Rd.) (Walnut)	Sep 09	0.1	L	0.0003	0.3
Ybarra Elementary School (Rowland Heights)	Sep 09	5.6	AF,L	0.008	9
Bixby Elementary School (Hacienda Heights)	Sep 09	6.1	AF,L	0.002	2
Jade Fashion, 1350 Bixby (Industry)	Sep 09	0.1	L	0.0002	0.3
Gutierrez Nursery, 16411 Wedgeworth (Industry)	Sep 09	4	O	0.001	1
Robertson's Ready-Mix	Oct 09	--	I	0.006	7
MTA Bike Trail (Bellflower)	Nov 09	0.1	L	0.001	1

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

TABLE 7
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
(PAGE 12 OF 12)

Whittier Narrows Golf Course (South El Monte)	Dec 09	260	L	0.504	565
Frank Raper, 1215 Bixby (Industry)	Dec 09	0.1	L	0.0001	0.2
Laido International, 16710-12 Johnson (Industry)	Dec 09	0.1	L	0.0002	0.2
Bolt Products, 16725 Johnson Dr. (Industry)	Dec 09	0.1	L	0.0001	0.1
Ily Enterprise, 783 Phillips (Industry)	Jan 10	0.1	L	0.0003	0.3
Superior Profiles, 1325 Bixby (Industry)	Jan 10	0.2	L	0.0002	0.2
60 Fwy., Countrywood & Fullerton (Industry)	Jan 10	5	L	0.003	3
Camacho Strawberries (Industry)	Jan 10	3	O	0.0001	0.1
Advanced Media, 881 Azusa (Industry)	Jan 10	0.1	L	0.001	1
East Group Prop., 855 Anaheim-Puente (Industry)	Mar 10	0.6	L	0.0003	0.4
So.Cal. Air Condition, 16950 Chestnut (Industry)	Mar 10	2	L	0.0003	0.3
USACD, 17101 Chestnut (Industry)	Mar 10	0.3	L	0.0003	0.3
Azusa Blvd Medians (Industry)	Mar 10	0.2	L	0.0001	0.1
Acosta Growers, 17101 Chestnut (Industry)	Mar 10	2.4	O	0.0002	0.2
Paramount Blvd. Medians (Paramount)	Mar 10		L	0.004	4
L.A. Co. ISD bldg., 16610 Chestnut (Industry)	Apr 10	0.5	L	0.0003	0.3
Azusa Property Co., 885 Azusa (Industry)	Apr 10	0.2	L	0.0002	0.2
Golden West Footwear, 16750 Chestnut (Industry)	Apr 10	0.3	L	0.0002	0.2
Teledyne Instruments, 16830 Chestnut (Industry)	Apr 10	0.4	L	0.0004	0.4
Medians, 18927 Daisetta (Rowland Heights)	Apr 10	0.2	L	0.0001	0.1
Colima Medians (L.A. County)	Apr 10	0.1	L	0.0002	0.2
Medians, 1442 Fullerton (Industry)	Apr 10	0.3	L	0.00004	0.05
Teledyne Picco, 16800 Chestnut (Industry)	May 10	0.4	L	0.0003	0.3
Hou Yi Mao Nursery, 18002 Colima (Rowland Hts.)	May 10	1.3	O	0.0002	0.3
East Group Prop., 16700 Chestnut (Industry)	Jun 10	0.6	L	0.001	1
Pro Motion Distribution, 883 Azusa (Industry)	Jun 10	0.1	L	0.0001	0.1
New Age Kaleidoscope, 7 Colima (Industry)	Jun 10	0.6	L	0.001	1
Min Maw Intl. Inc., 18350 San Jose (Industry)	Jun 10	0.7	L	0.001	1
Hot Topic, 18350 San Jose Ave. (Industry)	Jul 10	0.6	L	0.001	1
FedEx, 18305 San Jose Ave. (Industry)	Jul 10	0.6	L	0.001	1
Long Beach DPW sewer flushing (Long Beach)	Aug 10	--	I	0.001	1
Long Beach DPW street sweeping (Long Beach)	Aug 10	--	I	0.0003	0.3
Los Amigos Golf Course (L.A. County)	Aug 10	110	L	0.004	4
Public Works Dept. dust control (Lancaster)	Sep 10	--	I	0.00001	0.01
Donald Miller, 19803 Valley (Walnut)	Sep 10	0.1	L	0.0001	0.3
Hudd Distribution, 18215 Rowland St. (Industry)	Sep 10	0.6	L	0.0003	0.4
New Age Kaleidoscope, 5 Stoner Creek (Industry)	Oct 10	1.4	L	0.0003	0.4
Perrin Manufacturing, 1020 Bixby (Industry)	Oct 10	0.1	L	0.0001	0.2
Centro Watt Operating, 17518A Colima (Industry)	Oct 10	0.4	L	0.00003	0.03
Centro Watt Operating, 17414 Colima (Industry)	Oct 10	0.5	L	0.0001	0.1
717 Nogales LLC, 717 Nogales (Industry)	Oct 10	0.5	L	0.0001	0.1
The Old Road/Magic Mtn. Pkwy medians (Snt. Clarita)	Nov 10	2.8	L	0.003	4
Walgreens, 18308 Colima (Industry)	Dec 10	0.1	L	0.0001	0.1
RWD Office, 3021 S. Fullerton (Industry)	Dec 10	0.3	L	0.0001	0.1
Bell Memorial Church, 1747 Nogales (Rowland Hts.)	Dec 10	0.3	L	0.0002	0.3
Atlantic Ave. medians (South Gate)	Mar 11	16.3	L	0.107	120
Pathfinder Park (Rowland Heights) (Industry)	May 11	29	L	0.00001	0.01
USGVMWD site, 401 Nogales St. (Industry)	May 11	0.5	L	0.0000003	0.0003
East Group Prop., 18551 Arenth Ave. (Industry)	May 11	0.7	L	0.000003	0.003
717 Nogales LLC, 18961 Arenth Ave. (Industry)	May 11	0.5	L	0.000003	0.003
Kimco Realty, 17100 Colima Rd. (Industry)	May 11	3	L	0.000003	0.003
Acme Trading Group, 18501 Arenth (Industry)	May 11	0.9	L	0.00001	0.01
Third Party Enterprises, 18501 Arenth (Industry)	May 11	0.6	L	0.000001	0.001
Floria International 18701 Arenth (Industry)	May 11	0.4	L	0.000003	0.003

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

2. LOS ANGELES BASIN

The treatment plants operated by the Sanitation Districts in the Los Angeles Basin area are the Joint Water Pollution Control Plant (JWPCP) with ocean disposal, and six water reclamation plants (WRPs): La Cañada, Long Beach, Los Coyotes, Pomona, San Jose Creek, and Whittier Narrows. These facilities and the associated trunk sewers comprise the Joint Outfall System (JOS) and together produced 402.46 MGD (450,980 AFY) of effluent in FY 10-11, a decrease of 0.6% from the preceding fiscal year. This decrease was due to the on-going effects of water conservation in response to the 2006-2009 drought and to the lingering effects of the recent nationwide economic recession. This level of flow is equal to that first seen in 1971 and again during the 1976-77 drought. Of the total amount of effluent produced, 123.95 MGD (138,891 AFY), or 30.8 %, was recycled water available for reuse, a slight decrease of 0.1% in total flow from the preceding fiscal year. During FY 10-11, 56.97 MGD (63,842 AFY) was actively reused, a 15.3% decrease from the preceding fiscal year, due mainly to above average rainfall during that year that reduced the use of recycled water for groundwater replenishment. This quantity was 46.0% of the recycled water available and 14.2% of the total effluent produced in the JOS (both percentages decreasing somewhat from the preceding year).

2.1 LA CAÑADA WRP

LA CAÑADA WRP FACTS	
Plant capacity:	0.2 MGD
Water produced and reused:	0.095 MGD 106 AFY 0.9% FY decrease
FY10-11 O&M:	$2,805/AF
No. of reuse sites:	1 105 acres

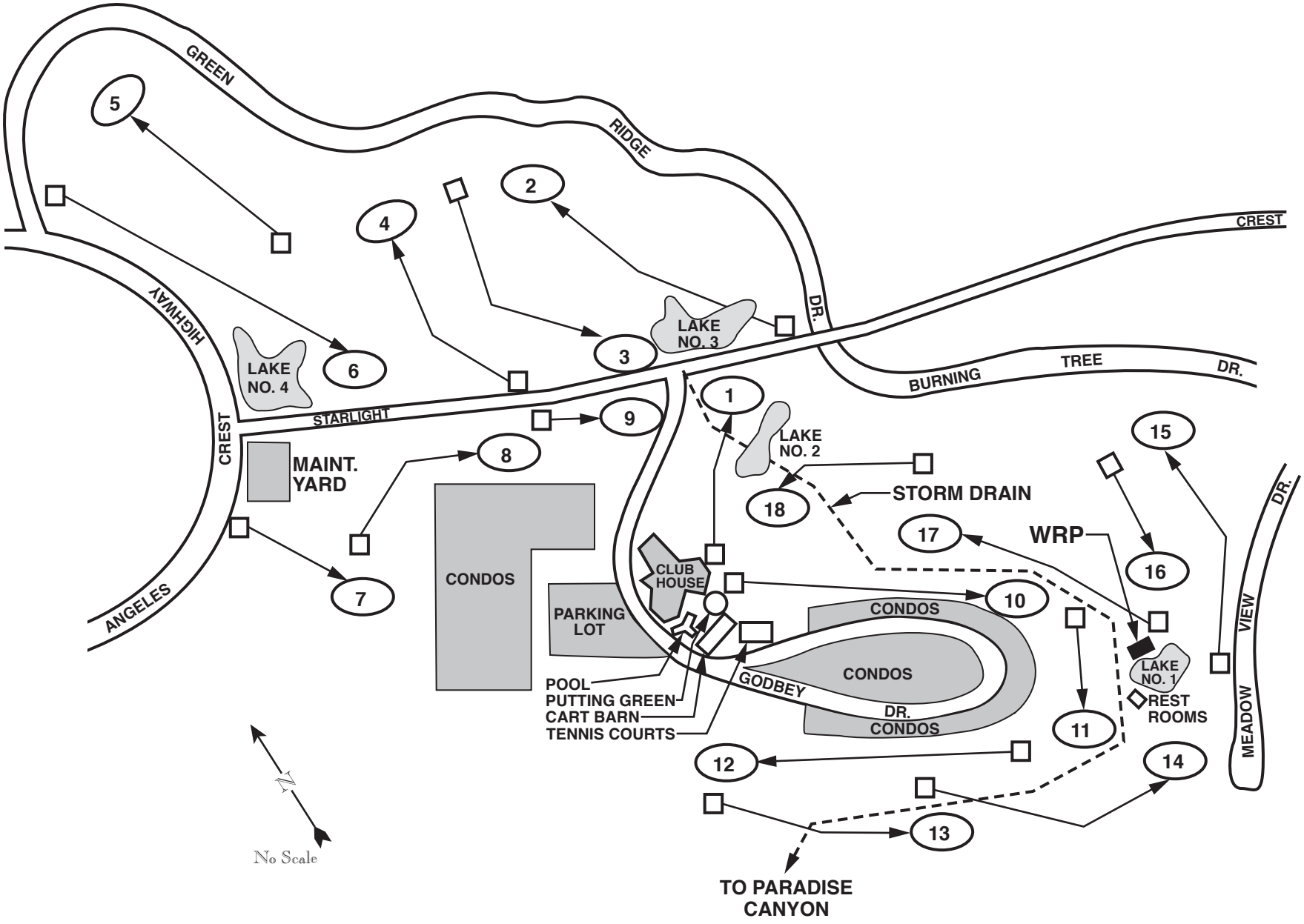
This treatment facility, completed in 1962 and expanded in 1971, is the smallest one operated by the Sanitation Districts and is located on the site of the La Cañada-Flintridge Country Club (Figure 6), at 533 Meadowview Drive, La Cañada, CA 91011. In February 1996, an outfall trunk sewer (for waste activated sludge disposal and excess storm flows) was completed that connected this plant with the main sewer system in the Los Angeles Basin, officially making this plant a JOS facility. The plant, which produces disinfected secondary (activated sludge) effluent, has a capacity of 0.2 MGD; however, it only treated an average of 0.095 MGD (106 AFY) of wastewater generated by the 425 homes surrounding the country club in FY 10-11 (0.02% of the effluent produced in the JOS). This flow rate represents a 0.9% decrease in average daily flows over the preceding fiscal year. The operation and maintenance (O&M) cost in FY 10-11 to produce this water was approximately $2,805/AF.

Use of recycled water from this facility is permitted under California Regional Water Quality Control Board, Los Angeles Region (LARWQCB) Order No. 00-099. All of the disinfected secondary effluent from the plant is conveyed to four lakes on the 105-acre golf course. Lake water (augmented by potable water during the summer) is used for landscape irrigation of the golf course. The developers of the country club and neighboring homes financed the construction of the treatment plant, which was later sold to the Sanitation Districts for $77,268, and the homeowners in District No. 28 finance the plant O&M costs. The operators of the country club are required to use all of the recycled water produced at this facility for irrigation.

2.2 LONG BEACH WRP

This treatment facility, located at 7400 East Willow Street, Long Beach, CA 90815, was completed in 1973 and was expanded in 1984 to its current design capacity of 25 MGD. However, it produced only 18.79 MGD (21,052 AFY) of coagulated, filtered, disinfected tertiary recycled water in FY 10-11 (4.7% of the effluent

FIGURE 6
LA CANADA-FLINTRIDGE COUNTRY CLUB



LONG BEACH WRP FACTS	
Plant capacity:	25 MGD
Water produced:	18.79 MGD 21,052 AFY 2.7% FY increase
FY10-11 O&M:	$254/AF
Water reused:	5.736 MGD 6,428 AFY 1.9% FY decrease 30.5% of production
Delivery systems:	2 176,630 ft. of pipe
No. of reuse sites:	58 1,928.3 acres

produced in the JOS), which was a 2.7% increase over the preceding fiscal year, at an O&M cost of approximately $254/AF. The increase in recycled water production was the result of completed upgrades to the secondary treatment process facilities.

Recycled water quality for FY 10-11 is presented in Table B-1 of Appendix B. An average of 5.736 MGD (6,428 AFY), or 30.5% of the recycled water produced at this plant was delivered for reuse during FY 10-11. This represents a 1.9% decrease from the preceding fiscal year. Use of recycled water from this facility during this fiscal year was permitted under LARWQCB Order Nos. 87-47 and 97-072 (for direct, non-potable reuse), R4-2009-0049 (for non-irrigation uses), and R4-2005-0061 (for seawater intrusion barrier injection).

2.2.1 Long Beach Water Department

Beginning in 1980, the City of Long Beach Water Department (LBWD) embarked on a multi-phase program to distribute recycled water throughout the city, mainly for landscape irrigation (Figure 7). (Note: All recycled water produced at this plant goes to LBWD in exchange for the land on which the Sanitation Districts built the Long Beach WRP.) Recycled water service for use in repressurization of the oil-bearing strata, initially constructed in 1971, was restored to the THUMS project on Island White in June 1995. A narrative description of the layout of LBWD's recycled water distribution system is contained in Appendix C. Table 8 lists the users of the LBWD system as of the end of FY 10-11.

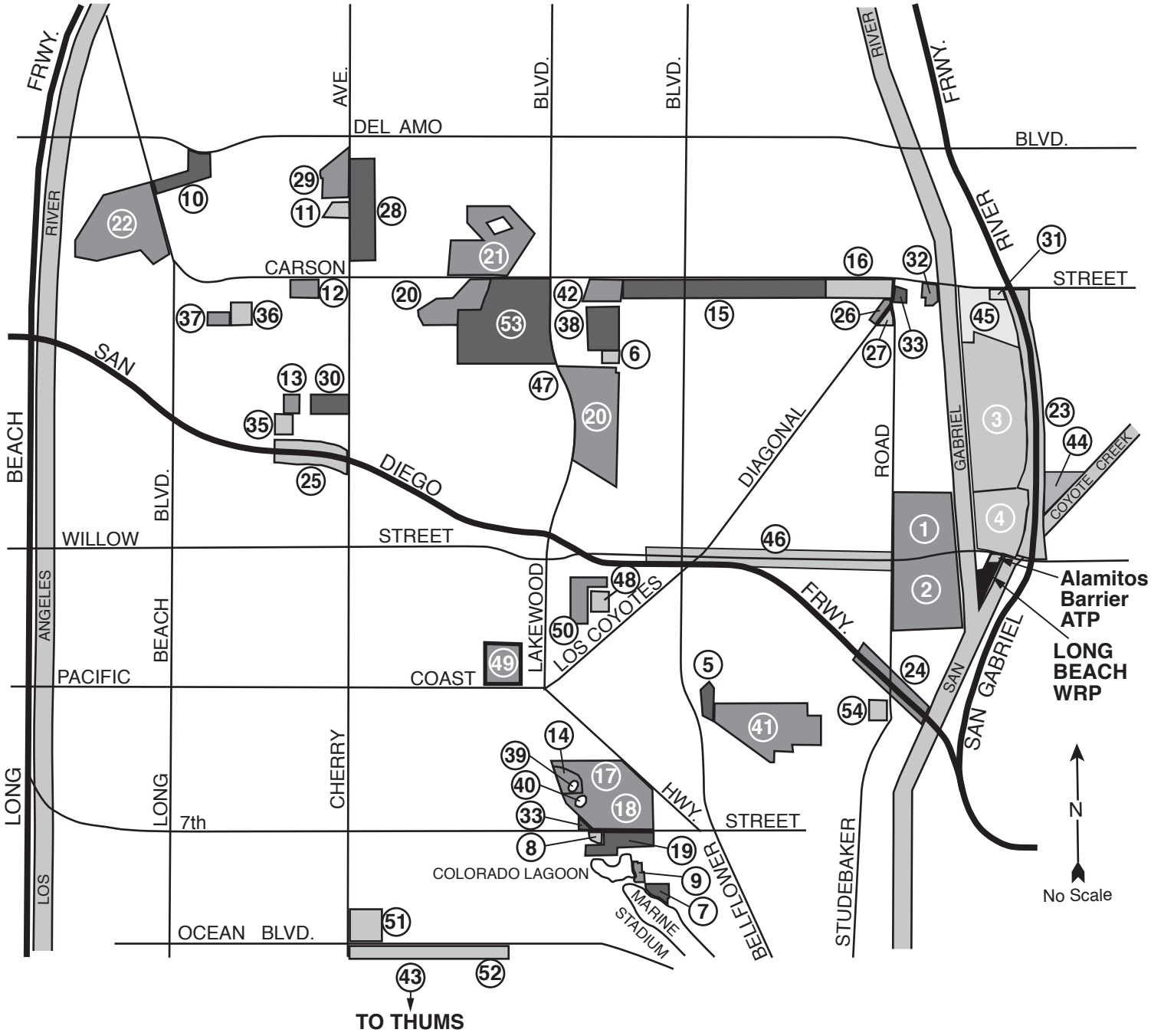
During FY 10-11, LBWD served 3.620 MGD (4,056 AFY), or 19.2% of the recycled water produced at this plant, through approximately 176,630 feet of pipeline (6- to 24-inches in diameter) to 57 direct, non-potable reuse sites encompassing 1,928 acres (additional recycled water was delivered by LBWD to the Alamitos Seawater Intrusion Barrier project, see Section 2.2.2, below). This was a 5.1% decrease from the preceding fiscal year. In August 2010, truck hauling of recycled water from LBWD's recycled water distribution system began for street sweeping and sewer flushing as allowed under the non-irrigation use permit.

LBWD sells the recycled water at a rate of $744.00/AF for peak demand (nighttime) usage or $531.43/AF for off-peak demand (daytime) usage, or between 50-70% of the potable water rate of $1,062.43/AF.

2.2.2 Alamitos Seawater Intrusion Barrier

Due to over-drafting of the Central Basin aquifer, which underlies and supplies water to the Metropolitan Los Angeles area, the groundwater level in that basin dropped below sea level by the 1950's. This condition allowed salt water to move inland into the aquifer at various points along the coastline leading to contamination of the groundwater supplies. In response, the Los Angeles County Department of Public Works (LACDPW) constructed engineered, freshwater injection barriers in front of the advancing seawater at three locations in Los Angeles County in an effort to stem the landward movement of seawater. One of these barrier projects, the Alamitos Seawater Intrusion Barrier (Alamitos Barrier) is two miles south of the Long Beach WRP, straddling the San Gabriel River and the Los Angeles/Orange County line and creating a pressure ridge in five aquifers across the Alamitos Gap. Historically, between 4,000 and 7,000 AFY of non-interruptible imported water

FIGURE 7
LONG BEACH WATER DEPARTMENT REUSE SITES



1 El Dorado Park West
2 El Dorado Golf Course
3 El Dorado Park East
4 Nature Center
5 Whaley Park
6 Douglas Park
7 Marina Vista Park
8 Woodlands Park
9 Colorado Lagoon Park
10 Scherer Park
11 Cherry Ave. Park
12 Somerset Park
13 Reservoir Park
14 Joe Rodgers Park
15 Heartwell Park
16 Heartwell Golf Course
17 Recreation Park
18 Recreation Golf Course
19 Recreation 9-Hole Golf Course
20 Skylinks Golf Course
21 Lakewood Golf Course
22 Virginia Country Course
23 Cal Trans - 605 Frwy. @ Warlow, Pioneer, Spring
24 Cal Trans - 405 Frwy. @ Atherton
25 Cal Trans - 405 Frwy.@ Walnut
26 Los Coyotes Diagonal greenbelt
27 Lakewood 1st Presbyterian Church
28 All Souls Cemetery
29 Sunnyside Memorial Park
30 Long Beach Water Dept. Office
31 WalMart
32 Sunrise Growers Nursery
33 DeMille Junior High School
34 Wilson High School
35 Burroughs Elementary School
36 Hughes Middle School
37 Longfellow Elementary School
38 Veteran's Memorial Stadium
39 Recreation Park Bowling Green
40 Blair Field
41 Cal State University, Long Beach
42 Long Beach City College
43 THUMS
44 El Dorado Lakes Condominiums
45 Vestar Development (Towne Centre)
46 Willow Street medians
47 Boeing
48 Tucker Elementary School
49 Alamitos Hill Reservoir
50 Stearns Park
51 Bixby Park
52 Bluff Park
53 Douglas Park Development
54 Tincher Elementary School

TABLE 8
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
LONG BEACH WATER DEPARTMENT
(PAGE 1 OF 2)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
El Dorado Park West	Aug 80	135	L	0.128	144
El Dorado Golf Course	Aug 80	150	L	0.223	249
Recreation Park	Oct 82	26	L	0.042	47
Recreation Golf Course	Oct 82	149	L	0.197	221
Whaley Park	Jun 83	9	L	0.017	19
El Dorado Park East	Jan 84	300	L	0.326	365
Nature Center	Jan 84	60	L	0.058	64
605 Freeway at Wardlow	Feb 84	50	L	0.028	32
Heartwell Park	Feb 84	120	L	0.131	147
Skylinks Golf Course	Apr 84	155	L,P	0.228	255
Douglas Park	Apr 84	3	L	0.003	4
405 Freeway at Atherton	May 84	5	L	0.00001	0.01
DeMille Junior High School	Jun 84	5	AF,L	0.0004	0.4
Heartwell Golf Park	Jun 84	30	L	0.060	68
Veterans Memorial Stadium	Jan 85	6	AF	0.021	24
Recreation Park Bowling Green	Aug 85	3	L	0.004	5
California State University, Long Beach	Dec 85	52	AF,L	0.112	125
Long Beach City College	Feb 86	15	AF,L	0.022	25
Recreation 9-Hole Golf Course	Mar 86	37	L	0.059	66
Blair Field	Apr 86	5	AF	0.010	12
Woodlands Park	Apr 86	7	L	0.011	12
Colorado Lagoon Park	Apr 86	4	L	0.003	4
Marina Vista Park	Apr 86	30	L	0.027	30
Lakewood 1st Presbyterian Church	Sep 88	1	L	0.001	1
Virginia Country Club	Mar 89	135	L,P	0.077	86
Lakewood Golf Course	Mar 89	128	L,P	0.272	305
Scherer Park	Mar 89	24	L	0.031	35
Sunnyside Memorial Park	Apr 89	35	L	0.071	79
All Soul's Cemetery	Apr 89	40	L	0.104	116
Cherry Avenue Park	May 89	10	L	0.011	13
Los Coyotes Diagonal	Mar 91	1	L	0.001	1
Wilson High School	Jun 91	5	AF,L	0.022	24
Long Beach Water Department office	Jan 92	2	L	0.002	2
Reservoir Park (Signal Hill)	Feb 92	2	L	0.009	10
Burroughs Elementary School (Signal Hill)	Feb 92	4	AF,L	0.003	3
Hughes Middle School	Apr 92	3	AF,L	0.013	15
405 Freeway at Walnut	Apr 92	9	L	0.008	9
Somerset Park	May 92	3	L	0.001	1
Longfellow Elementary School	May 92	1	AF,L	0	0
THUMS	Jun 95	8	I	1.035	1,160
Joe Rodgers Park	Nov 96	4.5	L	0.007	7
Jauregui Nursery	Jul 97	5	O	0.029	33
El Dorado Lakes Condominiums	Aug 98	11	L	0.025	28
WalMart	Dec 98	3	L	0.014	16
Vestar Development	Feb 99	8	L	0.035	39
Willow Street medians	Dec 01	2.4	L	0.003	3
Long Beach Water Department Impoundment	Jul 02	--	I	0.001	1
Alamitos Seawater Intrusion Barrier (WRD)	Feb 03	--	R	2.116	2,372
Boeing	Mar 03	52	L	0.013	14
Tucker Elementary School	May 04	3	AF, L	0.005	6
Alamitos Hill Reservoir landscaping	Jul 04	8.6	L	0.002	2
Bluff Park	Jul 07	25.8	L	0.016	17
Stearns Park	Jul 07	21	L	0.021	24

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

TABLE 8
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
LONG BEACH WATER DEPARTMENT
(PAGE 2 OF 2)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Bixby Park	Jul 07	12.5	L	0.013	14
Douglas Park residential/commercial development	Nov 07	2.1	L	0.062	70
Tincher Elementary School	Feb 09	1.5	AF, L	0.004	5
Long Beach Public Works sewer flushing	Aug 10	--	I	0.001	1
Long Beach Public Works street sweeping	Aug 10	--	I	0.0003	0.3
TOTALS		**1,928.3**		**5.736**	**6,428**

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

jointly purchased from the Metropolitan Water District of Southern California (MWD) by the Water Replenishment District of Southern California (WRD) and the Orange County Water District (OCWD) was injected into the Alamitos Barrier. In 1993, additional injection wells were constructed, and have increased the freshwater injection capacity at the Alamitos Barrier to 7,500 AFY.

Originally conceived of in the late 1980's, the Leo J. Vander Lans Advanced Water Treatment Facility (LVLAWTF) treats tertiary effluent from the Long Beach WRP with microfiltration and reverse osmosis (MF/RO), followed by application of ultraviolet light (UV) for the destruction of NDMA. The advanced treated product water is then blended with MWD supplies for injection into the seawater intrusion barrier. This project uses the existing 27-inch MWD supply line to the Alamitos Barrier. Construction of the treatment processes on four acres of land directly north of the Long Beach WRP began in late 2001 and was completed in early 2003. After equipment testing and permit adoption by the LARWQCB, actual recycled water deliveries for injection began in October 2005. The approximate $15 million cost for the LVLAWTF was funded in part by MWD's Local Resource Program and the federal government.

During FY 10-11, the LVLAWTF produced 2.116 MGD (2,372 AFY) of advanced treated recycled water that was injected into the Alamitos Barrier, or 11.3% of the effluent produced at the Long Beach WRP. This was a 4.1% increase in the amount of recycled water used for this application from the preceding fiscal year, although still below the production capacity of the LVLAWTF.

2.3 LOS COYOTES WRP

This treatment facility, located at 16515 Piuma Avenue, Cerritos, CA 90703, was completed in 1970 and was expanded in 1975 to its current design capacity of 37.5 MGD. This plant produced an average of 20.87 MGD (23,388 AFY) of coagulated, filtered, disinfected tertiary recycled water during FY10-11 (5.2% of the effluent produced in the JOS), which was a decrease of 13.6% from the preceding fiscal year, at an O&M cost of approximately $319/AF. Effluent water quality for FY 10-11 is presented in Table B-2 of Appendix B.

LOS COYOTES WRP FACTS	
Plant capacity:	37.5 MGD
Water produced:	20.87 MGD 23,388 AFY 13.6% FY decrease
FY10-11 O&M:	$319/AF
Water reused:	5.012 MGD 5,617 AFY 4.1% FY decrease 24.0% of production
Delivery systems:	4 465,300 ft. of pipe
No. of reuse sites:	275 2,471.5 acres

Through three contracts, an average of 5.012 MGD (5,617 AFY), or 24.0% of the recycled water produced at this plant was delivered during FY 10-11 for use in the cities of Bellflower, Bell Gardens, Cerritos, Compton, Downey, Lakewood, Lynwood, Norwalk, Paramount, Santa Fe Springs, South Gate, and Vernon. This represents a 4.1% decrease in reuse flows from the preceding fiscal year. Since the majority of reuse from this plant is for landscape irrigation, the decrease in use is directly attributable to the significant increase in rainfall from the preceding fiscal year. Use of recycled water from this facility is permitted under LARWQCB Order Nos. 87-51 and 97-072.

2.3.1 CITY OF BELLFLOWER

Recycled water deliveries to a single, 5-acre site (Ruth B. Caruthers Park) in this city began in November 1978. During FY 10-11, an average of 0.038 MGD (42 AFY), or about 0.2% of the recycled water produced at this plant, was used at this site for landscape irrigation. This was a 19.2% decrease from the preceding fiscal year.

A 30 HP pump at the end of the plant's effluent forebay supplies recycled water to the park through 1,900 feet of 4-inch pipe that crosses the San Gabriel River along a footbridge.

2.3.2 CITY OF CERRITOS

Initial deliveries to this city also began in November 1978 and consisted of landscape irrigation and ornamental lake supply at the 25-acre Ironwood Nine Golf Course next to the Los Coyotes WRP. Recycled water was supplied to this site by means of a 50 HP pump at the plant's effluent forebay (next to the City of Bellflower pump) and 75 feet of 6-inch pipe. This system was abandoned in May 1988 when the City of Cerritos completed its citywide distribution system, including 142,600 feet of pipeline (Figure 8). A narrative description of the layout of the City of Cerritos' recycled water distribution system is contained in Appendix D. Table 9 lists all of the users of recycled water on the City of Cerritos distribution system as of the end of FY 10-11.

No new users of recycled water were added to the City of Cerritos distribution system during FY 10-11. During FY 10-11, the City of Cerritos used 1.627 MGD (1,823 AFY), or 7.8% of the recycled water produced at the Los Coyotes WRP, for landscape irrigation and impoundments on 755.4 acres at 83 individual sites. This was a decrease of 2.6% from the preceding fiscal year. City trucks also hauled a small amount of recycled water for landscape irrigation. No private water trucks hauled recycled water during this fiscal year. In FY 10-11, the City of Cerritos charged its recycled water customers $326.70/AF, or 53% of the potable water rate of $614.20/AF.

2.3.3 CITY OF LAKEWOOD

In August 1989, the City of Lakewood connected to two of the stub-outs provided in the City of Cerritos recycled water distribution system to supply their own distribution system. In 1989, this system consisted of 28,300 feet of pipelines that initially served eight sites. Nine other sites have been connected since then. All of the users of recycled water from the City of Lakewood distribution system, as of the end of FY 10-11, are shown in Figure 9 and listed in Table 10. A narrative description of the layout of the City of Lakewood's recycled water distribution system is contained in Appendix E.

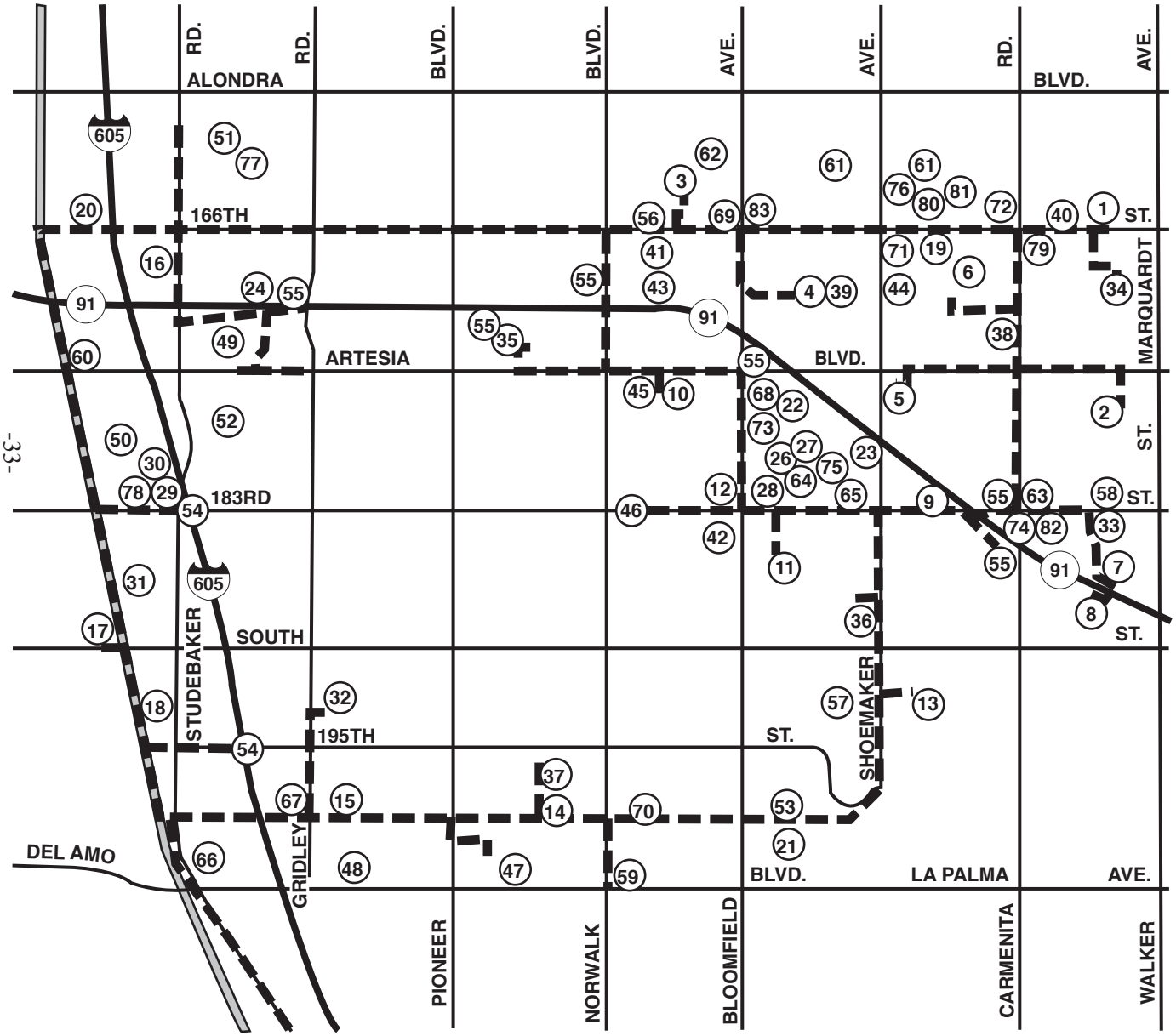
During FY 10-11, the City of Lakewood used 0.395 MGD (443 AFY), or 1.9% of recycled water produced at the Los Coyotes WRP, for irrigation of landscaping, athletic fields, and vegetables on approximately 191 acres at 17 individual sites. This was a slight decrease of 0.2% from the preceding fiscal year. No new reuse sites were added to City's recycled water distribution system in FY 10-11.

The City of Lakewood was charged $435.60/AF by the City of Cerritos during FY 10-11. The City of Lakewood, in turn, retailed the recycled water to its customers for $444.31/AF, or 47% of its potable rate of $945.25/AF. However, it is the City's policy to reimburse its recycled water customers for their capital expenditures to convert their on-site facilities to accept recycled water.

2.3.4 CENTRAL BASIN MUNICIPAL WATER DISTRICT (CENTURY SYSTEM)

Central Basin Municipal Water District (CBMWD), a regional wholesale water purveyor and member agency of MWD, is the lead agency in developing the regional Century recycled water distribution system that serves the cities of Bellflower, Bell Gardens, Compton, Downey, Lakewood, Lynwood, Norwalk, Paramount, Santa Fe Springs, and South Gate. The $15 million project initially consisted of 26 miles of pipeline connected to one of the 24-inch distribution lines coming from the City of Cerritos pump station, and now has 189,800 feet of pipeline. The backbone of the distribution system is a 30-inch pipeline paralleling the San Gabriel River.

FIGURE 8
CITY OF CERRITOS RECLAIMED WATER DISTRIBUTION SYSTEM



1. Carmentia Park
2. Friendship Park
3. Satellite Park
4. Frontier Park
5. Saddleback Park
6. City Park West
7. Rainbow Park
8. Bettencourt Park
9. Brookhaven Park
10. Rosewood Park
11. Heritage Park
12. Library/Civic Center
13. Sunshine Park
14. Jacob Park
15. Gridley Park
16. Reservoir Hill Park
17. Westgate Park
18. Liberty Park
19. Olympic Natatorium
20. Ironwood 9 Golf Course
21. Sports Complex
22. ADP No. 2
23. Shoemaker on/off ramp
24. Windjammer off-ramp
25. Medians/Parkways
26. Transpacific Devel. Co.
27. Sheraton Hotel
28. Automated Data Proc.
29. Cerritos Pontiac/GMC
30. Moothart Chrysler
31. Browning Olsmobile
32. Bragg Elementary
33. Cerritos Elementary
34. Gonsalves Elementary
35. Juarez Elementary
36. Leal Elementary
37. Pat Nixon Elementary
38. Stowers Elementary
39. Whittman Elementary
40. Carmenita Junior High
41. ABC Adult School/Office
42. Cerritos High School
43. Tracy Education Center
44. Whitney Learning Center
45. Kennedy Elementary
46. Elliott Elementary
47. Cabrillo Lane Elementary
48. Haskell Junior High
49. Gahr High School
50. Bellflower Christian School
51. Cerritos Community College
52. Artesia Cemetery Dist.
53. Cerritos Reg. Co. Park
54. CalTrans 605 Freeway
55. CalTrans 91 Freeway
56. Parkside Condominiums
57. Shadow Park HOA
58. Concordia Church
59. Church of Nazarene
60. B&B Stables
61. ADP No. 6
62. Granada Park HOA
63. Cerritos Post Office
64. Performing Arts Center
65. Delta Dental
66. Orange County Nursery
67. SCE Nursery
68. Vestar Development
69. Sundance Condos
70. Cerritos Nursery
71. Warmington Homes
72. Midway International
73. Bloomfield Associates
74. 183rd St. on-ramp
75. AT&T Headquarters
76. Laskey-Weil
77. Chancellor Village
78. Land Rover
79. Surgical Center
80. UPS parking structure
81. UPS main building
82. Fountain Walk Senior Housing
83. ASCIP Building

N

No Scale

(1) REUSE SITES

TRANSMISSION LINE

TABLE 9
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
CITY OF CERRITOS
(PAGE 1 OF 2)

Reuse Site	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Ironwood 9 Golf Course	Nov 78	25	L,P	0.083	93
Library/Civic Center	Dec 87	4	L	0.014	16
Olympic Natatorium	Dec 87	6	L	0.016	18
Whitney Learning Center	Dec 87	10	AF,L	0.019	21
Gonsalves Elementary School	Dec 87	5	AF,L	0.014	16
Wittman Elementary School	Dec 87	5	AF,L	0.009	10
Gahr High School	Dec 87	28	AF,L	0.053	60
Area Development Project No. 2	Jan 88	11.5	L,P	0.055	61
Medians/Parkways	Jan 88	42.8	L	0.145	162
605 Freeway	Jan 88	58.6	L	0.131	147
91 Freeway	Jan 88	70	L	0.036	41
Frontier Park	Jan 88	2.5	L	0.008	9
Carmenita Junior High School	Jan 88	5	AF,L	0.017	19
Cerritos Elementary School	Jan 88	6	AF,L	0.017	20
Stowers Elementary School	Jan 88	6	AF,L	0.022	25
Kennedy Elementary School	Jan 88	7	AF,L	0.021	24
City Park East	Jan 88	18	L	0.040	45
Satellite Park	Jan 88	2	L	0.005	5
Leal Elementary School	Jan 88	6	AF,L	0.010	11
Cerritos High School	Jan 88	20	AF,L	0.039	44
Elliott Elementary School	Jan 88	7	AF,L	0.013	14
Carmenita Park	Jan 88	4.5	L	0.012	14
Juarez Elementary School	Jan 88	7	AF,L	0.019	21
ABC Adult School & Office	Jan 88	3	L	0.014	15
Tracy Education Center	Jan 88	6	AF,L	0.003	3
Liberty Park	Jan 88	20	L	0.069	77
Gridley Park	Jan 88	9	L	0.019	21
Jacob Park	Jan 88	4.5	L	0.012	13
Heritage Park	Feb 88	12	L	0.034	38
Bragg Elementary School	Feb 88	7	AF,L	0.023	26
Haskell Junior High School	Feb 88	18	AF,L	0.039	44
Pat Nixon Elementary School	Feb 88	5	AF,L	0.009	10
Cabrillo Lane Elementary School	Feb 88	9	AF,L	0	0
Sunshine Park	Feb 88	3.5	L	0.008	9
Friendship Park	Feb 88	4	L	0.008	9
Bettencourt Park	Feb 88	2	L	0.005	5
Brookhaven Park	Feb 88	2	L	0.006	7
Saddleback Park	Feb 88	2	L	0.005	5
Westgate Park	Feb 88	4	L	0.007	8
Rainbow Park	Mar 88	2.5	L	0.007	8
Bellflower Christian School	Mar 88	31.4	AF,L	0.034	38
Cerritos Community College	Mar 88	55	AF,L	0.074	83
Cerritos Regional County Park	Apr 88	59	L	0.109	122
Artesia Cemetery District	Apr 88	10.9	L	0.022	24
Rosewood Park	Apr 88	2.7	L	0.008	9
Sports Complex	Mar 89	25	AF,L	0.045	51
Shoemaker On/Off Ramp - 91 Freeway	Dec 89	4.6	L	0.013	14
Transpacific Development Co.	Feb 90	6.9	L	0.010	11
Automated Data Processing	Feb 90	0.7	L	0.004	4
Sheraton Hotel	Mar 90	0.6	L	0.003	4
Cerritos Pontiac/GMC Truck	May 90	0.5	L	0.001	1
Moothart Chrysler	May 90	0.4	L	0.005	6
Windjammer Off Ramp - 91 Freeway	Sep 90	0.8	L	0.002	2

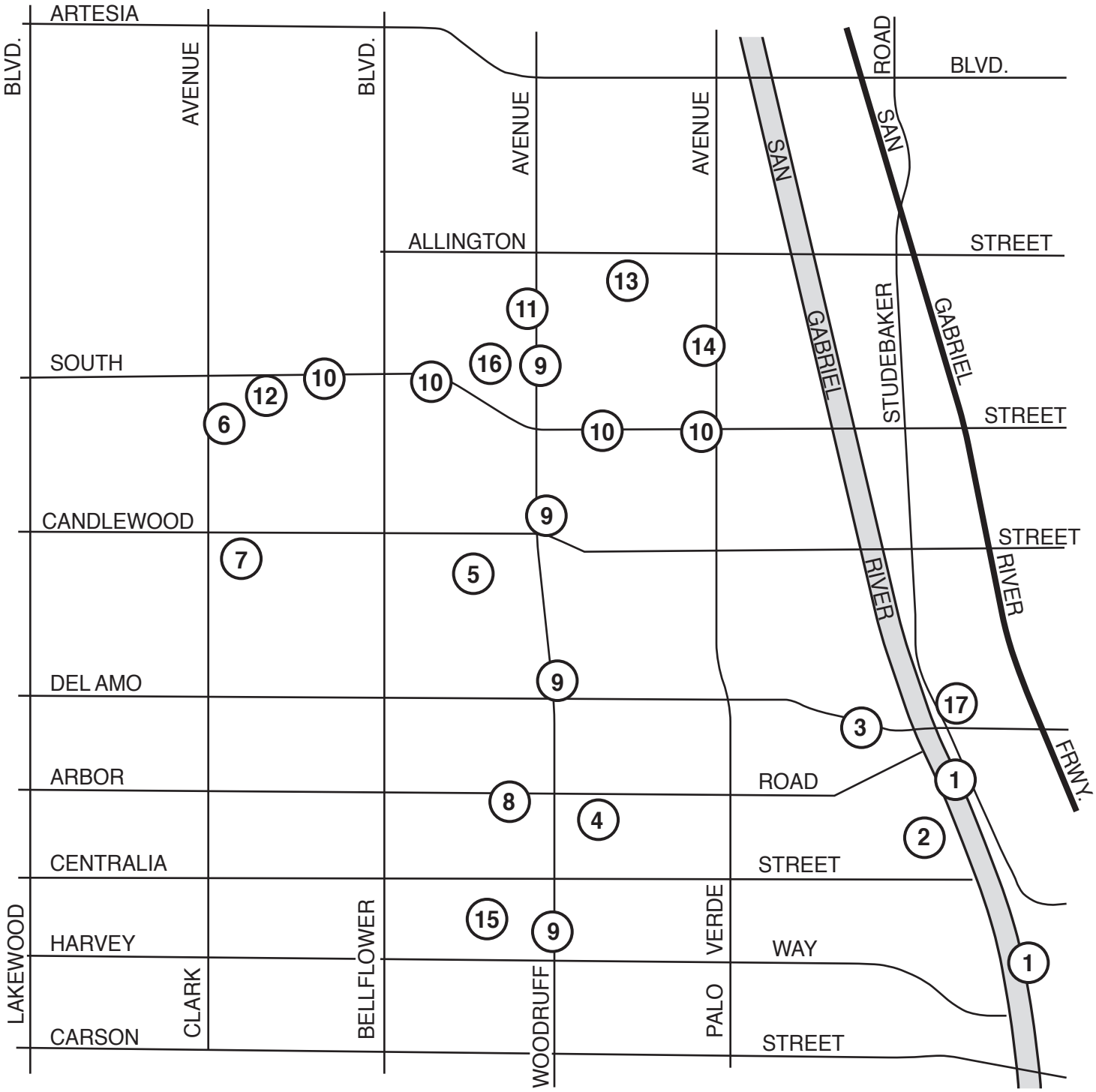
NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

TABLE 9
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
CITY OF CERRITOS
(PAGE 2 OF 2)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Browning Oldsmobile	Sep 90	0.1	L	0.001	1
City Water Truck	May 91	--	L	0.0003	0.4
Private Haulers	May 91	--	I	0	0
Parkside Condominiums	May 91	1.8	L	0.006	6
Concordia Church	Jun 91	4	L	0.005	6
Church of the Nazarene	Aug 91	1	L	0.003	4
B&B Stables	Aug 91	18	I	0.005	5
Shadow Park Homeowner's Association	Nov 91	6	L	0.014	16
Area Development Project No. 6	Apr 92	9	L	0.056	63
Granada Park Homeowners Association	May 92	3.8	L	0.013	15
Cerritos Post Office	Feb 93	0.7	L	0.005	6
Center for the Performing Arts	Mar 93	1	L	0.004	4
Delta Dental	Nov 93	1.8	L	0.002	2
Southern California Edison nursery	Mar 94	3.5	O	0.004	5
Vestar Development	Jun 94	9.6	L	0.035	39
Sundance Condominiums	Jan 95	9	L	0.028	32
Cerritos Nursery	Dec 95	3	O	0.006	7
Encore Maintenance-Warmington Homes	May 96	1.1	L	0.002	3
Artesia Off Ramp - 91 Freeway	Aug 96	3.3	L	0.005	6
Midway International	Feb 98	0.3	L	0.001	1
Bloomfield Associates, 17871 Park Plaza Drive	Sep 98	0.5	L	0.001	1
183rd Street On Ramp - 91 Freeway	Feb 99	0.6	L	0.001	1
AT&T building, 12900 Park Plaza Drive	Aug 99	0.9	L	0.010	11
Laskey-Weil building, 13101 Moore Street	Oct 01	0.4	L	0.002	2
Chancellor Village Senior Housing	Nov 02	0.9	L	0.002	2
LandRover	Dec. 06	0.3	L	0.003	3
Surgical Center, Carmenita & 166th	May 08	0.1	L	0.0003	0.4
UPS Parking Structure, 13150 Moore	May 08	0.5	L	0.001	1
UPS Main Building, 13233 Moore	Nov 08	4.4	L	0.012	13
Fountain Walk Senior Housing, 18310 Carmenita	Nov 08	0.1	L	0.0004	0.4
ASCIP Building, 16550 Bloomfield	Feb 09	0.1	L	0.0004	1
12800 Center Court	Jul 09	0.4	L	0.002	2
TOTALS		**755.4**		**1.627**	**1,823**

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

FIGURE 9
CITY OF LAKEWOOD REUSE SITES



1. RIVER (RYNERSON) PARK
2. MONTE VERDE PARK
3. MAE BOYER PARK
4. JOSE DEL VALLE PARK
5. JOSE SAN MARTIN PARK
6. MAYFAIR PARK
7. CIVIC CENTER WAY & CITY HALL
8. CITY WATER YARD
9. WOODRUFF AVENUE GREENBELT
10. SOUTH STREET GREENBELT
11. ST. JOSEPH'S PARISH SCHOOL
12. FOSTER ELEMENTARY SCHOOL
13. MAYFAIR HIGH SCHOOL
14. LINDSTROM ELEMENTARY SCHOOL
15. LAKEWOOD HIGH SCHOOL
16. MY HOA FARM
17. DEL AMO BLVD. MEDIANS

N

No Scale

TABLE 10
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
CITY OF LAKEWOOD

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
River (Rynerson) Park	Aug 89	40	L	0.064	72
Monte Verde Park	Aug 89	4	L	0.051	58
Mae Boyer Park	Aug 89	8	L	0.032	35
Jose Del Valle Park	Aug 89	12	L	0.026	29
Jose San Martin Park	Aug 89	9.3	L	0.021	23
City Water Yard	Aug 89	1	L	0.010	11
Woodruff Avenue greenbelt	Aug 89	4.1	L	0.011	12
South Street greenbelt	Aug 89	3.3	L	0.009	10
Mayfair Park	Dec 89	18	L	0.039	44
St. Joseph Parish School	Aug 90	3.5	AF,L	0.010	11
Foster Elementary School	Sep 90	6	AF,L	0.016	18
Civic Center Way and City Hall	Nov 90	2.8	L	0.014	16
Mayfair High School	May 91	36.5	AF,L	0.041	46
Lindstrom Elementary School	Sep 91	12	AF,L	0.014	15
Lakewood High School	Sep 91	25	AF,L	0.024	27
My Hoa Farm	May 93	5	AG	0.011	13
Del Amo Blvd. greenbelt	Jul 03	0.3	L	0.002	3
TOTALS		**190.8**		**0.395**	**443**

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

Construction of the initial system was completed in 1992, with the delivery of recycled water for applications such as landscape irrigation of parks, schools, and freeway slopes, nursery stock irrigation, and various industrial applications. To ensure reliable and efficient delivery of recycled water to the City of Vernon's Malburg Electrical Generation Station, along with existing and future Sanitation Districts' customers, CBMWD worked with the City of South Gate to construct a booster pump at the City's Hollydale Park in November 2004. The Hollydale Pump Station has improved the overall water pressure and supply reliability for CBMWD's recycled water customers in various local cities, including the cities of South Gate, Lynwood, Huntington Park, and Vernon.

This system was also connected in 1994 to the completed portions of the Rio Hondo recycled water distribution system, as detailed in Section 2.5.6 below. Both the Century and Rio Hondo distribution systems can be partially supplied with recycled water from either the Los Coyotes or San Jose Creek WRPs individually or in combination. Most of the recycled water delivered through the Century distribution system actually originated at the San Jose Creek WRP. However, the usage is still reported from the Los Coyotes WRP, as there is no way to differentiate which reuse sites receive which recycled water. Therefore, for the sake of consistency, recycled water usage along the Century facilities is reported in the water reuse reports as coming from the Los Coyotes WRP, and along the Rio Hondo facilities as coming from the San Jose Creek WRP. Figure 10 shows all of the pipelines for both distribution systems, as well as all of the current recycled water use sites. A narrative description of the layout of the Century recycled water distribution system is contained in Appendix F. Table 11 lists all of the recycled water use sites connected to the Century distribution system through FY 10-11.

CBMWD has constructed the delivery facilities right up to the end user; however, the local retail water purveyor is the entity actually supplying the recycled water. Over the past few years, three of the retail purveyors, the cities of Downey, Santa Fe Springs and Lynwood, constructed an additional 20,800 feet of pipelines connecting to the CBMWD distribution system. During FY 10-11, two new sites were added to the Century recycled water distribution system. In August 2010, Los Amigos Golf Course was connected. In March 2011, the medians along Atlantic Blvd in South Gate were connected.

During FY 10-11, CBMWD delivered 2.953 MGD (3,309 AFY) of recycled water), or 14.1% of recycled water produced at the Los Coyotes WRP, through 11 retail water purveyors to 172 individual sites for landscape and athletic field irrigation on approximately 1,504 acres and for industrial process water. This was a decrease of 5.1% from the preceding fiscal year.

In FY 10-11, CBMWD sold the recycled water on a wholesale basis to its retail water purveyor customers on a monthly use, tiered rate schedule of $506 for the first 50 AF, and $460 for anything above 50 AF. This price is between 57% and 62% of the rate of $805/AF it charges for Tier 1 non-interruptible potable water supplied by MWD, and between 50% and 55% of the rate of $915/AF it charges for Tier 2 supplies. Recycled water delivered outside of CBMWD's service area was subject to a $20/AF surcharge for each of the two tiers. Recycled water deliveries to the Malburg power plant in Vernon received an industrial use rate of $357 for the first 25 AF, $332 for the next 25 AF, $308 for the next 50 AF, and $283 for anything above 100 AF. Once they receive recycled water from CBMWD, the retail purveyors then set their own rates for the recycled water delivered to individual customers.

2.4 POMONA WRP

Several treatment plants serving the east San Gabriel Valley were constructed and operated by other agencies as early as 1927. The current Pomona WRP, located at 295 Humane Way, Pomona, CA 91766, was completed in 1966 and most recently expanded in 1991, allowing the plant to treat up to 15 MGD. In FY 10-11, the plant

FIGURE 10
CENTRAL BASIN MUNICIPAL WATER DISTRICT
RECLAIMED WATER DISTRIBUTION SYSTEM

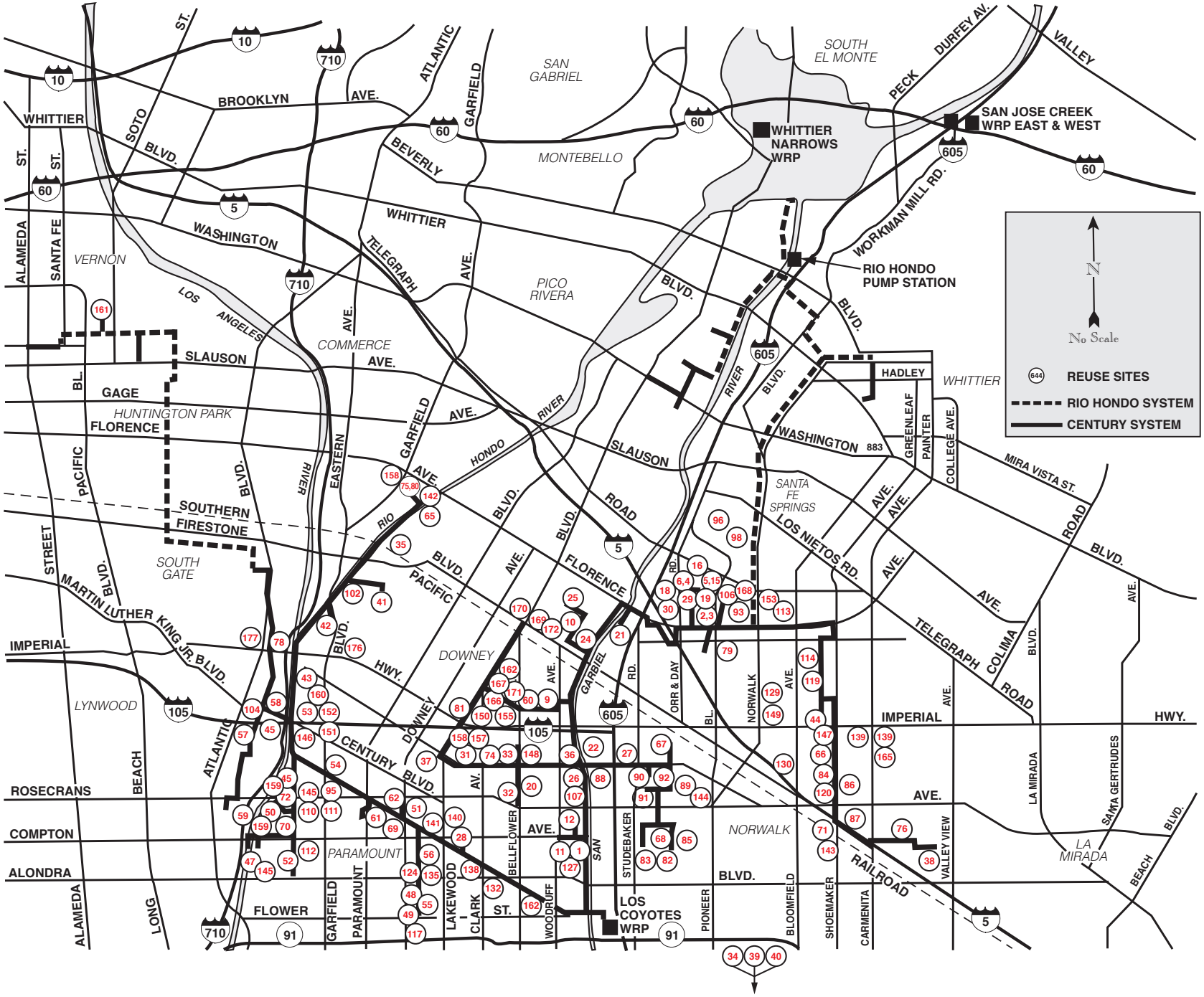


TABLE 11
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
CENTURY DISTRIBUTION SYSTEM
(PAGE 1 OF 4)

Reuse Site (City) (Map No.)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Andy's Nursery (Bellflower) (1)	Feb 92	9	O	0	0
Lake Center Park (Santa Fe Springs) (2)	Mar 92	8	L	0.018	20
Lake Center School (Santa Fe Springs) (3)	Mar 92	8	AF,L	0.016	18
Clarkman Walkway (Santa Fe Springs) (4)	Mar 92	0.1	L	0.0003	0.3
Towne Center Walkway (Santa Fe Springs) (5)	Apr 92	0.1	L	0.0003	0.3
Lakeview Child Care (Santa Fe Springs) (6)	May 92	0.2	L	0.001	2
Orr & Day Road medians (Santa Fe Springs) (7)	May 92	0.1	L	0.00002	0.03
Florence Avenue medians (Santa Fe Springs) (8)	Jun 92	3	L	0.005	6
Gauldin Elementary School (Downey) (9)	Jun 92	8.4	AF,L	0.005	5
Rio San Gabriel School (Downey) (10)	Jun 92	14.8	AF,L	0.014	16
Bellflower High School (Bellflower) (11)	Jul 92	28.4	AF,L	0.063	70
Ernie Pyle Elementary School (Bellflower) (12)	Aug 92	4.9	AF,L	0.012	13
Telegraph Road medians (Santa Fe Springs) (13)	Aug 92	0.5	L	0.003	3
Lakeview Park (Santa Fe Springs) (14)	Aug 92	6.7	L	0.011	12
Clark Estate (Santa Fe Springs) (15)	Aug 92	4.3	L	0.005	5
Towne Center Green (Santa Fe Springs) (16)	Aug 92	2.3	L	0.006	7
Pioneer Road medians (Santa Fe Springs) (17)	Sep 92	0.4	L	0.030	34
Police Station (Santa Fe Springs) (18)	Sep 92	0.2	L	0.001	1
Aquatic Center (Santa Fe Springs) (19)	Sep 92	0.5	L	0.004	4
Lewis School (Downey) (20)	Nov 92	4.6	AF,L	0.005	6
Wilderness Park (Downey) (21)	Nov 92	24	L	0.092	103
605 Freeway at Foster (Bellflower) (22)	Jan 93	14	L	0	0
Promenade Walkway (Santa Fe Springs) (23)	Jan 93	0.3	L	0.001	1
Rio San Gabriel Park (Downey) (24)	Jan 93	6.4	L	0.032	36
East Middle School (Downey) (25)	Jan 93	26	AF,L	0.017	19
Zinn Park (Bellflower) (26)	Jan 93	1.7	L	0.003	4
605/105 Interchange (Bellflower) (27)	Feb 93	22	L	0.0001	0.1
Hollywood Sports Center (Bellflower) (28)	Feb 93	22.5	L	0.002	2
Santa Fe Springs High School (Santa Fe Springs) (29)	Feb 93	14.5	AF,L	0.023	25
605/5 Freeway at Florence (Santa Fe Springs) (30)	Feb 93	17	L	0.0002	0.2
Old Downey Cemetery (Downey) (31)	Apr 93	7.5	L	0.026	30
Thompson Park (Bellflower) (32)	Apr 93	15	L	0.014	16
105 Freeway at Bellflower (Downey) (33)	May 93	17.9	L	0.009	10
Palms Park (Lakewood) (34)	May 93	20	L	0.003	3
Crawford Park (Downey) (35)	Jul 93	2.1	L	0.006	7
Humedo Nursery (Downey) (36)	Aug 93	11	O	0.005	6
105 Freeway at Lakewood (Downey) (37)	Sep 93	25	L	0.003	4
Shaw Industries Carpet Mill (Santa Fe Springs) (38)	Sep 93	--	I	0.076	85
Palms Elementary School (Lakewood) (39)	Sep 93	3.5	AF,L	0.012	13
Artesia High School (Lakewood) (40)	Sep 93	20.9	AF,L	0.033	37
West Middle School (Downey) (41)	Oct 93	19.5	AF,L	0.015	17
Circle Park (South Gate) (42)	Oct 93	4	L	0.013	15
Hollydale Park (South Gate) (43)	Nov 93	46	L	0.112	126
Robertson's Ready-Mix (Santa Fe Springs) (44)	Dec 93	--	I	0.005	5
710/105 Interchange (Paramount) (45)	Dec 93	18.5	L	0	0
Downey/Contreras greenbelt (Paramount) (46)	Dec 93	0.1	L	0.0003	0.3
Compton Golf Course (Paramount) (47)	Dec 93	13	L	0.021	24
Alondra Junior High School (Paramount) (48)	Dec 93	14	AF,L	0.012	14
Mokler Elementary School (Paramount) (49)	Dec 93	10	AF,L	0.009	11
Los Cerritos Elementary School (Paramount) (50)	Dec 93	8	AF,L	0.011	12
Wirtz Elementary School (Paramount) (51)	Dec 93	9	AF,L	0.011	12
Keppel Elementary School (Paramount) (52)	Dec 93	4	AF,L	0.002	3
Billy Lee Nursery (Paramount) (56)	Dec 93	2.5	O	0.008	9

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

TABLE 11
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
CENTURY DISTRIBUTION SYSTEM
(PAGE 2 OF 4)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
105 Freeway at Wright (Lynwood) (57)	Jan 94	19.6	L	0.001	2
710 Freeway at M.L. King (Lynwood) (58)	Jan 94	15.5	L	0	0
710 Freeway at Rosecrans (Compton) (59)	Jan 94	24.2	L	0.007	8
Independence Park (Downey) (60)	Feb 94	10.4	L	0.011	13
Paramount Park (Paramount) (61)	Feb 94	9	L	0.022	24
Paramount High School (Paramount) (62)	Feb 94	19	AF,L	0.021	23
Rosecrans/Paramount medians (Paramount) (63)	Mar 94	0.2	L	0.002	2
Somerset medians (Paramount) (64)	Apr 94	0.9	L	0.005	6
Rio Hondo Golf Course (Downey) (65)	Apr 94	92.4	L	0.193	216
Zimmerman Park (Norwalk) (66)	Apr 94	9.5	L	0.015	17
Vista Verde Park (Norwalk) (67)	Apr 94	6.5	L	0.012	14
Gerdes Park (Norwalk) (68)	Apr 94	8.6	L	0.015	17
Clearwater Junior High School (Paramount) (69)	Apr 94	4	AF,L	0.031	35
Steam Engine Park (Paramount) (70)	Jun 94	0.6	L	0.001	1
5 Freeway at Shoemaker/Firestone (Norwalk) (71)	Jul 94	0.8	L	0.003	4
Spane Park (Paramount) (72)	Jul 94	5	L	0.008	9
Orange/Cortland Parkway (Paramount) (73)	Jul 94	1.3	L	0.002	3
Carpenter School (Downey) (74)	Aug 94	7.4	AF,L	0.007	7
John Anson Ford Park (Bell Gardens) (75)	Sep 94	45	L	0.054	60
Ramona Park (Norwalk) (76)	Oct 94	4.8	L	0.004	4
Alondra median (Paramount) (77)	Oct 94	0.6	L	0.007	8
Imperial/Wright Road medians (Lynwood) (78)	Oct 94	0.2	L	0.001	1
Little Lake Park (Santa Fe Springs) (79)	Dec 94	18	L	0.033	36
John Anson Ford Golf Course (Bell Gardens) (80)	Feb 95	13.6	L	--	--
South Middle School (Downey) (81)	May 95	15.8	AF,L	0.007	8
Nuffer Elementary School (Norwalk) (82)	Jun 95	10.4	AF,L	0.007	8
Lampton Middle School (Norwalk) (83)	Jun 95	9.5	AF,L	0.009	10
Hargitt Middle School (Norwalk) (84)	Jul 95	9.5	AF,L	0.025	28
Norwalk Adult School (Norwalk) (85)	Jul 95	17.2	AF,L	0.026	29
John Glenn High School (Norwalk) (86)	Jul 95	38.8	AF,L	0.039	44
Ramona Elementary School (Norwalk) (87)	Jul 95	6.8	AF,L	0.004	4
New River Elementary School (Norwalk) (88)	Jul 95	10.3	AF,L	0.008	9
Morrison Elementary School (Norwalk) (89)	Sep 95	7.7	AF,L	0.003	4
D.D. Johnston Elementary School (Norwalk) (90)	Sep 95	8.9	AF,L	0.006	7
Corvallis Middle School (Norwalk) (91)	Sep 95	16.9	AF,L	0.030	34
Norwalk High School (Norwalk) (92)	Sep 95	35.1	AF,L	0.033	37
Heritage Park (Santa Fe Springs) (93)	Oct 95	9.2	L	0.009	10
Belloso Farm Nursery (Paramount) (94)	Oct 95	2.5	O	0.002	2
Robertson's Ready-Mix (Paramount) (95)	Nov 95	--	I	0.007	8
Los Nietos Park (Santa Fe Springs) (96)	Jan 96	11.2	L	0.014	15
Bell Gardens Soccer Field (Bell Gardens) (97)	Feb 96	2.6	AF	0.004	5
Jersey Ave. School/city athl. fields (S.F. Springs) (98)	Mar 96	8	AF	0.004	5
Bellflower Blvd. medians (Bellflower) (99)	Jul 96	0.3	L	0.002	3
Alta Produce (Paramount) (100)	Aug 96	4	AG	0.003	2
Belloso Farm Nursery (South Gate) (101)	Sep 96	2.5	O	0.001	1
Temple Park (Downey) (102)	Oct 96	1	L	0.001	1
Woodruff Avenue medians (Bellflower) (103)	Oct 96	0.8	L	0.005	5
Ham Park (Lynwood) (104)	Dec 96	10	L	0	0
Jauregui Nursery (Paramount) (105)	Dec 96	2	O	0.005	6
Heritage Corporate Center (Santa Fe Springs) (106)	Jan 97	29.9	L	0.027	30
Belloso Farm Nursery (Bellflower) (107)	Jan 97	8	O	0	0
Foster Road medians (Norwalk) (108)	Jan 97	0.3	L	0.002	2
Rosecrans Avenue medians (Paramount) (109)	Mar 97	0.2	L	0.008	9

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

TABLE 11
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
CENTURY DISTRIBUTION SYSTEM
(PAGE 3 OF 4)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Texaco/Somerset medians (Paramount) (110)	Mar 97	0.2	L	0.001	1
McLane Mowers (Paramount) (111)	Mar 97	0.6	L	0	0
ABC Nursery (Paramount) (112)	Mar 97	16	O	0	0
L.A. Co. Vector Control Bldg. (S.F. Springs) (113)	Mar 97	3.8	L	0.003	4
Greenstone Warehouse (Santa Fe Springs) (114)	Apr 97	0.4	L	0.002	2
McNab Avenue medians (Bellflower) (115)	Jul 97	0.1	L	0.0004	0.5
Foster Road/Premier Ave. medians (Downey) (116)	Aug 97	0.1	L	0.001	1
Palm Growers Nursery (Downey) (117)	Oct 97	7.3	O	0	0
Alondra Blvd medians @ SGR (Bellflower) (118)	Oct 97	0.1	L	0.0002	0.2
Maruichi American building (Santa Fe Springs) (119)	Oct 98	0.4	L	0.001	1
Norwalk Golf Course (Norwalk) (120)	Jan 99	8	L	0.022	25
Soco-Lynch Corp. building (Santa Fe Springs) (121)	Feb 99	1	L	0.002	3
MC&C building (Santa Fe Springs) (122)	Mar 99	0.7	L	0.007	7
Lakewood Blvd. medians (Paramount) (123)	Mar 99	0.2	L	0.002	2
Progress Park (Paramount) (124)	Mar 99	6.2	L	0.012	14
Garfield Avenue medians (Paramount) (125)	Apr 99	0.1	L	0.001	1
B&B Pallet Co. (South Gate) (126)	May 99	--	I	0	0
Garcia's Nursery (Bellflower) (127)	Jun 99	6	O	0	0
Orange Avenue medians (Paramount) (128)	Aug 99	0.1	L	0.003	3
Metropolitan State Hospital (Norwalk) (129)	Sep 99	80	L	0	0
Moffit School (Norwalk) (130)	Sep 99	1.6	AF,L	0.005	5
Rio Hondo Channel (Downey) (131)	Nov 99	0.8	L	0.001	1
Simms Park (Bellflower) (132)	Dec 99	12.5	L	0.014	15
Foster Road Greenbelt (Norwalk) (133)	Mar 00	3.3	L	0.003	3
San Luis Street @ flood channel (Paramount) (134)	Apr 00	3	L	0.005	1
Jefferson School (Paramount) (135)	Jul 00	0.5	AF,L	0.003	3
Columbus High School (Downey) (136)	Aug 00	25	AF,L	0.015	17
Triangle Park (South Gate) (137)	Nov 00	0.4	L	0.002	2
Golden Springs Business Park (Santa Fe Springs) (139)	Apr 01	31.4	L	0.113	126
Bellflower Storage (Bellflower) (140)	Jun 01	3	L	0.002	2
Railroad Beautification (Paramount) (141)	Jul 01	0.5	L	0	0
Rio Hondo Channel (Bell Gardens) (142)	Jul 01	0.3	L	0.003	3
CDM building (Santa Fe Springs) (143)	Oct 01	0.1	L	0.002	2
L.A. Co. Recorder's Office (Norwalk) (144)	Jan 02	2.7	L	0.014	15
Tays Cool Fuel (Paramount) (145)	Feb 02	0.2	L	0.003	3
L.A. River landscaping (South Gate) (146)	Mar 02	2.5	L	0.001	1
Lakewood-Adoree medians (Downey) (150)	Jul 02	3.4	L	0.031	35
Simon Trucking (Santa Fe Springs) (147)	Nov 02	0.9	L	0.001	1
Foster/Coldbrook medians (Bellflower) (148)	Nov 02	0.1	L	0.0003	0.4
L.A. County Library (Norwalk) (149)	Nov 02	0.9	L	0.005	6
Metro State/Wheelabrator (Norwalk) (129)	Jan 03	B	I	0.248	278
Imperial Equestrian (South Gate) (152)	Jul 03	1.5	L	0.004	4
Norwalk Walkway/Parking (Santa Fe Springs) (153)	Jul 03	1	L	0.003	4
Steve Horn Way/Bellflower medians (Downey) (155)	Nov 03	0.3	L	0.015	17
Pro Growers Nursery (Norwalk) (156)	Sep 04	11.3	O	0.040	45
Kaiser Administration building (Downey) (157)	Oct 04	2.5	L	0.005	6
Downey Studios (Downey) (158)	Oct 04	1	L	0.004	5
Dills Park (Paramount) (159)	Jul 05	12.5	L	0.030	34
Hollydale Elementary (South Gate) (160)	Sep 05	3	AF,L	0.001	1
Malburg Generation Station (Vernon) (161)	Oct 05	B	I	0.597	668
Stuart and Gray medians (Downey) (162)	Dec 05	0.4	L	0.006	7
Woodruff and Maple medians (Bellflower) (163)	Mar 06	0.1	L	0.0001	0.1
Sculpture Garden (Santa Fe Springs) (164)	May 06	0.6	L	0	0

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

TABLE 11
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
CENTURY DISTRIBUTION SYSTEM
(PAGE 4 OF 4)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Foster Road medians (Santa Fe Springs) (165)	Jul 06	1	L	0.009	11
Space Learning Center (Downey) (166)	Apr 08	10.5	L	0.024	27
Cornerstone Commerce Center (Downey) (167)	Jun 08	0.8	L	0.006	7
Mora Drive medians (Santa Fe Springs) (168)	Oct 08		L	0.004	5
Firestone Blvd. medians (Downey) (169)	Feb 09	0.1	L	0.0004	0.4
Citibank, 8764 Firestone Blvd. (Downey) (170)	Feb 09	0.1	L	0.001	1
Steve Horn Pkwy. medians @ Kaiser (Downey) (171)	May 09	1.4	L	0.023	26
Walgreens/Big Lots, 9018 Firestone (Downey) (172)	May 09	0.4	L	0.003	4
Pacific Alloy Casting (South Gate) (173)	Jul 09	--	I	0.016	18
MTA Bike Trail (Bellflower) (174)	Nov 09	0.1	L	0.001	1
Paramount Blvd. Medians (Paramount) (175)	Mar 10		L	0.004	4
Los Amigos Golf Course (L.A. County) (176)	Aug 10	110	L	0.004	4
Atlantic Ave. medians (South Gate) (177)	Mar 11	16.3	L	0.107	120
TOTALS		**1,520.3**		**2.953**	**3,309**

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

POMONA WRP FACTS	
Plant capacity:	15 MGD
Water produced:	9.00 MGD 10,089 AFY 7.4% FY increase
FY10-11 O&M:	$299/AF
Water reused: (excluding recharge)	2.557 MGD 2,865 AFY 18.2% FY decrease 28.4% of production
Delivery systems:	2 190,100 ft. of pipe
No. of reuse sites:	192 2,192.5 acres

produced 9.00 MGD (10,089 AFY) of coagulated, filtered, disinfected tertiary recycled water (2.2% of the effluent produced in the JOS), which was a 7.4% increase over the preceding fiscal year, at a FY 10-11 O&M cost of approximately $299/AF. Recycled water quality for FY 10-11 is presented in Table B-3 of Appendix B.

Two agencies, the Pomona Water Department (PWD) and the Walnut Valley Water District (WVWD), along with the Sanitation Districts' Spadra Landfill, together used 2.557 MGD (2,865 AFY) or 28.4% of the plant's total production. This was an 18.2% decrease from the preceding fiscal year. A third purveyor, Rowland Water District (RWD), took over operation of that portion of the WVWD recycled water distribution system that ran through its service area and has connected to the City of Industry system which gets its recycled water from the San Jose Creek WRP (Section 2.5.3).

The remaining recycled water is discharged to south fork of San Jose Creek, which is tributary to the unlined portion of the San Gabriel River. Therefore, nearly 100% of the recycled water produced at this plant is reused, since most of the river discharge percolates into the underlying groundwater. Use of recycled water from this facility is permitted by the LARWQCB under Order Nos. 81-34 and 97-072 for direct, non-potable applications, and No. 91-100 for groundwater replenishment.

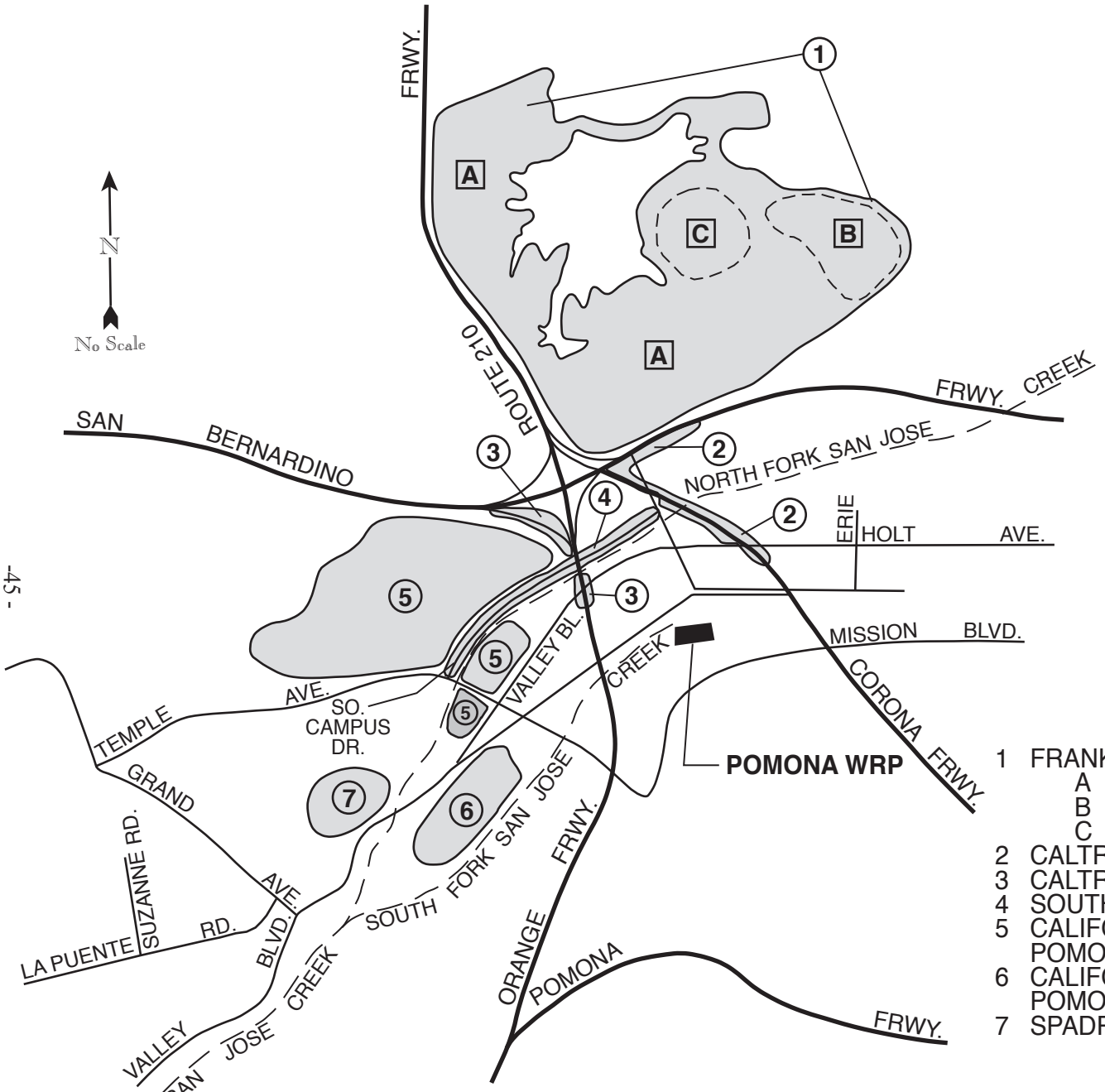
2.4.1 POMONA WATER DEPARTMENT

Documented use of recycled water in the Pomona area goes as far back as 1904 when effluents treated to various levels were used on the many farms and ranches in the area. The PWD began using recycled water from the Sanitation Districts' current treatment facility in December 1973 when agricultural irrigation at California State Polytechnic University, Pomona (Cal Poly) and its occasional satellite farming operation at Lanterman State Hospital, and landscape irrigation along South Campus Drive Parkway were connected to a recycled water distribution system.

The distribution system consists of a 490 HP, 9,000 gpm pump station that feeds two, 21-inch pipelines. One 21-inch line runs east along Pomona Boulevard and Vernon Avenue. The other 21-inch line runs north along Ridgeway Street to a T-section at South Campus Drive and the 71 Freeway. From this point, an 18-inch line continues north along Ridgeway, then east along Murchison Avenue for a short distance before it terminates at a 4.5 million gallon storage reservoir in Bonelli Park. At the T-section, a 16-inch line runs west along South Campus Drive, serving the parkway, Cal Poly, and the 57 and 71 Freeways. Lanterman Hospital had been served by a 21-inch unreinforced concrete gravity line from the Pomona WRP that currently serves the former Landfill site and the WVWD pump station (discussed in Sections 2.4.2 and 2.4.3, below).

During FY 10-11, the PWD delivered 1.251 MGD (1,347 AFY), or 13.4% of the recycled water from the Pomona WRP though 37,000 feet of pipeline, to seven retail customers on 1,427 acres as shown in Figure 11. This was a 28.3% decrease from the preceding fiscal year. Table 12 lists the users of the PWD system as of the end of FY 10-11. No new users were added during this fiscal year.

FIGURE 11
POMONA WATER DEPARTMENT AND SPADRA LANDFILL REUSE SITES



1 FRANK G. BONELLI REGIONAL COUNTY PARK
  A BONELLI PARK
  B MOUNTAIN MEADOWS GOLF COURSE
  C EAST SHORE R. V. PARK
2 CALTRANS 71 FREEWAY
3 CALTRANS 57 FREEWAY
4 SOUTH CAMPUS DRIVE PARKWAY
5 CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA - KELLOGG CAMPUS
6 CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA - LANTERMAN STATE HOSPITAL
7 SPADRA LANDFILL

TABLE 12
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
POMONA WATER DEPARTMENT & SANITATION DISTRICTS' SPADRA SITE

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Cal Poly, Pomona-Kellogg	Dec 73	500	AG,L,O,P,AF	0.469	526
Lanterman Hospital	Dec 73	100	AG	0	0
South Campus Drive Parkway	Dec 73	8	L	0.010	11
Route 57 and 10 Freeways	May 75	18	L	0.020	23
Bonelli Regional County Park	Apr 77	789	L	0.660	740
Route 71 and 10 Freeways	Apr 81	12	L	0.036	40
Spadra Landfill landscape	Jul 84	53	L	0.240	269
Spadra Landfill dust control	Jul 84	--	I	0.010	11
Cal Poly LandLab	Nov 93	2.5	AG,L	0.013	15
Spadra Gas-to-Energy Plant	Dec 95	--	I	0.049	55
Robertson's Ready-Mix	Oct 09	--	I	0.006	7
TOTALS		**1,482.5**		**1.514**	**1,697**

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

During FY 10-11, the PWD sold the recycled water to its customers from its pressure system at a rate of $521.67/AF. This is 54% of its potable water rate of $962.68/AF.

2.4.2 Spadra Landfill Site

The Sanitation Districts' Spadra Landfill began receiving recycled water from the Pomona WRP in July 1984 from the 21-inch unreinforced concrete gravity line from the plant. A pressure-sustaining valve on the line at the landfill site provides enough static head in the pipeline for the pumps of the landfill to operate. Cal Poly's LandLab project began receiving recycled water from the landfill site in November 1993, and the Spadra Gas-to-Energy (SGE) Facility began using recycled water in its cooling towers in December 1995. These sites are shown in Figure 11 and are also listed in Table 12 along with the users of the Pomona Water Department system.

During FY 10-11, 0.312 MGD (350 AFY), or 3.5% of the recycled water from the Pomona WRP, was used on approximately 56 acres at the former Spadra Landfill site, the SGE Facility, and Cal Poly's LandLab. This was a 9.1% decrease from the preceding fiscal year.

2.4.3 Walnut Valley Water District

In March 1986, WVWD completed the initial construction of its recycled water distribution system. This system consists of a 3,500 gpm pump station and an 8,000 gallon wet well at the end of the 21-inch concrete gravity line from the Pomona WRP, approximately 166,320 feet of pipeline, and a 2 million gallon reservoir. A second, 2 million gallon reservoir was constructed in mid-1992 to provide more storage for the nighttime peak demands. The distribution system is supplemented during the peak summer demand periods with non-potable water from a well located next to the recycled water line on Fairway Avenue and with imported water from MWD at the pump station. Initially, 26 individual sites were served following completion of the distribution system. In January 2003, the RWD assumed operation of the 29,280 feet of the WVWD recycled water system pipeline serving seven reuse sites in RWD's service area which was connected to the City of Industry main recycled transmission line in July 2009 (see Section 2.5.3 below). Figure 12 and Table 13 present the users of the WVWD system as of the end of FY 10-11. A narrative description of the layout of the WVWD recycled water distribution system is contained in Appendix G.

In FY 10-11, two new sites were added to the WVWD distribution system. In September 2010, the landscaping at the Donald Miller building (19803 Valley Blvd.) was connected. In December 2010, the landscaping around Bell Memorial Church (1747 Nogales St.) was connected.

During FY 10-11, WVWD delivered 1.043 MGD (1,168 AFY), or 11.6% of the recycled water produced at the Pomona WRP, a decrease of 5.6% from the preceding fiscal year. WVWD received the recycled water directly from the Sanitation Districts and retailed it to its 183 customers (which irrigate approximately 708.5 acres) at 64% of its potable water rate of $1,019.30/AF, or $649.04/AF.

2.5 San Jose Creek WRP

This treatment facility, located at 1965 Workman Mill Road, Whittier, CA 90601, was first built in 1971 with a design capacity of 37.5 MGD. The 25 MGD Stage II expansion was completed in 1982, and the 37.5 MGD Stage III expansion was completed in 1993. The facility currently has a design capacity of 100 MGD, with enough space for a future 25 MGD Stage IV expansion (however, there is no set schedule for this project). During FY 10-11, Stages I & II (east side) produced 46.00 MGD (51,547 AFY) and Stage III (west side) produced 21.42 MGD (24,008 AFY), at O&M costs of $248/AF and $221/AF, respectively. The entire facility,

FIGURE 12
WALNUT VALLEY WATER DISTRICT RECLAIMED WATER DISTRIBUTION SYSTEM

1. Walnut Ranch LMD
2. Snow Creek Park & LMD
3. Suzanne Park
4. Suzanne Middle School
5. Walnut High School
6. Vejar Elementary School
7. Morris Elementary School
8. Lemon Creek Park
9. Friendship Park
10. Hollingsworth Elem. School
11. Lanesboro Park
12. Nogales High School
13. Rincon Middle School
14. Sunshine Park
15. Schabarum Park
16. Queen of Heaven Cemetery
17. Rowland Elementary School
18. Farjardo Elementary School
19. CalTrans
20. Rowland Heights County Park
21. Rowland High School
22. Killian Elementary School
23. Walnut Elementary School
24. WVUSD Admin. Service Center
25. Diamond Bar Golf Course
26. Gateway Corporate Center (multiple)
27. Walnut Ridge LMD & Morningside Park
28. Sunshine Growers Nursery
29. Temple Avenue Medians
30. Valley Business Center
31. Lemon Avenue Medians
32. Fajardo Park
33. Walnut Ranch Park
34. Westhoff Elementary School
35. Grand Crossing (multiple)
36. SCAQMD Headquarters
37. Recycled Water Reservoirs
38. First Chinese Baptist Church
39. Valley Blvd. Medians
40. Rodeo Ridge Estates
41. Brookside Equestrian Center
42. Grand Avenue Medians
43. Burger King Restaurant
44. Business Parkway Center (multiple)
45. Catellus Commerce Center (multiple)
46. WVWD Offices
47. Dreyers Grand Ice Cream
48. Walnut Hills Village Shopping Center
49. Golden Springs Dr. Medians
50. West Golden Springs Dr. Medians
51. Calvary Chapel Church
52. Rowland Heights Comm. Church
53. Fairway Medians
54. Sysco
55. Del Paso High School
56. Circuit City
57. Metrolink Station
58. Countryside Suites
59. Diamond Crest HOA
60. Norm Ashley Park
61. Waterfall Estates
62. Koll Plantation (multiple)
63. McDonalds Restaurant
64. Prudential Insurance
65. Cross School of Education
66. Bank of the West
67. Gym/Teen Center
68. Harvard Estates
69. Wind River HOA
70. Walnut Nazarene Church
71. Holiday Inn Express
72. Lemon Avenue Investments
73. Everbright Management
74. V-Tec Automotive
75. ExtraSpace Storage
76. Latter-Day Saints Church
78. Magnolia Homes
79. Signal-Walnut Partnership
80. Brea Cyn./Old Ranch Rd. Med.
81. CLT Computers
82. Tri Net Court
83. Walnut City Hall
84. Walnut Senior Center
85. Community Day Sch./Kandyland
86. Sentous Valley LLC
87. Southcoast Cabinets
88. Shell Station
89. Hing Wa Lee Plaza
90. Sy Development Condos
91. Industry East Land LLC
92. Valley Blvd. Medians
93. Kohl's Center
94. Target
95. Christian Chapel of Walnut Valley
96. Home Depot
97. FedEx
98. Grand Avenue Venture
99. Currier Road Development
100. Chili's Restaurant
101. Brea Cyn/Currier median
102. Ybarra Elementary School
103. Bell Memorial Church

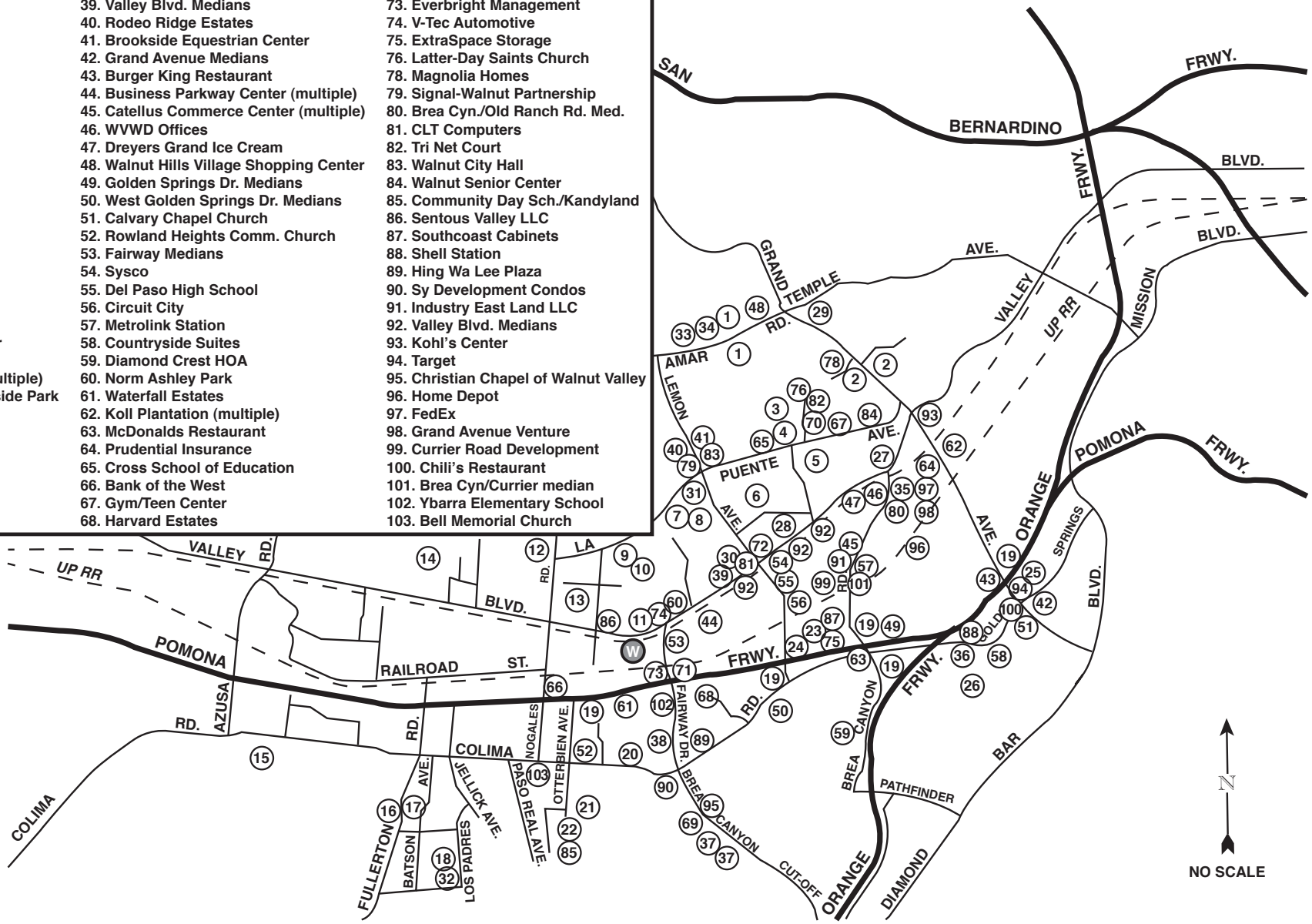


TABLE 13
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
WALNUT VALLEY WATER DISTRICT
(PAGE 1 OF 4)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Suzanne Park (Walnut)	Oct 80	12	L	0.014	16
Suzanne Middle School (Walnut)	May 86	4	AF,L	0.012	13
Walnut High School (Walnut)	May 86	15	AF,L	0.019	21
Vejar School (Walnut)	May 86	3	AF,L	0.010	11
Morris School (Walnut)	May 86	9	AF,L	0.009	10
Snow Creek Park (Walnut)	May 86	7	L	0.011	12
Snow Creek Landscape Maintenance Dist. (Walnut)	May 86	13.5	L	0.036	41
Lemon Creek Park (Walnut)	May 86	5	L	0.005	6
Friendship Park (West Covina)	May 86	6	L	0.007	8
Hollingworth School (West Covina)	May 86	3	AF,L	0.007	8
Lanesboro Park (West Covina)	May 86	2	L	0.007	7
Rincon Middle School (West Covina)	May 86	3	AF,L	0.008	9
Route 57 and 60 Freeways (Rowland Heights)	May 86	19.7	L	0.035	39
Rowland Heights Reg. Co. Park (Rowland Heights)	May 86	11	L	0.012	13
Rowland High School (Rowland Heights)	May 86	9	AF,L	0.020	23
Killian Elementary School (Rowland Heights)	May 86	3	AF,L	0.005	6
Walnut Elementary School (Walnut)	May 86	4	AF,L	0.001	1
WUSD Administrative Service Center (Walnut)	May 86	4	L	0.002	3
Walnut Ranch Park (Walnut)	Jun 86	26	L	0.019	22
Amar Road greenbelt (Walnut)	Jun 86	16	L	0.015	17
Diamond Bar Golf Course (Diamond Bar)	Jul 86	174	L,P	0.165	185
Walnut Ridge Landscape Maintenance Dist. (Walnut)	Mar 87	25.5	L	0.030	34
Morningside Park (Walnut)	Mar 87	4	L	0.004	4
Gateway Corporate Center (Diamond Bar)	Jun 87	45	L	0.045	51
20659 E. Valley Blvd. (Walnut)	May 88	7	O	0.0001	0.01
Westhoff Elementary School (Walnut)	Sep 88	8	AF,L	0.006	6
Temple Avenue greenbelt (Walnut)	Jan 90	1	L	0.001	1
Walnut Tech Business Center (Walnut)	Apr 90	1	L	0.002	2
Lemon Avenue greenbelt (Walnut)	Sep 91	4.3	L	0.006	7
South Coast AQMD Headquarters (Diamond Bar)	Nov 91	2	L	0.005	5
WVWD reservoir (Diamond Bar)	May 92	1	L	0.005	6
First Chinese Baptist Church (Walnut)	Dec 92	0.3	L	0.002	2
Burger King restaurant (Diamond Bar)	Oct 93	0.2	L	0.001	1
Majestic Mgmt., 19850 E. Business Pkwy (Walnut)	Nov 93	0.8	L	0.004	4
General Electric, 19705 E. Business Pkwy (Walnut)	Nov 93	1.6	L	0.006	7
Rodeo Ridge Estates (Walnut)	Dec 93	6.3	L	0.005	6
Golden Springs Drive medians (Diamond Bar)	Jan 94	1.3	L	0.005	6
Walnut Hills Village Shopping Center (Walnut)	Mar 94	2.4	L	0.004	5
Brookside Equestrian Center (Walnut)	Aug 94	13.6	L	0.003	3
WVWD Office (Walnut)	Oct 94	0.2	L	0.002	2
Cattelus Development (Walnut)	Oct 94	18.9	L	0.016	18
Circuit City, 501 Cheryl Lane (Walnut)	Oct 94	1	L	0.007	8
Dreyer's Grand Ice Cream, 351 Cheryl Lane (Walnut)	Oct 94	0.6	L	0.003	3
Metrolink Station (Industry)	Nov 94	0.6	L	0.002	3
Del Paso High School (Walnut)	Jan 95	3	AF,L	0.003	3
Dow Corning, 20832 Currier Road (Walnut)	Jan 95	0.1	L	0.0001	0.1
Circuit City Headquarters, Currier/Lemon (Walnut)	Apr 95	1.1	L	0.005	6
Sysco Food Service, 20701 Currier Road (Walnut)	Apr 95	2.3	L	0.012	13
Tung Hsin Trading, 20420 E. Business Pkwy (Walnut)	Apr 95	0.8	L	0.003	4
Amergence Tech. Inc., 20480 E. Bus. Pkwy (Walnut)	Apr 95	0.9	L	0.003	3
Dura Freight Lines, 515-525 S. Lemon (Walnut)	Apr 95	0.5	L	0.001	1
S/W-S/E Corner Lemon/Bus. Parkway (Walnut)	Apr 95	0.2	L	0.004	4
Dura Freight Lines , 20275 Bus. Parkway (Walnut)	Apr 95	1.3	L	0.003	3

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

TABLE 13
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
WALNUT VALLEY WATER DISTRICT
(PAGE 2 OF 4)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Coaster Co. of America, 20300 Bus. Parkway (Walnut)	Apr 95	0.7	L	0.003	3
Dura Freight Lines, 20405 Bus. Parkway (Walnut)	Apr 95	1	L	0.003	3
Dura Freight Lines, 20595 E. Business Pkwy (Walnut)	Apr 95	0.8	L	0.001	2
Dura Freight Lines, 20445 E. Business Pkwy (Walnut)	Apr 95	0.7	L	0.001	2
820 Fairway Drive medians (Industry)	Jun 95	0.1	L	0.002	2
Spencer N Enterprises, Inc., 435 S. Lemon (Walnut)	Jun 95	0.5	L	0.001	1
General Electric, 19805 E Business Pkwy (Walnut)	Jun 95	1.1	L	0.005	6
Menlo Logistics, 20002 E. Business Pkwy (Walnut)	Jun 95	4	L	0.006	7
General Electric, 20005 E. Business Parkway (Walnut)	Jun 95	6.7	L	0.010	11
Ping Ting Hsu, 20701 Currier Road (Walnut)	Aug 96	0.1	L	0.001	1
Lawrence Allen & Assoc., 20822 Currier Rd. (Walnut)	Oct 96	0.1	L	0.0001	0.1
Fairway Business Cntr., 19700 Bus. Parkway (Walnut)	Nov 96	0.4	L	0.002	2
Rowland Heights Christian Church (Rowland Hghts.)	Feb 97	0.5	L	0.001	1
Viewsonic, 510 Cheryl/455 Brea Canyon (Walnut)	Jul 97	1.8	L	0.011	12
Countryside Suites (Diamond Bar)	Mar 98	1.4	L	0.003	3
Diamond Crest Homeowners Assn. (Diamond Bar)	Oct 98	14	L	0.018	20
Norm Ashley Park (Walnut)	Nov 98	0.2	L	0.0005	1
Play Hut, 368 Cheryl Lane (Walnut)	Nov 98	0.8	L	0.003	3
Waterfall Estates (Rowland Heights)	Dec 98	1.2	L	0.004	5
Calvary Chapel (Diamond Bar)	Apr 99	1	L	0.014	16
Hi-Tek Warehouse, 20851 Currier Road (Walnut)	Jun 99	0.2	L	0.001	1
Campus Group Inc, 319 Cheryl Road (Walnut)	Jul 99	0.1	L	0	0
Wind River Homeowners Assn. (Rowland Heights)	Jul 99	12.6	L	0.031	35
L.A. Fitness Inter., 20801 Golden Springs (Industry)	Sep 99	1.2	L	0.001	2
Comtop Enterprises, 268 Benton Court (Industry)	Sep 99	0.3	L	0.001	1
Gemini Foods Corp., 251 Benton Court (Industry)	Sep 99	0.6	L	0.001	1
Tri-Net Technology, 21709 Ferraro Parkway (Industry)	Sep 99	0.3	L	0.001	1
Hupa International, 21717 Ferraro Parkway (Industry)	Oct 99	0.3	L	0.0003	0.3
Nu-Health Products, 20875-85-95 Currier (Walnut)	Oct 99	0.1	L	0	0
Lemon Avenue medians (Industry)	Dec 99	0.1	L	0.0003	0.4
Prudential Insurance Co., 21558 Ferraro. (Walnut)	Jan 00	3.5	L	0.008	9
McDonald's Restaurant (Diamond Bar)	Mar 00	0.1	L	0.001	1
J&L Footwear, 250 Benton Court (Industry)	Jul 00	0.6	L	0.001	1
Markwins Inter. Corp., 22067 Ferraro (Industry)	Nov 00	1.9	L	0.004	4
Lee Wang LLC, 21901 Ferraro Parkway (Industry)	Nov 00	2	L	0.005	6
Sun Yin USA, 280 Maclin Court (Industry)	Nov 00	0.8	L	0.001	2
SL Investment Group LLC, 218 Maclin Ct. (Industry)	Nov 00	1.5	L	0.002	2
Morrow Meadows, 231 Benton Court (Industry)	Apr 01	0.9	L	0.002	2
The Cross Schools of Education (Walnut)	May 01	0.6	AF,L	0.001	1
Bank of the West (Rowland Heights)	Sep 01	0.1	L	0.0004	0.4
Gym/Teen Center (Walnut)	Sep 01	0.6	L	0.001	2
Yellow Box Corp., 19835 Walnut Drive (Walnut)	Dec 01	0.3	L	0.002	2
Harvard Estates (Rowland Heights)	Dec 01	2	L	0.002	3
Walnut Nazarene Church (Walnut)	Feb 02	0.8	L	0.0003	0.3
Majestic Mgmt., 168-188 Brea Canyon Rd. (Walnut)	Apr 02	0.6	L	0.002	2
Synnex, 108-118 Brea Canyon Rd. (Walnut)	Apr 02	0.7	L	0.002	3
Majestic Management, 108-288 Mayo Drive (Walnut)	Apr 02	0.1	L	0.005	5
Holiday Inn Express (Walnut)	May 02	0.4	L	0.002	2
Lemon Avenue Investments (Walnut)	Jun 02	0.6	L	0.002	3
Magnolia at Snow Creek (Walnut)	Jul 02	5.4	L	0.018	21
Everbright Management, 1163 Fairway (Industry)	Sep 02	0.6	L	0.003	4
Everbright Management, 1169 Fairway (Industry)	Sep 02	0.2	L	0.001	1
Kelly Paper, 228 Brea Canyon Road (Walnut)	Sep 02	1.2	L	0.0004	0.4

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

TABLE 13
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
WALNUT VALLEY WATER DISTRICT
(PAGE 3 OF 4)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
V-Tec Automotive, 19677 Valley Blvd. (Walnut)	Sep 02	0.1	L	0.0001	0.2
Grand and Valley landscaping (Walnut)	Sep 02	0.1	L	0.005	6
Extra Space Storage (Walnut)	Oct 02	0.8	L	0.001	1
Latter Days Saints Church (Walnut)	Oct 02	0.9	L	0.003	3
Nogales and Killian landscaping (Rowland Heights)	Oct 02	0.1	L	0.001	1
A&R West Family LLC, 20855 Golden Sprgs (D. Bar)	Nov 02	0.2	L	0.001	1
Brea Canyon Rd./Old Ranch Road medians (Industry)	May 03	0.1	L	0.0002	0.2
CLT Computers, Inc., 20153 Paseo del Prado (Walnut)	May 03	0.6	L	0.002	2
Autosmart Intl., 19885 Harrison Ave. (Industry)	Aug 03	0.2	L	0.001	1
Broadway.com, 19715 Harrison Ave. (Industry)	Aug 03	0.5	L	0.002	2
Bayharbor-Harrison Assn., 19901 Harrison (Industry)	Aug 03	0.8	L	0.003	4
J Pack International, 19789 Harrison Ave. (Industry)	Aug 03	0.5	L	0.001	1
Ziprint Image Corp., 19805 Harrison Ave. (Industry)	Aug 03	0.2	L	0.001	1
San Malone Enterprises, 19865 Harrison (Industry)	Aug 03	0.3	L	0.002	3
Shinetec Group, Inc., 19685 Harrison Ave. (Industry)	Aug 03	0.4	L	0.001	1
Majestic Realty, Grand Ave./Village Staples (Walnut)	Aug 03	1.6	L	0.005	6
Orange Grove Services, Lemon/La Puente (Walnut)	Sep 03	0.4	L	0.003	3
Max Property LLC, 21401 Ferraro Pkwy. (Industry)	Sep 03	0.7	L	0.004	5
NP 21301 Ferraro Pkwy., 21301 Ferraro (Industry)	Sep 03	0.8	L	0.002	2
568 TriNet Court (Walnut)	Oct 03	0.3	L	0.001	1
Walnut City Hall (Walnut)	Dec 03	0.6	L	0.001	1
Walnut Senior Center (Walnut)	Dec 03	0.5	L	0.001	1
Hill's Pet Nutrition, 318 Brea Canyon Rd. (Walnut)	Dec 03	2.6	L	0.006	7
Young Hoon Cho, 1709 Nogales St. (Rowland Heights)	Mar 04	0.1	L	0.0003	0.4
Shell Station, 21103 Golden Springs Dr. (Diamond Bar)	Mar 04	0.1	L	0.0003	0.4
Ferraro/Grand East ramp (Industry)	Apr 04	3.8	L	0.005	6
Hing Wa Lee Plaza, 1569 Fairway Dr. (Walnut)	May 04	0.1	L	0.001	1
Southcoast Cabinet, 20625 Lycoming St. (Walnut)	Jun 04	0.3	L	0.001	1
APL Logistics, 408 Brea Canyon Rd. (Walnut)	Jun 04	2.1	L	0.006	7
Adnoff Family Trust, 20801 Currier Rd. (Walnut)	Jul 04	0.1	L	0.001	1
Sentous Valley LLC, 2889 Valley Blvd. (Walnut)	Aug 04	0.1	L	0.0004	0.4
Community Day School (Walnut)	Nov 04	0.1	AF,L	0.0004	0.5
Majestic Mgmt., Bldg. 25 on Mayo Dr. (Walnut)	Jan 05	0.1	L	0.0003	0.3
Sy Develop. condos, 20118-20138 Colima, (Walnut)	Jun 05	0.1	L	0.00001	0.01
N/E corner Cheryl Lane/Baker Parkway (Industry)	Aug 05	3.3	L	0.014	16
Jakk's Pacific, Inc. 21733-21749 Baker (Industry)	Aug 05	1.2	L	0.004	4
20813 Valley Blvd. medians (Walnut)	Sep 05	0.4	L	0.001	1
20265 Valley Blvd. medians (Walnut)	Sep 05	0.4	L	0.001	1
19849 Valley Blvd. medians (Walnut)	Sep 05	0.4	L	0.001	1
Kohl's Center (Walnut)	Sep 05	2	L	0.009	10
Phoenix Private Schools (Rowland Heights)	Dec 05	0.1	AF,L	0.0002	0.2
The Home Depot, 21535-21651 Baker (Industry)	Jan 06	2.8	L	0.009	10
Industry East Land LLC, 21415 Baker (Industry)	Jan 06	2.3	L	0.006	7
Charles Hailong Cui, 350 Cheryl Lane (Walnut)	Apr 06	0.7	L	0.004	5
Fairway median@ Brea Canyon (Walnut)	Jun 06	0.3	L	0.001	1
Grand Avenue Crossing (Industry)	Jul 06	18.5	L	0.019	21
22002 Valley Blvd. (Industry)	Jul 06	1.6	L	0.003	4
Christian Chapel of Walnut Valley (Walnut)	Aug 06	2.2	L	0.006	6
Target Store T-2179, 747 Grand Ave. (Walnut)	Sep 06	3.9	L	0.006	6
Leg Avenue, 19601 E. Walnut Dr. (Walnut)	Oct 06	0.5	L	0.003	3
Harold M. Pitman Co., 21908-21958 Baker (Industry)	Jan 07	0.8	L	0.002	2
Williams-Sonoma, 21508-21662 Baker (Industry)	Apr 07	4.8	L	0.012	14
FedEx Ground, 200 Old Ranch Road (Walnut)	May 07	28	L	0.012	13

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

TABLE 13
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
WALNUT VALLEY WATER DISTRICT
(PAGE 4 OF 4)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Currier Road Devel. Inc., 20819 Currier Rd. (Walnut)	May 07	0.3	L	0.001	1
Williams-Sonoma, 21700 Baker (Industry)	Aug 07	2	L	0.006	6
21350 Valley Blvd. (Industry)	Feb 08	0.4	L	0.001	1
Grand Avenue Venture, 21508 Ferraro Pkwy (Walnut)	Apr 08	3.5	L	0.003	4
Grand Avenue/Baker Parkway medians (Industry)	May 08	6.7	L	0.013	14
Majestic Management, 21530-21590 Baker (Industry)	May 08	2	L	0.008	9
Gomez Upholstery, 19935 Valley Blvd. (Walnut)	Jul 08	2	L	0	0
Susann Sutseng Lee, 1335-1337 Otterbein (Row. Hts.)	Jul 08	0.1	L	0.0004	0.4
Golden Springs Plaza (20657 Golden Sprgs (Dia. Bar)	Aug 08	0.4	L	0.002	2
Chili's Restaurant, Golden Springs Dr. (Diamond Bar)	Sep 08	0.01	L	0.001	1
Majestic Management, 21808 Garcia Ln. (Industry)	Sep 08	0.5	L	0.001	2
Majestic Management, 21858 Garcia Ln. (Industry)	Sep 08	0.4	L	0.001	2
Majestic Management, 21912 Garcia Ln. (Industry)	Sep 08	0.3	L	0.001	1
Majestic Management, 21760-21788 Garcia (Industry)	Sep 08	0.4	L	0.001	2
CFT Development, Golden Springs Dr. (Diamond Bar)	Oct 08	0.01	L	0.001	1
Jenny Hsieh, 20125 Valley Blvd. (Walnut)	Nov 08	0.03	L	0.00003	0.03
Brea Canyon Rd./Currier Road median (Walnut)	Feb 09	2	L	0.005	5
Cardinal Capital Partners, Currier/Lemon (Walnut)	Mar 09	2.5	L	0	0
Family Property Holdings, 20888 Amar Rd. (Walnut)	May 09	0.04	L	0.0004	0.5
KW Global Inc., 293 Brea Canyon Drive (Walnut)	May 09	0.3	L	0.001	2
Light of America, Inc. (20722 Currier Rd.) (Walnut)	Sep 09	0.1	L	0.0003	0.3
Ybarra Elementary School (Rowland Heights)	Sep 09	5.6	AF,L	0.008	9
Donald Miller, 19803 Valley (Walnut)	Sep 10	0.1	L	0.0001	0.3
Bell Memorial Church, 1747 Nogales (Rowland Hts.)	Dec 10	0.3	L	0.0002	0.3
TOTALS		**708.5**		**1.043**	**1,168**

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

therefore, produced a total of 67.43 MGD (75,555 AFY) of coagulated, filtered, disinfected tertiary recycled water (16.8% of the effluent produced in the JOS), a 1.7% decrease from the preceding fiscal year.

Recycled water quality from both the east and west sides of the plant for FY 10-11 is presented in Tables B-4 and B-5, respectively, of Appendix B. Of the total amount of recycled water produced, 31.895 MGD (35,740 AFY), or 47.3% of the plant's combined production, was actively reused, a 27.5% decrease from the preceding fiscal year. This increase was mainly due to above average rainfall that greatly reduced the amount of recycled water used for groundwater replenishment during this fiscal year.

The remaining effluent was discharged to the concrete-lined portion of the San Gabriel River below Firestone Boulevard where it flows to the ocean. Recycled water from this plant is used at 101 sites (not including recharge) shown in Figure 13 and listed in Table 14. Use of recycled water from this facility is permitted under LARWQCB Order Nos. 87-50 and 97-072 for direct, non-potable applications, and Nos. 91-100 and R4-2009-0048 for groundwater replenishment.

SAN JOSE CREEK WRP FACTS

Plant capacity:	100 MGD
Water produced:	67.43 MGD 75,555 AFY 1.7% FY decrease
FY10-11 O&M:	$248/AF (east) $221/AF (west)
Water reused:	31.895 MGD 35,740 AFY 27.5% FY decrease 47.3% of production
Delivery systems:	7 300,850 ft. of pipe
No. of reuse sites:	101 2,881.3 acres

2.5.1 Water Replenishment District of Southern California

The great majority (87.8%) of recycled water actively used from the San Jose Creek WRP goes to recharge the Central Basin groundwater aquifer, which in FY 10-11 was 28.015 MGD (31,393 AFY), a 29.4% decrease from the preceding fiscal year and 41.5% of the recycled water produced by this plant. In FY 10-11, 20.467 MGD (22,935 AFY) was directed either to the San Gabriel Coastal Spreading Grounds or to the Rio Hondo Spreading Grounds via the plant's discharge point from the east side to the San Jose Creek channel (88.9%). Another 0.108 MGD (121 AFY), or 0.5%, was discharged from the west side into the San Gabriel River upstream of the Zone 1 Ditch. Deliveries of recycled through the plant's 66-inch outfall pipe directly to the San Gabriel Coastal Spreading Grounds turnout resumed in March 2009 as the diversion gate began to be incrementally opened to the spreading grounds. This was done slowly as to determine the impact on non-native fish that have colonized the lined portion of the San Gabriel River downstream of the Outfall's discharge point. The partial opening of the diversion gate will allow for much greater amounts of recycled water to be delivered directly to the spreading grounds for recharge in the future. However, only 2.444 MGD (2,738 AFY), or 10.6%, was able to be recharged directly during this fiscal year, as excess storm water being conserved from the river prevented the release of recycled water from the Outfall.

Of the total amount of recycled water delivered from the San Jose Creek WRP, 6.776 MGD (7,593 AFY), or 23.3%, went to the Rio Hondo Spreading Grounds and 21.775 MGD (24,400 AFY), or 74.9%, went to the San Gabriel Coastal Spreading Grounds. Another 0.536 MGD (601 AFY), or 1.8% of the recycled water delivered, was bypassed around the spreading grounds and lost to the ocean during December 2010 and January and March 2011. Any discrepancy between the total amount discharged and the totals recharged and bypassed is attributed to differences in metering between the Sanitation Districts and the LACDPW.

The groundwater recharge operation with recycled water had been limited by its 1991 permit to a three-year running total of 150,000 AFY, with no more than 35% recycled water being recharged (with maximums of

FIGURE 13
SAN JOSE CREEK WRP REUSE SITES

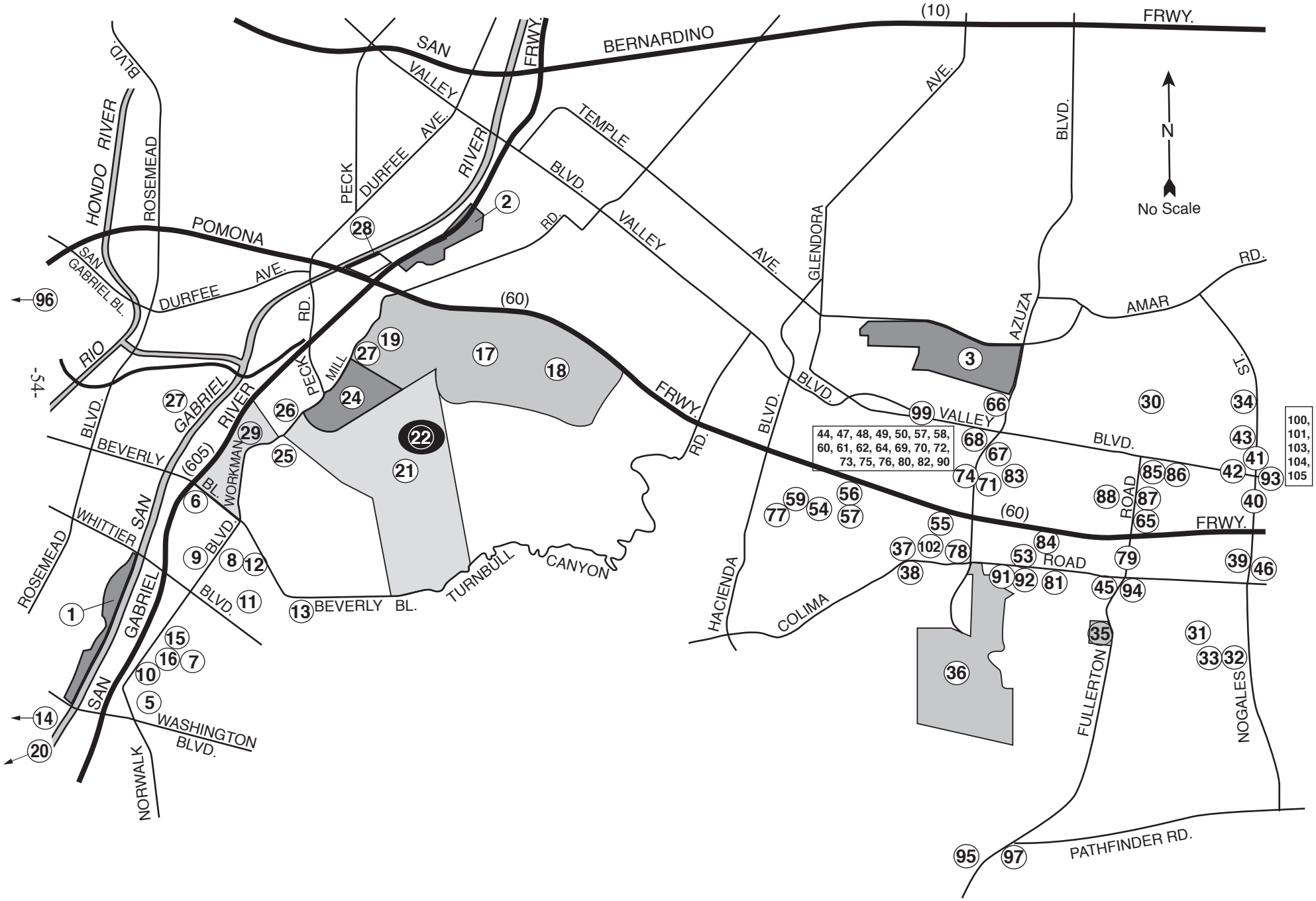


TABLE 14
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
SAN JOSE CREEK WRP
(PAGE 1 OF 2)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Water Replenishment District (1)	Jun 71	--	R	28.015	33,393
California Country Club (Industry) (2)	Jun 78	120	L,P	0.378	423
Industry Hills Recreation Area (Industry) (3)	Aug 83	600	L,P	0.854	957
Field, S/W corner Norwalk/Telegraph (S.F. Spgs.) (4)	Aug 94	5.2	L	0.010	11
Washington Elementary School (Whittier) (5)	Sep 94	5	AF,L	0.007	3
605 Freeway at Beverly (Whittier) (6)	Sep 94	30	L	0.044	50
Sorenson Elementary School (Whittier) (7)	Oct 94	4	AF,L	0.006	7
Palm Park West (Whittier) (8)	Nov 94	5	L	0.008	8
Orange Grove School (Whittier) (9)	Apr 95	6.6	AF,L	0.004	5
Katherine Edwards Middle School (Whittier) (10)	Sep 95	19	AF,L	0.022	24
Longfellow Elementary School (Whittier) (11)	Sep 95	4.5	AF,L	0.004	5
Walter Dexter Middle School (Whittier) (12)	Sep 95	15.5	AF,L	0.007	8
Founders Memorial Park (Whittier) (13)	Jan 96	4	L	0.008	9
Salt Lake Municipal Park (Huntington Park) (14)	Apr 96	20.9	L	0.040	45
Sorenson Park (Whittier) (15)	May 96	10.7	L	0.016	18
Sorenson Library (Whittier) (16)	May 96	0.4	L	0	0
Puente Hills Landfill irrigation (Industry) (17)	Nov 97	320	L	0.764	856
Puente Hills Landfill dust control (Industry) (18)	Nov 97	130	I	0.133	149
Puente Hills Gas-to-Energy Facility (Industry) (19)	Nov 97	--	I	0.607	680
Lugo Park (Cudahy) (20)	Apr 98	7	L	0.005	5
Rose Hills Memorial Park – upper area (Whittier) (21)	Jun 98	298	L	0.373	418
River Ridge Golf Course (Pico Rivera) (23)	Jul 02	21.3	L	0.021	24
Rio Hondo College (Whittier) (24)	Jun 03	85	AF,L	0.023	26
Mill Elementary School (Whittier) (25)	Jun 03	15	AF,L	0.008	9
Gateway Pointe (Whittier) (26)	Jan 05	8	L	0.016	18
Puente Hill Materials Recovery Facility (Industry) (27)	Feb 05	2.4	L	0.005	5
LA Sanchez Nursery (Industry) (28)	Apr 06	5	O	0.010	12
Rose Hills Memorial Park – lower area (Whittier) (29)	Aug 06	275	L	0.438	491
Sunshine Park (L.A. County) (30)	Jul 09 (May 86)	4	L	0.002	3
Rowland Elementary School (Rowland Hts.) (31)	Jul 09 (May 86)	3	AF,L	0.002	2
Farjardo School (Rowland Heights) (32)	Jul 09 (May 86)	4	AF,L	0.0005	1
Farjardo Park (Rowland Heights) (33)	Jul 09 (May 86)	4	L	0.001	2
Nogales High School (L.A. Co.) (34)	Jul 09 (Jun 86)	11	AF,L	0.005	6
Queen of Heaven Cemetery (Rowland Hts.) (35)	Jul 09 (Jun 86)	35	L	0.003	3
Schabarum Regional County Park (L.A. Co.) (36)	Jul 09 (Sep 86)	233	L	0.020	22
Pepperbrook Park (Hacienda Heights) (37)	Jul 09	4.4	L	0.002	2
Countrywood Park (Hacienda Heights) (38)	Jul 09	5.4	L	0.002	2
Rowland Heights Golf Center (Rowland Heights) (39)	Jul 09	8	L	0.002	3
Medians at 755 Nogales (Industry) (40)	Jul 09	0.1	L	0.0001	0.1
Medians at 4115-1/2 Nogales (West Covina) (41)	Jul 09	0.1	L	0.001	2
Medians at 2654-1/2 Valley (West Covina) (42)	Jul 09	0.2	L	0.00003	0.03
Bu Sha Temple, 4111 Nogales (West Covina) (43)	Jul 09	0.5	L	0.0001	0.1
Megan Racing, 788 Phillips (Industry) (44)	Jul 09	0.1	L	0.0004	0.4
JJ Plaza, 18253 Colima (Rowland Heights) (45)	Jul 09	0.1	L	0.0001	0.1
New World RTCI-LP, 18958 Daisetta (Row. Hts.) (46)	Jul 09	0.1	L	0.00001	0.02
Battery Technology, 16651 Johnson (Industry) (47)	Jul 09	0.1	L	0.0001	0.1
FTH Group Inc., 16685 Johnson (Industry) (48)	Jul 09	0.1	L	0.0001	0.1
Ancillary Provider 16664 Johnson (Industry) (49)	Jul 09	0.1	L	0.0001	0.1
Ancillary Provider 16666 Johnson (Industry) (50)	Jul 09	0.2	L	0.0002	0.3
Pan American, 16610 Gale Ave. (Industry) (51)	Jul 09	0.2	L	0.0002	0.2
Blue Pacific, 1354 Marion Ct. (Industry) (52)	Jul 09	0.2	L	0.0003	0.3
Romano's Macaroni Grill, 17603 Colima (R. Hts.) (53)	Jul 09	0.1	L	0.001	1
Acosta Growers, 16412 Wedgeworth Dr. (Industry) (54)	Jul 09	5	O	0.001	1

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

TABLE 14
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
SAN JOSE CREEK WRP
(PAGE 2 OF 2)

Wedgeworth Elementary School (Hacienda Hts.) (55)	Aug 09	2.5	AF,L	0.001	1
Wilson High School (Hacienda Heights) (56)	Aug 09	18.3	AF,L	0.006	7
Bixby Elementary School (Hacienda Heights) (57)	Sep 09	6.1	AF,L	0.002	2
Jade Fashion, 1350 Bixby (Industry) (58)	Sep 09	0.1	L	0.0002	0.3
Gutierrez Nursery, 16411 Wedgeworth (Industry) (59)	Sep 09	4	O	0.001	1
Frank Raper, 1215 Bixby (Industry) (60)	Dec 09	0.1	L	0.0001	0.2
Laido International, 16710-12 Johnson (Industry) (61)	Dec 09	0.1	L	0.0002	0.2
Bolt Products, 16725 Johnson Dr. (Industry) (62)	Dec 09	0.1	L	0.0001	0.1
Ily Enterprise, 783 Phillips (Industry) (63)	Jan 10	0.1	L	0.0003	0.3
Superior Profiles, 1325 Bixby (Industry) (64)	Jan 10	0.2	L	0.0002	0.2
60 Fwy., Countrywood & Fullerton (Industry) (65)	Jan 10	5	L	0.003	3
Camacho Strawberries (Industry) (66)	Jan 10	3	O	0.0001	0.1
Advanced Media, 881 Azusa (Industry) (67)	Jan 10	0.1	L	0.001	1
East Group Prop., 855 Anaheim-Puente (Industry) (68)	Mar 10	0.6	L	0.0003	0.4
So.Cal. Air Condition, 16950 Chestnut (Industry) (69)	Mar 10	2	L	0.0003	0.3
USACD, 17101 Chestnut (Industry) (70)	Mar 10	0.3	L	0.0003	0.3
Azusa Blvd Medians (Industry) (71)	Mar 10	0.2	L	0.0001	0.1
Acosta Growers, 17101 Chestnut (Industry) (72)	Mar 10	2.4	O	0.0002	0.2
L.A. Co. ISD bldg., 16610 Chestnut (Industry) (73)	Apr 10	0.5	L	0.0003	0.3
Azusa Property Co., 885 Azusa (Industry) (74)	Apr 10	0.2	L	0.0002	0.2
Golden West Footwear, 16750 Chestnut (Industry) (75)	Apr 10	0.3	L	0.0002	0.2
Teledyne Instruments, 16830 Chestnut (Industry) (76)	Apr 10	0.4	L	0.0004	0.4
Medians, 18927 Daisetta (Rowland Heights) (77)	Apr 10	0.2	L	0.0001	0.1
Colima Medians (L.A. County) (78)	Apr 10	0.1	L	0.0002	0.2
Medians, 1442 Fullerton (Industry) (79)	Apr 10	0.3	L	0.00004	0.05
Teledyne Picco, 16800 Chestnut (Industry) (80)	May 10	0.4	L	0.0003	0.3
Hou Yi Mao Nursery, 18002 Colima (Row. Hts.) (81)	May 10	1.3	O	0.0002	0.3
East Group Prop., 16700 Chestnut (Industry) (82)	Jun 10	0.6	L	0.001	1
Pro Motion Distribution, 883 Azusa (Industry) (83)	Jun 10	0.1	L	0.0001	0.1
New Age Kaleidoscope, 7 Colima (Industry) (84)	Jun 10	0.6	L	0.001	1
Min Maw Intl. Inc., 18350 San Jose (Industry) (85)	Jun 10	0.7	L	0.001	1
Hot Topic, 18350 San Jose Ave. (Industry) (86)	Jul 10	0.6	L	0.001	1
FedEx, 18305 San Jose Ave. (Industry) (87)	Jul 10	0.6	L	0.001	1
Hudd Distribution, 18215 Rowland St. (Industry) (88)	Sep 10	0.6	L	0.0003	0.4
New Age Kaleidoscope, 5 Stoner Creek (Industry) (89)	Oct 10	1.4	L	0.0003	0.4
Perrin Manufacturing, 1020 Bixby (Industry) (90)	Oct 10	0.1	L	0.0001	0.2
Centro Watt Operating, 17518A Colima (Industry) (91)	Oct 10	0.4	L	0.00003	0.03
Centro Watt Operating, 17414 Colima (Industry) (92)	Oct 10	0.5	L	0.0001	0.1
717 Nogales LLC, 717 Nogales (Industry) (93)	Oct 10	0.5	L	0.0001	0.1
Walgreens, 18308 Colima (Industry) (94)	Dec 10	0.1	L	0.0001	0.1
RWD Office, 3021 S. Fullerton (Industry) (95)	Dec 10	0.3	L	0.0001	0.1
Pathfinder Park (Rowland Heights) (Industry) (97)	May 11	29	L	0.00001	0.01
USGVMWD site, 401 Nogales St. (Industry) (98)	May 11	0.5	L	0.0000003	0.0003
East Group Prop., 18551 Arenth Ave. (Industry) (100)	May 11	0.7	L	0.000003	0.003
717 Nogales LLC, 18961 Arenth Ave. (Industry) (101)	May 11	0.5	L	0.000003	0.003
Kimco Realty, 17100 Colima Rd. (Industry) (102)	May 11	3	L	0.000003	0.003
Acme Trading Group, 18501 Arenth (Industry) (103)	May 11	0.9	L	0.00001	0.01
Third Party Enterprises, 18501 Arenth (Industry) (104)	May 11	0.6	L	0.000001	0.001
Floria International 18701 Arenth (Industry) (105)	May 11	0.4	L	0.000003	0.003
TOTALS		**2,881.3**		**31.895**	**35,740**

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

60,000 AFY and 50% in any one year). To allow the use of more recycled water, WRD requested that the LARWQCB revise the 1991 recharge permit to eliminate the existing annual and three-year total quantity limits (60,000 and 150,000 AF, respectively), and rely on a running 5-year average recycled water contribution of 35%. This permit modification was supported by State DPH staff and was adopted by the LARWQCB in April 2009. Sampling and analysis for TOC at the spreading grounds shallow monitoring wells has been increased from bimonthly to weekly during the first year of operation. Assuming there is sufficient dilution water, this change would allow approximately 5,000 AFY more of recycled water to be recharged.

2.5.2 City of Industry

In August 1983, the City of Industry completed a recycled water distribution system to serve the Industry Hills Recreation and Conservation Area. This system includes a 7,100 gpm pump station at the San Jose Creek WRP, 36,960 feet of 36-inch pipe following the San Jose Creek Channel, and a 2 million gallon reservoir with a 3,400 gpm booster pump station at Anaheim-Puente Road. From this point, a 16-inch pipe with a second, 3,300 gpm booster pump station brings recycled water into the 600-acre reuse site for landscape irrigation of two 18-hole golf courses and an equestrian center, and as a source of supply for eight ornamental lakes and storage impoundments. During FY 10-11, 0.854 MGD (957 AFY), or 1.3% of recycled water produced at this plant, was delivered through a total of 44,350 feet of pipeline and used at this site, an 18.9% decrease from the preceding fiscal year. While no new sites were directly connected to the Industry distribution system, RWD did, however, continue connecting sites to its own extension off the Industry system throughout the fiscal year. This system is discussed in the following section.

2.5.3 Rowland Water District

In July 2009, RWD began recycled water deliveries through a new distribution system that branched off the City of Industry pipeline. In FY 10-11, RWD connected 18 new reuse sites to its distribution system: In July 2010, the landscaping around Hot Topic (18350 San Jose Ave.) and FedEx (18305 San Jose Ave.) was connected. In September 2010, the landscaping around Hudd Distribution (18215 Rowland St.) was connected. In October 2010, the landscaping around New Age Kaleidoscope (5 Stoner Creek Rd.), Perrin Manufacturing (1020 Bixby), Centro Watt Operating (17518A and 17414 Colima Rd.), and 717 Nogales LLC (717 Nogales) was connected. In December 2010, the landscaping around the Walgreens (18308 Colima Rd.) and the Rowland Water District Office (3021 S. Fullerton) was connected. In May, Pathfinder Park and the landscaping around the Upper San Gabriel Valley Municipal Water District (USGVMWD) site at 401 Nogales St., East Group Properties (18551 Arenth Ave.), 717 Nogales LLC (18961 Arenth Ave.), Kimco Realty (17100 Colima Rd.), Acme Trading Group (18501 Arenth Ave.), Third Party Enterprises (18501 Arenth Ave.), and Floria International Inc. (18701 Arenth Ave.) were connected.

During FY 10-11, RWD delivered 0.067 MGD (75 AFY), or 0.1% of the recycled water produced at the San Jose Creek WRP to 74 sites listed in Table 14 and shown in Figure 13. This was an 8.7% increase over the preceding fiscal year. RWD purchased the recycled water from the City of Industry, retailing it at 63% of its potable rate of $1,010.59/AF (for "Zone I" elevation), or $635.98/AF.

2.5.4 California Country Club

In June 1978, deliveries of recycled water began to this 120-acre golf course located directly across the San Jose Creek Channel from the San Jose Creek WRP. An 8-inch polypropylene line inside a 24-inch reinforced concrete pipe siphon under the channel delivers chlorinated recycled water from the plant's "foam spray" system to the golf course's 0.75-acre lake No. 2. The golf course irrigation system is supplied by two pumps that can deliver a maximum of 1,800 gallons per minute (gpm) of recycled water from the lake. During FY 10-

11, 0.378 MGD (423 AFY), or 0.6% of recycled water produced at this plant, was delivered to this site, a decrease of 10.2% from the preceding fiscal year.

2.5.5 San Gabriel Valley Water Company - LA Sanchez Nursery

This nursery has signed a lease with Los Angeles Department of Water and Power (LADWP) for the property immediately adjacent to San Jose Creek WRP West formerly occupied by Arbor, Chuy's, J&E's and Ortiz's nurseries. During FY 10-11, 0.010 MGD (12 AFY), or <0.02% of recycled water produced at this plant, was delivered to this site for the irrigation of ornamental plants for commercial resale. This was essentially the same amount that was delivered during the preceding fiscal year. Contract No. 3286 with the San Gabriel Valley Water Company (SGVWC) replaced the old contract for the sale of recycled water directly to this nursery's predecessor (Contract No. 2835) beginning in September 1994. SGVWC resold the recycled water to the nursery for $473.28/AF, a 47% discount from its corresponding potable water rate of $899.95/AF.

2.5.6 Central Basin Municipal Water District (Rio Hondo System)

CBMWD continues to develop its second regional distribution system to deliver an estimated 5,000 to 10,000 AFY of recycled water from the San Jose Creek WRP to sites in the upper portion of its service area in the cities of Montebello, Pico Rivera, Commerce, Cudahy, Huntington Park, Bell Gardens, Vernon, Santa Fe Springs, and Whittier. This project is patterned after the regional concept of the "Century Project" described previously in Section 2.3.4. Interconnections with the Century distribution system originating from the Los Coyotes WRP will allow for a looped system (once the western connection is completed, see Section 5.4.4) served by both treatment plants for additional reliability and system pressures. Both the Century and Rio Hondo distribution systems can be partially supplied with recycled water from either the Los Coyotes WRP or either side of the San Jose Creek WRP individually or in combination. However, for the sake of consistency, recycled water usage at the Rio Hondo facilities is reported in water reuse reports as coming from the San Jose Creek WRP, and at the Century facilities as coming from the Los Coyotes WRP, as there is no way to differentiate which reuse sites receive which recycled water. Recycled water is used at 15 sites shown in Figure 13 and listed in Table 14. A narrative description of the layout of the Rio Hondo recycled water distribution system is contained in Appendix H. The layout of the pipelines for both the Century and Rio Hondo distribution systems is shown in Figure 10.

During FY 10-11, CBMWD delivered 0.203 MGD (227 AFY), or 0.3% of the recycled water produced at this plant, through 95,000 feet of pipeline to six water purveyors (SGVWC and the cities of Whittier, Cudahy, Huntington Park, Pico Rivera, and Santa Fe Springs) for landscape and athletic field irrigation on approximately 159 acres at the 15 sites. This represents a 8.6% increase over the preceding fiscal year. CBMWD has constructed the delivery facilities right up to the end user; however, the local retail water purveyor is the entity actually supplying the recycled water. No new sites were connected to the Rio Hondo recycled water distribution system during FY 10-11.

In FY 10-11, CBMWD wholesaled the recycled water to its customers, the retail water purveyors, on a monthly use, tiered rate schedule ($506 for the first 50 AF, and $460 for anything above 50 AF). This is between 57% and 62% of the rate of $805/AF it charges for Tier 1 non-interruptible potable water supplied by MWD, and between 50% and 55% of the rate of $915/AF it charges for Tier 2 supplies. Recycled water delivered outside of CBMWD's service area was subject to a $20/AF surcharge on each of the two tiers. Recycled water deliveries to the Malburg power plant in Vernon received an industrial use rate ($357 for the first 25 AF, $332 for the next 25 AF, $308 for the next 50 AF, and $283 for anything above 100 AF). The retail purveyors then set their own rates for the recycled water.

2.5.7 Puente Hills/Rose Hills

A distribution system was constructed to deliver recycled water from the San Jose Creek WRP to the Sanitation Districts' nearby Puente Hills Landfill, Materials Recovery Facility (MRF), Puente Hills Energy Recovery from Landfill Gas (PERG) Facility, and to Rose Hills Memorial Park. These sites are shown in Figure 13 and listed in Table 14.

This project was conceived of as far back as 1978 as a means of reducing the Landfill's $20,000 per month water bill; however, various impediments stalled this project over the years. Not the least of these impediments was the claim of "duplication of services" by the local water company that had served domestic water to the Puente Hills Landfill. To resolve this, Senate Bill 778 was passed and became law on January 1, 1995. This legislation allowed the Sanitation Districts to deliver their own recycled water to their landfill, without having to pay the water company for lost revenues, only for the physical facilities that would be rendered less useful.

Recycled water deliveries to the Puente Hills Landfill and the PERG Facility began in November 1997, while deliveries to Rose Hills began in June 1998 and to the MRF began in February 2005.The total project cost was approximately $7.2 million and was funded by a low-interest State water reclamation loan. In order to serve the eastern portions of the Landfill and the upper areas of the cemetery, $4 million of additional on-site distribution facilities were completed in mid-2001. A narrative description of the layout of the Puente Hills/Rose Hills recycled water distribution system is contained in Appendix I.

During FY 10-11, the Puente Hills/Rose Hills distribution system delivered 1.882 MGD (2,109 AFY), or 2.8% of the recycled water produced at this plant, through 8,900 feet of pipeline to five users on approximately 855 acres, a decrease of 6.2% from the preceding fiscal year. Recycled water is used for landscape irrigation of slopes and for dust control on the working deck at the Puente Hills Landfill and MRF, for cooling tower supply at the PERG Facility, and for landscape irrigation and impoundments at Rose Hills Memorial Park. The irrigation of strawberries by J&M Farming, which had leased cemetery property from Rose Hills, ended in July 2010.

2.5.8 Upper San Gabriel Valley Municipal Water District (Phase I Extension)

A distribution system has been completed that transports water from CBMWD's Rio Hondo distribution system to the Upper San Gabriel Valley Municipal Water District's (USGVMWD's) service area, referred to by this agency as its Phase I Extension. This system will ultimately deliver approximately 1,800 AFY from the San Jose Creek WRP to a number of sites. Rio Hondo College and Mill Elementary School were both connected in June 2003 and the Gateway Pointe commercial development was connected in January 2005. In August 2006, recycled water deliveries to 275 acres of the lower, older portion of Rose Hills Memorial Park began (acreage was erroneously reported as 858 previously). Due to the age of its irrigation system, Rose Hills required extensive retrofitting, mainly consisting of the installation of a separate domestic water system to serve hose bibbs for visitor use (i.e., vase filling). These sites are shown in Figure 13 and listed in Table 14.

From the existing Whittier Connector Unit on CBMWD's Rio Hondo distribution system (Section 2.5.5 above), a 36-inch distribution pipeline located at intersection of Strong Avenue and Pioneer Avenue, USGVMWD installed a tee connecting to a 16-inch steel pipeline, which extends north along Pioneer Avenue to Workman Mill Road. Approximately 200 feet north of the intersection of Workman Mill Road and Mill Road, a 6-inch service lateral provides service to Mill Elementary School. The 16-inch steel pipeline continues north along Workman Mill Road and terminates approximately 50 feet south of the main entrance of Rio Hondo College in a 10-inch service connection to the college.

During FY 10-11, the USGVMWD distribution system delivered 0.486 MGD (544 AFY), or 0.7% of the recycled water produced at this plant, through 11,020 feet of pipeline to four users on 383 acres, a decrease of 12.4% from the preceding fiscal year. SGVWC, the retail purveyor for this system, resold the recycled water to three of its customers at its tariff rate of $771.62/AF, or 86% of its corresponding potable water rate of $899.95/AF. Since Rose Hills Memorial Park is not a part of SGVWC's service area, it received recycled water at a contract rate of $220/AF.

2.6 WHITTIER NARROWS WRP

WHITTIER NARROWS WRP FACTS

Plant capacity:	15 MGD
Water produced:	7.76 MGD 8,701 AFY 64.1% FY increase
FY10-11 O&M:	$398/AF
Water reused:	7.434 MGD 8,330 AFY 57.1% FY increase 95.7% of production
Delivery systems:	1 18,900 ft. of pipe
No. of reuse sites:	3 604.3 acres

This treatment facility, located at 301 North Rosemead Boulevard, El Monte, CA 91733, was the first activated sludge water reclamation plant built by the Sanitation Districts and was completed in 1962 with a design capacity of 15 MGD. Of the 7.76 MGD (8,701 AFY) of coagulated, filtered, disinfected tertiary recycled water produced during FY 10-11 (1.9% of the effluent produced in the JOS), at an O&M cost of $398/AF, 7.434 MGD (8,330 AFY) was actively reused. The amount produced was a 64.1% increase in recycled water production over the preceding fiscal year, while the amount reused was a 57.1% increase, both as a result of completion of the plant's conversion to the NDN secondary treatment process. (Note: The entire treatment plant had been completely shut down for this conversion between August 17 and November 2 of the preceding year).

Recycled water quality for FY 10-11 is presented in Table B-6 of Appendix B. Recycled water from this plant is used at two direct, non-potable reuse sites and for groundwater recharge of the Central Basin, as shown on Figure 14 and listed in Table 15. Use of recycled water from this facility is permitted under LARWQCB Order Nos. 88-107 and 97-072 for direct, non-potable applications, and Nos. 91-100 and R4-2009-0048 for groundwater replenishment (see Section 2.5.1 for a discussion on the amended groundwater recharge permit).

2.6.1 WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

The majority (82.6%) of recycled water actively used from this plant went to recharge the Central Basin aquifer. In FY 10-11, 6.141 MGD (6,881 AFY) was used to replenish the groundwater supply, a 49.1% increase over the preceding fiscal year. In FY 10-11, 3.617 MGD (4,053 AFY) was delivered to the Rio Hondo Spreading Grounds via the plant's main discharge point to the Rio Hondo (56.0%), with another 2.174 MGD (2,436 AFY), or 33.6%, being directed to the San Gabriel Coastal Spreading Grounds via the plant's 45-inch outfall pipe. The third discharge point, the Zone 1 Ditch leading to the Rio Hondo Spreading Grounds, received the remaining 0.674 MGD (755 AFY), or 10.4%, of the recycled during the fiscal year.

Of the total amount of recycled water delivered from the Whittier Narrows WRP, 4.280 MGD (4,797 AFY), or 63.1%, went to the Rio Hondo Spreading Grounds and 2.181 MGD (2,444 AFY), or 32.2%, went to the San Gabriel Coastal Spreading Grounds. Another 0.321 MGD (359 AFY), or 4.7% of the recycled water delivered, was bypassed around the spreading grounds and lost to the ocean during November 2010 through March 2011 as a result of heavy rainfall runoff. Any discrepancy between the total amount discharged and the totals

FIGURE 14
WHITTIER NARROWS WRP REUSE SITES

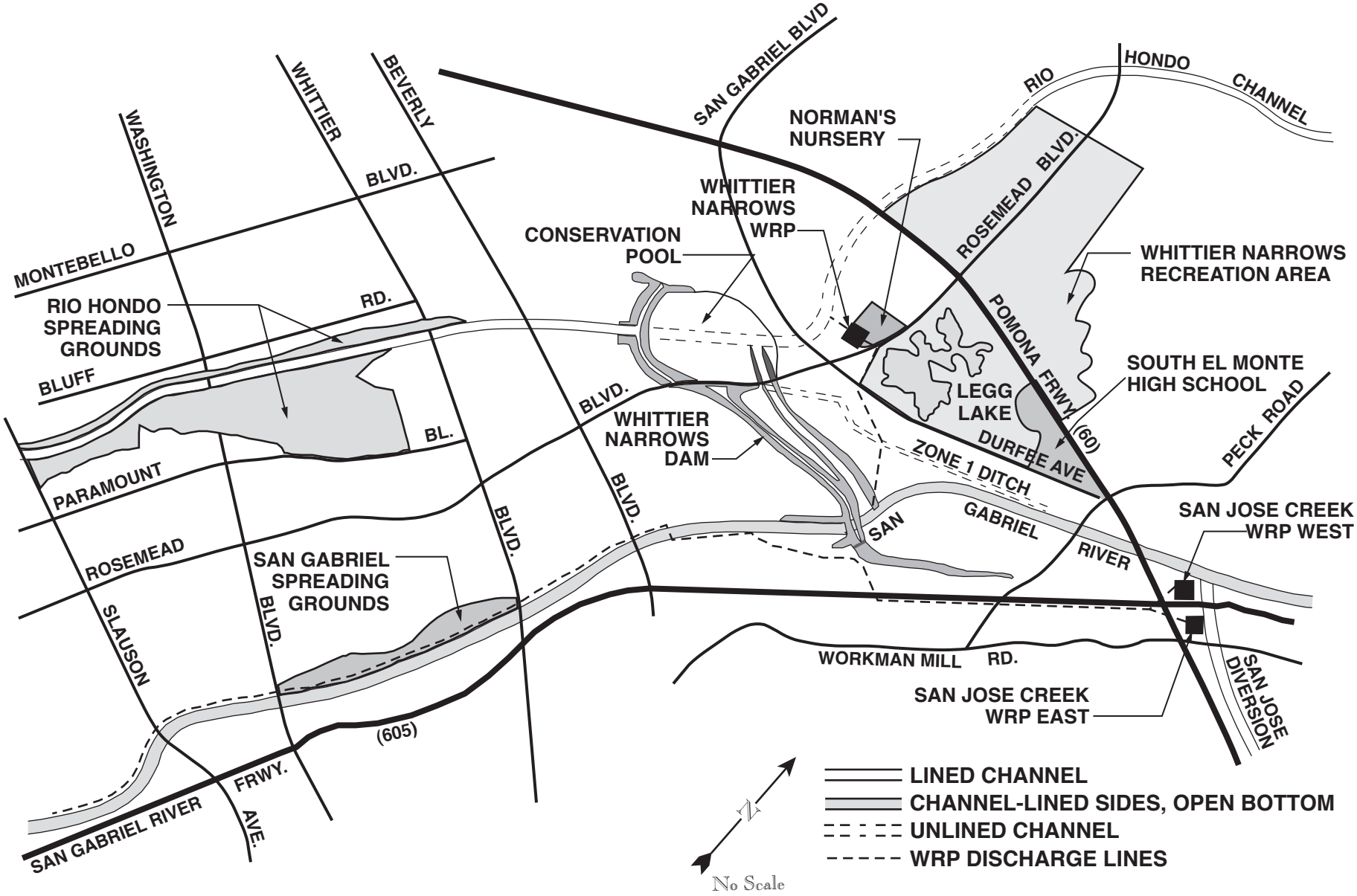


TABLE 15
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
WHITTIER NARROWS WRP

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Water Replenishment District	Aug 62	--	R	6.141	6,881
Norman's Nursery	Mar 83	20.2	O	0.016	17
Whittier Narrows Recreation Area	Sep 06	568	L	0.712	798
South El Monte High School	Aug 07	16.1	AF, L	0.062	69
Whittier Narrows Golf Course	Dec 09	260	L	0.504	565
TOTALS		**864.3**		**7.434**	8**,330**

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

recharged and bypassed is attributed to differences in metering between the Sanitation Districts and the LACDPW.

2.6.2 San Gabriel Valley Water Company - F.L. Norman's Nursery

In March 1983, Flora Nursery leased from the Sanitation Districts the 17-acre parcel known as the arboretum site northwest of the junction of the 60 and 605 Freeways adjacent to the San Jose Creek WRP, and contracted for the purchase of recycled water from this plant for the irrigation of nursery stock. F.L. Norman's Nursery purchased this operation in March 1986. The Stage III expansion of the San Jose Creek WRP required the relocation of the nursery operations from the arboretum site to land owned by the Sanitation Districts and the Army Corps of Engineers next to the Whittier Narrows WRP. This relocation began in December 1988 and was completed in May 1989. Recycled water is supplied to the nursery operation directly from the plant's chlorine contact tanks through the nursery's own pump. During FY 10-11, 0.016 MGD (17 AFY), or 0.2% of the recycled water produced at this plant, was delivered to this 20.2-acre site for the irrigation of ornamental plants for commercial resale, a 29.2% decrease from the preceding fiscal year. This company ceased nursery operations at this site and deliveries of recycled water ended in April 2011.

Contract No. 3286 with SGVWC replaced the old contract for the sale of recycled water directly to the nursery (Contract No. 2835) beginning in September 1994. SGVWC resold the recycled water to the nursery at its contract rate of $473.28/AF, a 47% discount from its corresponding potable water rate of $899.95/AF.

2.6.3 Upper San Gabriel Valley Municipal Water District (Phase II-A Extension) – Whittier Narrows Recreation Area

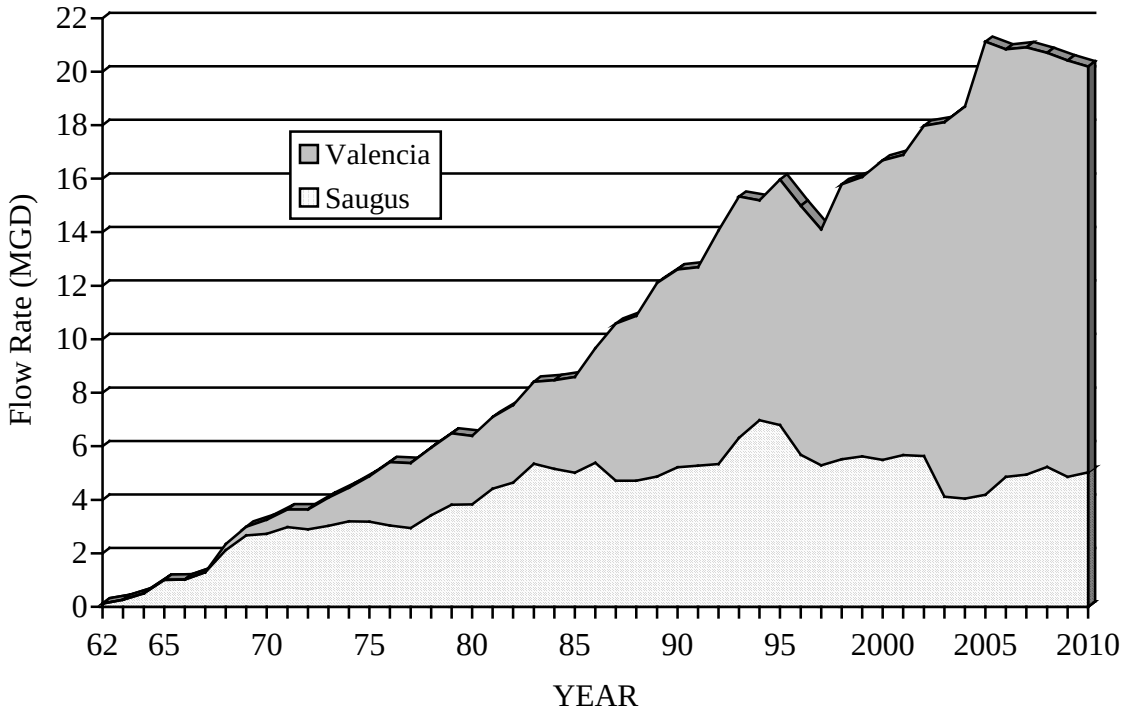
This project (designated Phase II-A by USGVMWD) was completed in September 2006, at which time deliveries of recycled water began to the Los Angeles County Department of Parks and Recreation's (LACDPR's) Whittier Narrows Recreation Area, located adjacent to the Whittier Narrows WRP. The athletic fields and landscaping at South El Monte High School were connected in July 2007. Construction of a pipeline to the adjacent Golf Course was completed and the golf course connected in December 2009. The $9 million project was constructed with the help of a $2.1 million Prop. 50 grant from the SWRCB and utilizes the plant's existing chlorine contact tanks, which will no longer be regularly needed for effluent disinfection after the plant is converted from sodium hypochlorite to UV disinfection.

During FY 10-11, the USGVMWD distribution system delivered 1.278 MGD (1,432 AFY) through 18,900 feet of pipeline for use on 864 acres. This was 16.5% of the recycled water produced at this plant and a 149.0% increase over the preceding fiscal year. This increase was primarily due to the plant shutdown during the previous fiscal year for construction, followed by increased flows during the current fiscal year making more recycled water available. No new sites were added to the system during FY 10-11, although construction of the Rosemead extension to this system was completed (see Section 5.5.1).

USGVMWD wholesaled the recycled water to SGVWC, the retail purveyor for this system, who then resold the recycled water to the LACDPR at a contract rate of $696.00/AF, or 77% of its corresponding potable water rate of $899.95/AF. LACDPR then leases a portion of its groundwater pumping rights to SGVWC in exchange, resulting in a lower effective rate for the recycled water. The golf course and high school were charged their tariff rate of $726.23/AF, 81% of the potable water rate.

This area, which includes the City of Santa Clarita, is located northwest of the City of Los Angeles. The Valencia and Saugus WRPs together make up the Santa Clarita Valley Joint Sewerage System (SCVJSS) and have a design capacity of 28.1 MGD (31,487 AFY). During FY 10-11, these plants produced 19.96 MGD (22,365 AFY) of recycled water available for reuse, a 1.8% decrease from the preceding fiscal year. Figure 15 illustrates the growth of recycled water production from Valencia and Saugus WRPs from 1962 through the end of 2010. During most of the history of these plants, only occasional reuse via water truck hauling occurred. The use of recycled water through a permanent distribution system began during FY 03-04, with 0.300 MGD (336 AFY), or 1.5% of the total amount of recycled water produced in the SCVJSS, being delivered from the Valencia WRP during FY 10-11. This was a 9.4% decrease from the preceding fiscal year.

FIGURE 15
SANTA CLARITA VALLEY JOINT SEWERAGE SYSTEM RECYCLED WATER PRODUCTION
1962-2010



3.1 VALENCIA WRP

The Valencia WRP, located at 28185 The Old Road, Valencia, CA 91355, was completed in 1967. Following several expansions, the construction of a 4.4 million gallon flow equalization tank in February 1995, a solids handling expansion in August 2002, and the construction of additional aeration tanks for NDN in May 2003, the Valencia WRP now has a capacity of 21.6 MGD. In FY 10-11, the plant produced an average of 14.95 MGD (16,749 AFY) of recycled water, a 3.9% decrease from the preceding fiscal year. The FY 10-11 O&M cost to produce this water was approximately $623/AF, which includes solids processing for both the Saugus and Valencia WRPs. Recycled water quality for FY 10-11 is presented in Table B-7 of Appendix B.

Use of recycled water from this facility is permitted under Los Angeles RWQCB Order Nos. 87-48 and 97-072. During FY 10-11, 0.300 MGD (337 AF), or 2.0% of the recycled water produced was actively reused, a 9.4% decrease from the preceding year.

VALENCIA WRP FACTS	
Plant capacity:	21.6 MGD
Water produced:	14.95 MGD 16,749 AFY 3.9% FY decrease
FY10-11 O&M:	$623/AF
Water reused:	0.300 MGD 337 AFY 2.0% of production 9.4% FY decrease
Delivery systems:	1
No. of reuse sites:	3 129 acres

3.1.1 Castaic Lake Water Agency

The Castaic Lake Water Agency (CLWA), the regional importer and wholesaler of State Project water in the Santa Clarita Valley, has begun the implementation of a recycled water distribution system. In spring 1998, Kennedy/Jenks completed design of a 10,000 gpm pump station located adjacent to the Valencia WRP's chlorine contact tanks, with enough pipeline to go through the plant site to the street, with construction being completed in 1999. Construction of a 20- and 24-inch pipeline southerly along The Old Road to Valencia Boulevard was completed in May 2002. Recycled water deliveries for hydrostatic testing of the storage reservoir constructed at the Westridge Development reuse site as a part of this project began in August 2003, with irrigation of the Tournament Players Club golf course beginning the following month. These facilities are shown in Figure 16 and listed in Table 16.

During FY 10-11, 0.300 MGD (337 AF), or 2.0% of the recycled water produced at the Valencia WRP was delivered through 16,490 feet of pipeline, a 9.4% decrease over the preceding fiscal year. In FY 10-11, 2.8 acres of landscaping at the intersection of The Old Road and Magic Mountain Parkway were connected.

Valencia Water Company, the retail purveyor for this system, purchased the recycled water from CLWA for $486.24/AF and resold it at its tariff rate of $511.83/AF, or 84% of its corresponding potable water rate of $609.40/AF.

SAUGUS WRP FACTS	
Plant capacity:	6.5 MGD
Water produced:	5.01 MGD 5,616 AFY 5.0% FY increase
FY10-11 O&M:	$499/AF
Water reused:	none

3.2 Saugus WRP

The Saugus WRP, located at 26200 Springbrook Avenue, Saugus, CA 91350, was completed in 1962. Three subsequent expansions in 1964, 1965, and 1968 and flow equalization facilities in 1991 brought its current design capacity to 6.5 MGD. The treatment process was upgraded to tertiary with the addition of dual-media pressure filters in 1987. No future conventional expansions are possible due to space limitations on the site; any increase in plant capacity would have to be in some form of compact treatment technology, such as membrane bioreactors (MBRs). In FY 10-11, the plant produced an average of 5.01 MGD (5,616 AFY) of recycled water, which was a 5.0% increase over the preceding fiscal year, at an O&M cost of $499/AF. Recycled water quality for FY 10-11 is presented in Table B-8 of Appendix B. Use of recycled water from this facility is permitted under LARWQCB Order Nos. 87-49 and 97-072; however, no recycled water was used from this facility in FY 09-10.

FIGURE 16
CASTAIC LAKE WATER AGENCY
RECLAIMED WATER DISTRIBUTION SYSTEM

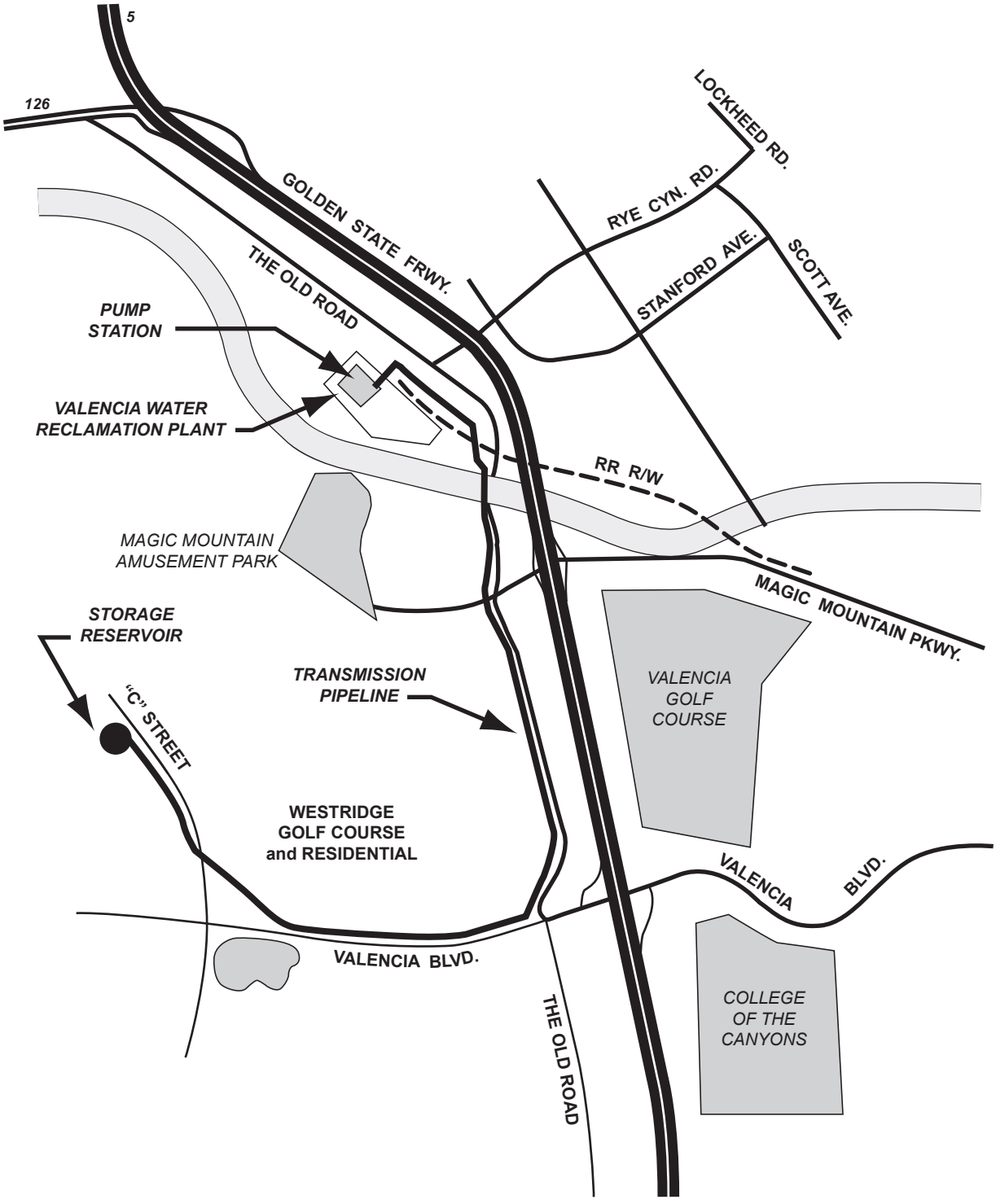


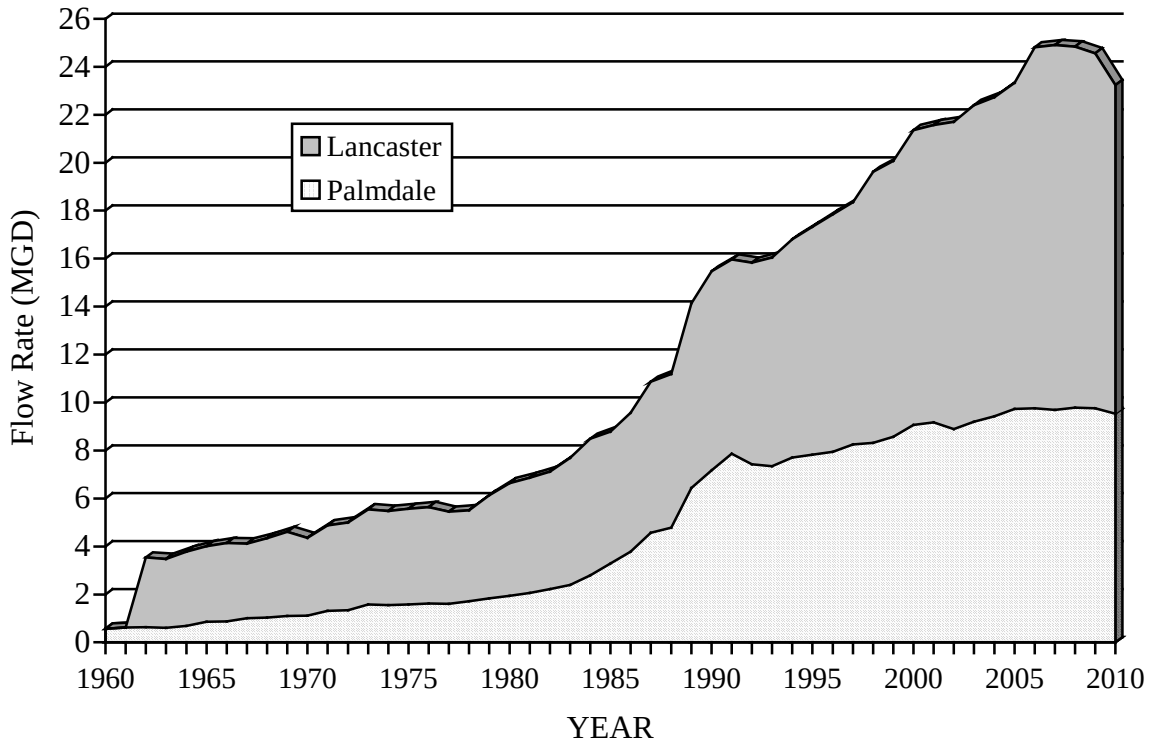
TABLE 16
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
VALENCIA WRP

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Tournament Players Club at Valencia	Aug 03	120	L	0.277	311
The Old Road medians, (26840-27236 The Old Road)	Aug 03	5.8	L	0.020	22
The Old Road/Magic Mtn. Pkwy medians	Nov 10	2.8	L	0.003	4
TOTALS		**128.6**		**0.300**	**337**

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

Two treatment plants serve the communities of the Antelope Valley, one each in the cities of Lancaster and Palmdale. Both WRPs produce secondary effluent by means of oxidation ponds followed by disinfection with chlorine, both use anaerobic digesters and drying beds for solids processing and both are in the process of being converted to activated sludge with tertiary filtration and disinfection (the conversion of the Palmdale WRP actually completed in December 2011). Together, during FY 10-11 the two WRPs treated approximately 23.10 MGD of wastewater to produce 20.01 MGD (22,421 AFY) of effluent available for reuse, an increase of 3.5% over the preceding fiscal year. Figure 17 illustrates the growth of influent flows at the Lancaster and Palmdale WRPs from 1960 through the end of 2010. In this case, influent is a more accurate gauge of plant flows because the actual amount of effluent is variable from month to month, as water is either lost in the oxidation ponds by evaporation/percolation or gained by rainfall. From this graph, it appears from the decrease in influent flows over the past few years that water conservation and the economic slowdown have finally outweighed population growth in regard to wastewater generation in the Antelope Valley. During FY 10-11, 18.98 MGD (21,270 AFY), or 94.9% of the recycled water produced, was actively reused, a 1.1% decrease from the preceding fiscal year. Reuse flows from both WRPs are presented in Table 17.

FIGURE 17
ANTELOPE VALLEY WRPs INFLUENT FLOW
1960-2010



4.1 LANCASTER WRP

The existing treatment facility, located at 1865 West Avenue D, Lancaster, CA 93534, began operation in 1959, replacing an earlier treatment plant that had begun operation in 1941. The plant's capacity was expanded

TABLE 17
SUMMARY OF FISCAL YEAR 10-11 RECYCLED WATER USAGE
LANCASTER AND PALMDALE WRPs

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Apollo Lakes Community Regional Park (Lancaster)	Jun 69	56	L,P	0.184	206
Piute Ponds (Lancaster)	May 81	400	E	7.150	8,012
Harrington Farms Pistachio Orchard (Palmdale)	Apr 85	23	AG	0.082	92
Nebeker Ranch (Lancaster)	Jun 88	600	AG	3.668	4,111
Tree Farm (Palmdale)	Feb 89	46	O	0.012	13
Antelope Valley Farms (Palmdale)	Mar 02	2,100	AG	7.038	7,887
Eastern Agricultural Site (Lancaster)	Feb 07	696	AG	0.845	947
Public Works Dept. sewer flushing (Lancaster)	Jan 09	--	I	0.001	1
Public Works Dept. street sweeping (Lancaster)	Feb 09	--	I	0.0004	0.4
Lancaster University Center (Lancaster)	May 09	2	L	0	0
Public Works Dept. dust control (Lancaster)	Sep 10		I	0.00001	0.01
TOTALS		**3,920**		**18.981**	**21,270**

NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

LANCASTER WRP FACTS	
Plant capacity:	17 MGD
Water produced	11.89 MGD 13,323 AFY 2.0% FY increase
FY10-11 O&M:	$387/AF
Water reused:	11.85 MGD 13,277 AFY 99.7% of production 1.6% FY increase
Delivery systems:	5
No. of reuse sites:	7 1,752 acres

in 1989 to 8 MGD, with 460 million gallons (1,400 AF) of storage ponds to capture excess winter flows. The Stage III expansion increased plant capacity to 10 MGD in December 1992. The Stage IV expansion, consisting of a flow equalization basin, two sedimentation tanks and additional aeration equipment in the oxidation ponds, increased the plant's secondary treatment capacity to 16 MGD in May 1997. The MBR plant that went into operation in February 2007 raised the total plant treatment capacity to 17 MGD. In June 1969, the Antelope Valley Tertiary Treatment Plant (AVTTP) was placed in operation with the ability to treat 0.6 MGD of Lancaster WRP secondary effluent to tertiary quality. This plant completed its conversion to full tertiary treatment in mid-2012.

This plant treated an average of 13.51 MGD in FY 10-11, utilizing oxidation ponds to produce 11.89 MGD (13,323 AFY) of recycled water, or a 2.0% increase over the preceding fiscal year. Approximately 8.9% of the production is tertiary effluent being produced by both the AVTTP and the MBR plant (1.057 MGD, 1,184 AFY), with the remainder being secondary effluent. A portion of the wastewater entering the plant is lost due to evaporation from the oxidation and storage ponds during the summer, while additional flows are gained by precipitation during the winter. The FY 10-11 O&M cost to produce secondary effluent (based on influent flow) was approximately $387/AF (including solids processing). Besides a small amount of tertiary effluent used for on-site irrigation and construction at the WRP, all of the recycled leaving the plant was reused at four sites shown in Figure 18, and presented in Table 17.

4.1.1 Piute Ponds

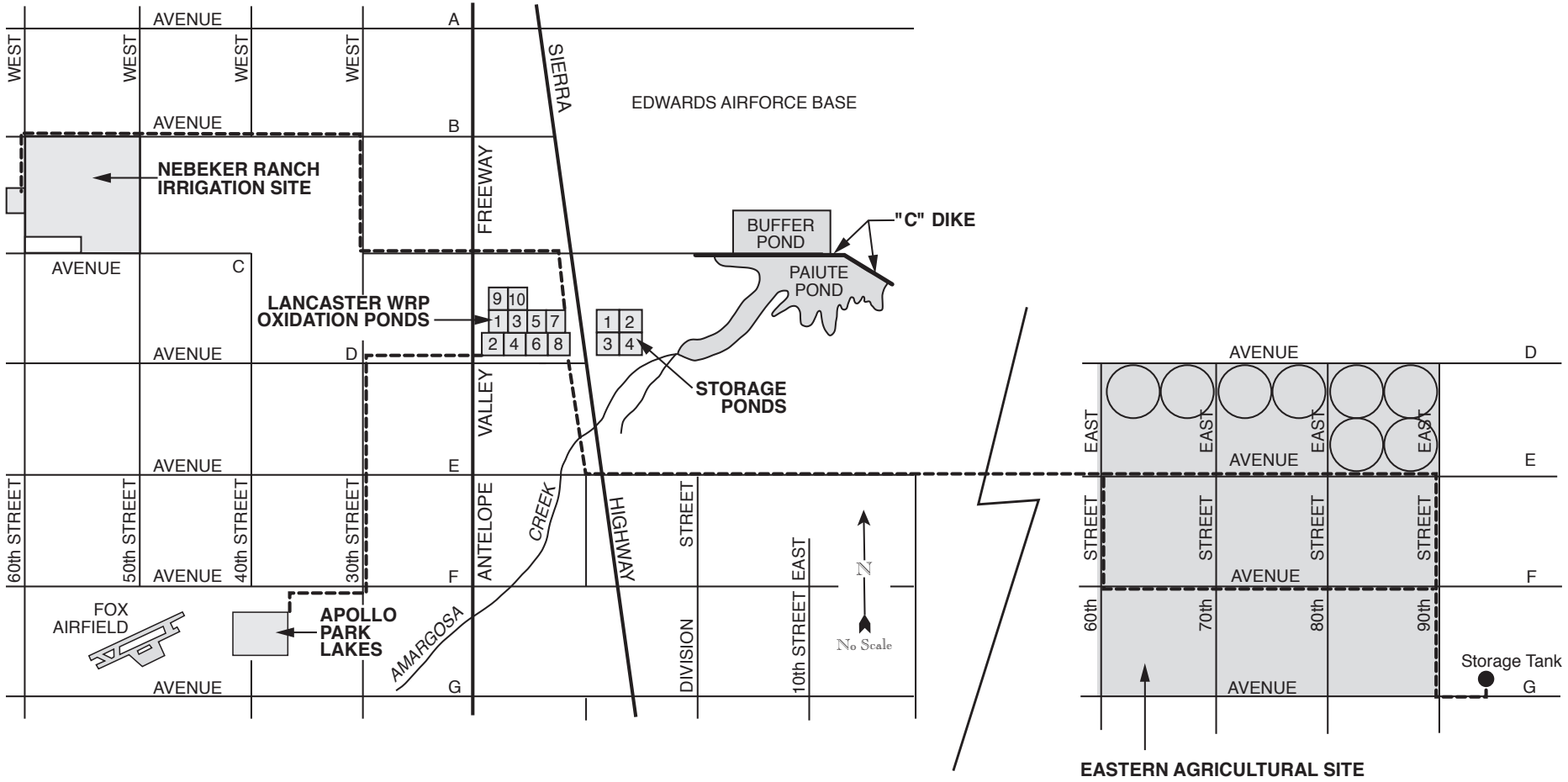
The initial discharge point for disposal of effluent from the Lancaster WRP had been to Amargosa Creek that then flowed onto Rosamond Dry Lake. In order to prevent flooding of the dry lakebed (which is located within the boundaries of Edwards Air Force Base), a 1-⅓ mile long dike was constructed in 1960 to impound the effluent. Approximately 200 acres of wetlands formed, becoming an important migratory stopover for ducks along the Pacific Flyway. In a memorandum of understanding signed in 1981 with Edwards Air Force Base and the California Department of Fish and Game, the Sanitation Districts agreed to maintain at least 200 acres of wetlands with recycled water in order to preserve Piute Ponds as a wildlife refuge. The secondary effluent is disinfected with chlorine in order to protect the health of Air Force officers who use this area as a duck-hunting club.

In FY 10-11, 7.150 MGD (8,012 AFY) was delivered to Piute Ponds, an increase of 4.1% over the preceding fiscal year. This reuse constitutes 60.1% of the recycled water produced at this facility.

4.1.2 Nebeker Ranch

The dike constructed by the Air Force did not completely eliminate the flow of recycled water onto Rosamond Dry Lake during winter when evaporation was at a minimum and additional rainfall runoff entered Piute Ponds. Five hundred million gallons of storage capacity were added in 1988 to collect excess recycled water produced during the winter for delivery to the 680-acre (approximately 600 acres cultivated) Nebeker Ranch,

FIGURE 18
LANCASTER WATER RECLAMATION PLANT FACILITIES



an alfalfa farm located approximately three miles northwest of the treatment plant. The ranch is served by a pump station and 15,900 feet of 24-inch force main.

During FY 10-11, 3.668 MGD (4,111 AFY) of recycled water was used for agricultural irrigation at this site, a decrease of 1.9% from the preceding fiscal year. This reuse constitutes 30.9% of the recycled water produced at this plant. Deliveries of recycled water to this site will cease in the near future following the upgrade of the Lancaster WRP to full tertiary treatment and the full utilization of recycled water by the Eastern Agricultural site (Section 4.1.4) and the planned recycled water distribution systems by the City of Lancaster (Section 4.1.5) and the Los Angeles County Waterworks (Section 5.8.1).

4.1.3 Apollo Community Regional Park

In 1962, the then Los Angeles County Engineer devised and developed an aquatic recreation area next to the General William J. Fox Airfield in the City of Lancaster. The source of water is an advanced treatment plant located at the Sanitation Districts' Lancaster WRP that consists of chemical coagulation (for the reduction of phosphate to inhibit algal growth), sedimentation, dual-media filtration, and chlorination. The Antelope Valley Tertiary Treatment Plant (AVTTP) was placed in operation in June 1969 with a capacity of 0.6 MGD. Recycled water from the AVTTP is delivered by means of a 12-inch force main for construction of the 56-acre Apollo Community Regional Park (formerly known as Apollo Lakes County Park), which was opened to the public in November 1972.

In FY 10-11, 0.184 MGD (206 AFY) of recycled water was delivered through 23,800 feet of pipeline to maintain 26 acres (80 million gallon) of lakes at the park to make up for evaporative losses and for irrigation water withdrawn from the lakes for use on the park, an increase of 5.1% over the preceding fiscal year. This reuse constitutes 1.5% of the recycled water produced at this plant. The three lakes in the park, named Aldrin, Armstrong, and Collins, are stocked with trout and catfish for public fishing, although no swimming is allowed. Contract No. 1601 specifies that the County of Los Angeles reimburse the Sanitation Districts for all of the O&M costs incurred in operating the AVTTP. The upgrade of the Lancaster WRP to tertiary treatment may render the AVTTP superfluous if nutrients can be managed.

4.1.4 Eastern Agricultural Site Development and Storage Project

In order to prevent unauthorized overflows of effluent from Piute Ponds onto Rosamond Dry Lake and to handle future increases in effluent flow, the 2020 Facilities Plan for the Lancaster WRP identified new treatment processes (conventional NDN activated sludge replacing oxidation ponds, followed by tertiary filtration and disinfection) and treatment capacity expansion (18 MGD in 2010, with an ultimate capacity of 26 MGD by 2020). This plant expansion is currently under construction. Additionally, since demand for recycled water is seasonal and weather dependent, approximately 4,000 AF of storage ponds have been constructed in advance of startup of the new treatment facilities.

There has been an increased interest in the recycled water that will be produced by the new plant. Agreements for the purchase of recycled water have been executed with Los Angeles County Waterworks District 40 (13,500 AFY), City of Lancaster (950 AFY), and City of Palmdale (2,000 AFY). These agreements allow recycled water to be provided from the Lancaster and/or Palmdale WRPs. Since many industrial/municipal reuse projects and the required infrastructure are still in their early development stages, the Eastern Agricultural Site was developed to immediately utilize the water. In February 2006, construction of the 18.3-mile distribution pipeline was completed. A narrative description of the layout of this system is included in Appendix K.

In the interim, while the new treatment facilities are being designed and constructed, a 1 MGD MBR pilot plant (with a temporary chlorine disinfection system and ultimately a UV disinfection system) was installed and put into operation in February 2007. The effluent from this plant is being delivered to the first agricultural area consisting of eight center pivot irrigation systems in the area bounded by 70th and 90th Streets East and Avenues D and E, which is being operated by Harrington Farms under contract to the Sanitation Districts. During FY 10-11, 0.845 MGD (947 AFY) of recycled water was used at this site for the irrigation of Sudan grass and a combination of barley, oats, and wheat, as well as for maintenance activities such as construction, dust control, and pipeline testing. Reuse at this site constitutes 7.1% of the recycled water produced at this plant, and a decrease of 3.2% from the preceding fiscal year.

4.1.5 CITY OF LANCASTER – DIVISION STREET CORRIDOR

A contract for the sale of recycled water produced at the Lancaster and Palmdale WRPs to the City of Lancaster was signed in March 2008 for deliveries of up to 950 AFY. Recycled water deliveries from the Lancaster WRP to the City's Division Street Corridor Recycled Water Project (Division Street Corridor) began in January 2009. The City, in collaboration with the U.S. Army Corps of Engineers, has begun construction of distribution system that will eventually deliver recycled water from the Lancaster WRP following its upgrade to tertiary treatment. Through the Sanitation Districts' Supplementary Environmental Project Fund, $1 million was contributed to the construction of this system. The remaining financing consisted of City and American Recovery and Reinvestment Act funds. During FY 10-11, a total of 0.001 MGD (1 AFY) was delivered through 29,800 feet of pipeline, a 90% decrease from the preceding fiscal year. For the time being, production from the MBR plant is being delivered to the following reuse sites: the City's Public Works Department used 0.001 MGD (1 AFY) for sewer flushing, 0.0004 MGD (0.4 AFY) for street sweeping of 2,125 curb-miles of roadways and parking lots and 0.00001 MGD (0.01 AFY) for dust control. Lancaster University Center and the short-term Northeast Gateway demolition site were no longer using recycled water. The City has an existing storage reservoir to serve their planned system, and a permanent pump station is under development.

4.2 PALMDALE WRP

This treatment facility, located at 39300 30th Street East, Palmdale, CA 93550, began operation in 1953 as 0.75 MGD plant, with subsequent expansions in 1958 (2.5 MGD), 1972 (3.1 MGD), 1989 (6.5 MGD), 1993 (8 MGD), and 1996 (15 MGD). This plant completed its conversion to full tertiary treatment in December 2011.

This plant treated an average of 9.59 MGD in FY 10-11 using oxidation ponds to produce 8.12 MGD (9,099 AFY) of secondary effluent, or a 6.5% increase over the preceding fiscal year. The O&M cost to produce this water (based on influent flow) was approximately $372/AF (including solids processing).

During FY 10-11, 7.133 MGD (7,993 AFY), or 87.8% of the plant's production, was actively reused on 2,069 acres at three sites. All reuse occurred on property owned by the City of Los Angeles World Airports (LAWA) but now under long-term lease to the Sanitation Districts. This usage represents a 5.2% decrease in reuse from the preceding fiscal year. The area

PALMDALE WRP FACTS	
Plant capacity:	15 MGD
Water produced:	8.12 MGD 9,099 AFY 6.5% FY increase
FY10-11 O&M:	$372/AF
Water reused:	7.133 MGD 7,993 AFY 5.2% FY decrease 87.8% of production
Delivery systems:	1
No. of reuse sites:	3 2,069 acres

receiving recycled water is shown in Figure 19. The reuse sites are listed in Table 16 along with the reuse flows from the Lancaster WRP.

4.2.1 City of Los Angeles World Airports Lease

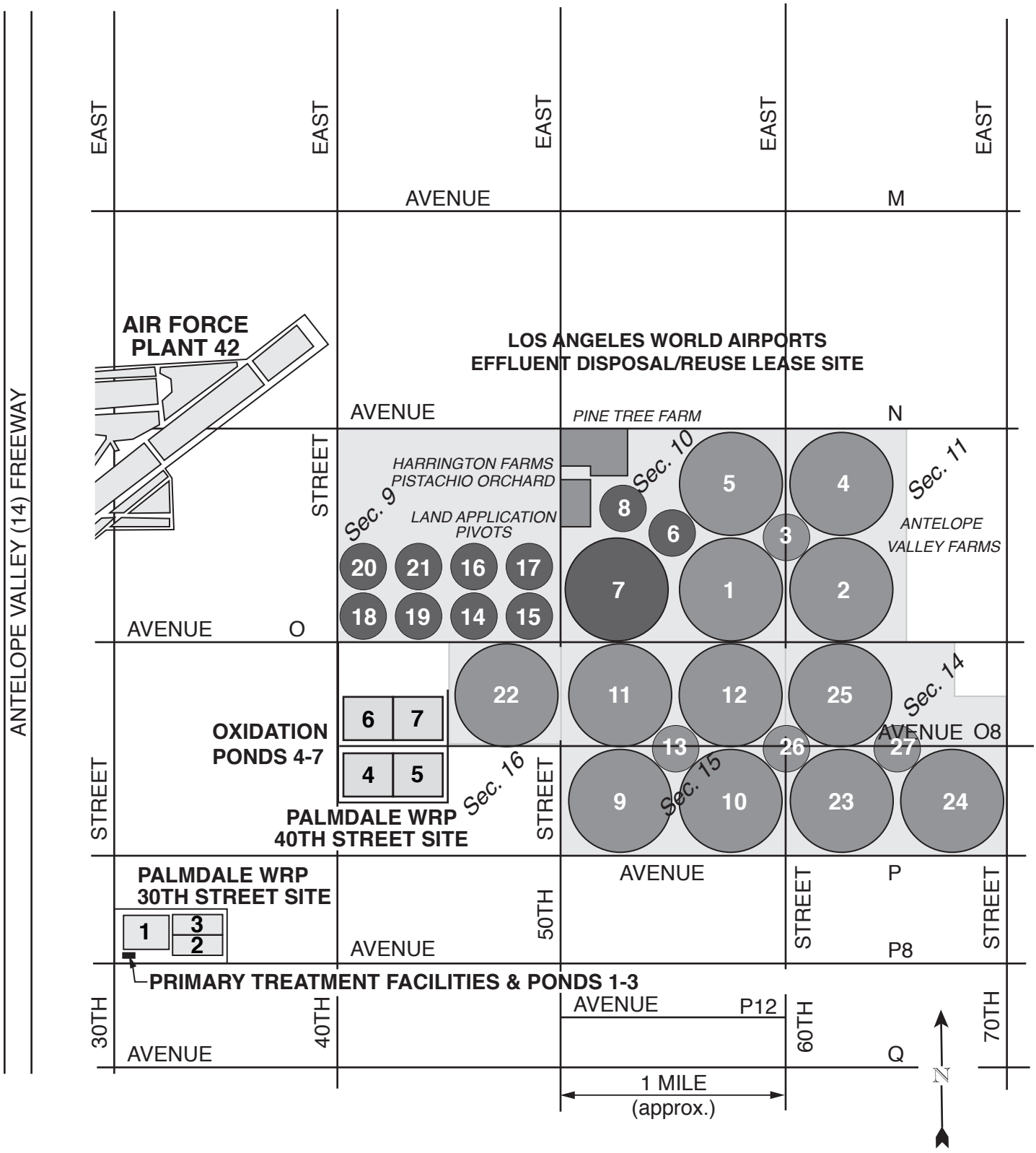
Recycled water from the Palmdale WRP has been sold to a series of local farmers since 1959. However, since the recycled water produced at the Palmdale WRP was historically secondary effluent, its applications have been limited. In January 1981, the Sanitation Districts signed Contract No. 2474 for the delivery of all the plant's effluent to City of Los Angeles World Airports (LAWA) (formerly known as the Department of Airports, or DOA), who had purchased much of the land in the area in anticipation of the construction of Palmdale International Airport. LAWA had planned to lease out the land that they owned to farmers until the airport could be built, and would resell the recycled water to these farmers, with the excess water being spread on uncultivated land. However, since LAWA was unable to find tenants to buy the recycled water, a second contract (No. 3013) was signed in 1989 allowing the Sanitation Districts to land apply all water from the Palmdale WRP on LAWA land at no charge to either party.

In January 2001, in accordance with the plant's Waste Discharge Requirements (WDRs), the Sanitation Districts submitted a Farm Management Plan (FMP), an Effluent Disposal Plan, and a Corrective Action Plan for the Palmdale WRP. The three documents provide an integrated solution for meeting the revised WDR established in the permit, Order No. 6-00-57. As a means of implementing the FMP, the Sanitation Districts signed a long-term lease with LAWA for four square miles of land to allow for the development of an integrated reuse system for water produced by the Palmdale WRP. As the master leaseholder, the Sanitation Districts are directly responsible for all land application and reuse activities at the site and, accordingly, have implemented agricultural management measures to minimize impacts to groundwater quality in land application areas. In March 2009, the Sanitation Districts eliminated land application and maximized reuse activities.

Recycled water is delivered to the Sanitation Districts' LAWA-leased property through 13,200 feet of 36-inch DIP force main. An average of 0.082 MGD (92 AFY) was used during FY 10-11 to irrigate 23 acres of the Pistachio Orchard (previously planted and maintained by LAWA). Another 0.012 MGD (13 AFY) was used at a 46-acre Sanitation Districts-operated tree farm (formerly operated by Tree Mover). The Pistachio Orchard and Tree Farm are leased from the Sanitation Districts by Harrington Farms.

As part of the FMP implemention, the Sanitation Districts embarked on the Palmdale Agricultural Effluent Reuse Project, submitting an Engineering Report for the Demonstration Phase to the Lahontan RWQCB in October 2001. In March 2002, this project officially began with Antelope Valley Farms installing two center-pivot irrigation systems (125 acres each) on land leased by the Sanitation Districts from LAWA. The only cost to the farmer was the capital costs for the irrigation systems and the O&M and energy costs for the booster pumps. By the end of FY 10-11, a total of 13 center pivots and 14 mini-pivots had been installed. Previously, the pivots were used primarily for land application of effluent on crops (i.e., above agronomic rates) and were not considered as "reuse". However, all application of recycled water began meeting agronomic rates in March 2009, therefore is now counted as reuse. During FY 10-11, this 2,000-acre site used 7.038 MGD (7,887 AFY), or 86.7% of the recycled water produced by the Palmdale WRP to grow livestock feed (first oats and later alfalfa). This was a 4.8% decrease from the preceding fiscal year.

FIGURE 19
PALMDALE WATER RECLAMATION PLANT FACILITIES



5. FUTURE WATER RECYCLING PROJECTS

Several recycled water distribution projects throughout the Sanitation Districts' service area are in various stages of development to make use of up to an estimated 61,220 AFY of the remaining recycled water currently produced but not yet beneficially reused, with the possibility of another 16,000 AFY of effluent from JWPCP receiving additional treatment prior to reuse. These projects are listed in Table 17 along with the WRP that would supply the recycled water, the estimated quantities of recycled water, and the anticipated completion date. Unsecured funding, institutional concerns, and lack of regulatory approval make the anticipated completion dates for several projects uncertain. In addition to the projects listed in Table 18, there are a number of other potential reuse projects that are much more conceptual at this time that are described in Section 5.8 below.

TABLE 18
SUMMARY OF FUTURE WATER RECYCLING PROJECTS

Project Name	Recycled Water Source	Quantity (AFY)	Anticipated Completion
Long Beach Water Department	Long Beach WRP	4,510	TBD
City of Lakewood	Los Coyotes WRP	160	TBD
Walnut Valley Water District	Pomona WRP	4,550	TBD
City of Pomona Master Plan (recommended)	Pomona WRP	1,500	2030
Groundwater Reliability Improvement Program	San Jose Creek WRP	21,000	TBD
East San Gabriel Valley Regional	San Jose Creek WRP	1,710	2012
La Puente Valley County Water District	San Jose Creek WRP	280	TBD
Southeast Water Reliability Project	San Jose Creek WRP	1,000	2013
CBMWD La Mirada Extension	San Jose Creek WRP	1,200	TBD
USGVMWD II-a Rosemead Extension	Whittier Narrows WRP	270	Spring 2011
City of Arcadia	Whittier Narrows WRP	740	2013
West Basin Municipal Water District	JWPCP	16,600	2020-25
Castaic Lake Water Agency	Valencia & Saugus WRPs	17,400	2030
County Waterworks – Backbone System	Palmdale or Lancaster WRP	4,300	Early 2012
City of Palmdale	Palmdale or Lancaster WRP	2,000	TBD
TOTAL		77,220	

TBD = to be determined

5.1 LONG BEACH WRP

5.1.1 LONG BEACH WATER DEPARTMENT MASTER PLAN

In August 2010, the LBWD, with the assistance of Montgomery-Watson-Harza (MWH) and in conjunction with WRD, released a draft update of its recycled water Master Plan. MWH identified an additional 49 irrigation and industrial potable water customers with a demand of approximately 4,510 AFY that could be converted to recycled water, including the Haynes and AES power plants and the Southeast Resource Recovery

Facility (SERRF), a number of residential developments, several industrial users and commercial laundries, and numerous greenbelts (schools, parks, golf courses, commercial nurseries, etc.). The revised Master Plan also took into consideration the expansion of the LVLAWTF for increased seawater intrusion barrier injection and recommended the construction of two, 3.3 MG storage tanks at the Alamitos Reservoir site. Seventeen of these customers with a demand of 2,505 AFY have been identified as the "most probable" for conversion to recycled water in the near term, as they are either located near an existing recycled water line or have expressed interest in conversion.

Eleven alternative construction projects were identified, with six being recommended for implementation:

Alternative 8 – A 6-inch pipeline west along Anaheim St. and north on Orizaba Ave. at a capital cost of $240,000 to serve 102 AFY to American Textile Maintenance Company (laundry).

Alternative 4 – A 4-inch pipeline north on Palo Verde Avenue at a capital cost of $320,000 to serve 39 AFY to Millikan High School.

Alternative 7 – A 16-inch pipeline beginning at the intersection of Vuelte Grand Ave. and Atherton St. at a capital cost of $7 million to serve 1,000 AFY to the Haynes Generating Station.

Alternative 6 – A 4-inch pipeline west on Spring St. at a capital cost of $250,000 to serve 20 AFY to Long Beach Airport Marriott Hotel.

Alternative 1A – 6- and 12-inch pipelines beginning at the intersection of 46th St. and Atlantic Ave. at a capital cost of $750,000 to serve 52 AFY to Los Angeles County Community Development (residential).

Alternative 9 – Sub-project 9A will begin at the intersection of 11th St. and Obispo Ave. and run to the intersection of Pico Ave. and Ocean Blvd. to serve 93 AFY to the Hyatt Regency Hotel, Rainbow Harbor Esplanade, Long Beach Shoreline Marina and Cesar Chavez Elementary School. Sub-projects 9B, 9C and 9D all require Subproject 9A to be built, although they each can be constructed individually. Sub-project 9B will serve 488 AFY to TOPKO and Montenay Pacific Power Corp. Sub-project 9C will serve 797 AFY to Nation Gypsum and BP West Coast Products. Sub-project 9D will serve 628 AFY for industrial uses at THUMS Long Beach and TOPKO. The four sub-projects will use 6- to 20-inch pipelines and are projected to have a capital cost of $32.9 million.

Alternative 4 has already been implemented by LBWD, as recycled water deliveries to Millikan High School began in October 2011. There is currently no time schedule for implementation of the other projects.

5.2 Los Coyotes WRP

5.2.1 City of Lakewood Master Plan

The City of Lakewood commissioned Wildan and Associates to conduct a study to determine the feasibility of expanding its recycled water distribution system westward. This potential expansion could serve an additional 159 AFY to city parks (e.g., Bolivar and Biscailuz Parks), numerous medians and parkways, and a number of public and private schools (e.g., Craig William and Lakewood Elementary Schools, the Intensive Learning Center, St. Pancratius School, and Hoover Junior High School). Such an extension would require about 7.7 miles of pipeline to be built in five phases and could cost as much as $7.25 million. This study was completed in July 2010; however, there is no implementation schedule as funding is currently unavailable.

5.3 POMONA WRP

5.3.1 WALNUT VALLEY WATER DISTRICT

WVWD contracts directly with the Sanitation Districts for the purchase of recycled water, instead of receiving recycled water through the City of Pomona. In conjunction with the Sanitation Districts, WVWD has already begun the process of repairing/replacing the gravity line that serves both it and the Sanitation Districts' Spadra Landfill. Approximately half of the gravity line between the Pomona WRP and the Spadra site has already been replaced with 24-inch mortar-lined and coated steel pipe. Also in the future, WVWD and the Sanitation Districts may jointly construct a storage reservoir at or near the Spadra site to serve both agencies and make use of Pomona WRP recycled that is currently lost to the river.

WVWD contracted with Cathcart Garcia von Langen Engineers to develop a master plan for the future orderly expansion of its recycled water distribution system by up to an estimated 4,550 AFY, although the currently proposed additional reuse sites have an expected demand of 1,676 AFY. This master plan detailed the potential for expansion, primarily into the City of Diamond Bar and the Walnut Village annexation into the City of Walnut and determined what new infrastructure and facilities would be required. In addition to pipelines (ranging from 6- to 24-inch), seven pump stations, five new reservoirs, three reservoir conversions, and four back-up wells would need to be added to the recycled water distribution system to accommodate the expansion. Completion of this $24 million system expansion is contingent upon the construction of a storage reservoir, as there are insufficient flows in the gravity distribution system as currently configured. In addition to its continued use of recycled water from the Pomona WRP, WVWD is expected to connect to the East San Gabriel Regional Recycled Water System detailed in Section 5.4.2.

5.3.2 CITY OF POMONA MASTER PLAN

The City's consultant, Carollo Engineers, completed a master plan for expanding their recycled water distribution system in November 2009. The additional demand for their entire potential customer base was estimated at 6,150 AFY. However, the estimated maximum daily demand would be 11.6 MGD, which is not available to the City from the Pomona WRP. Therefore, additional sources of water would be required if all the potential reuse sites were connected. These water sources include potable water, non-potable groundwater from existing or rehabilitated wells, increased sewage flow to the Pomona WRP (i.e., process optimization/flow equalization), and recycled water from the Inland Empire Utilities Agency (although this agency has stated that it will not be delivering recycled water to the City within the Master Plan's time horizon of 2030).

The proposed expansion of the City's recycled water distribution system was divided into 10 segments serving an ultimate demand of 2,981 AFY. Because of the high, anticipated cost of implementing the entire proposed expansion (in addition to new distribution lines, eight new pump stations, five new storage reservoirs, and four additional pumps were needed), the Master Plan recommended that only three segments be built at this time, as they were the most cost effective and could be served by the existing recycled water supply from the Pomona WRP. This recommended project would be built in four phases from 2010 to 2030 and would yield an additional 1,497 AFY at an estimated capital cost of $20.7 million. The Master Plan also recommended replacing the existing pumps at the Pomona WRP with variable frequency drives prior to construction of the third segment so that more of the WRP's production could be beneficially reused with less discharge to the San Jose Creek channel. The seven remaining segments, if built, would be constructed in two phases after 2030, serving an additional 1,484 AFY of demand at an estimated capital cost of $52 million.

Independent work has already begun on the delivery of recycled water from Cal Poly to Forest Lawn's Covina Hills cemetery. A potable water standby agreement has negotiated with Golden State Water Company that will allow recycled water irrigation use at this site. As part of an amendment to their recycled water agreement,

Forest Lawn will construct a pump station and piping to lift recycled water from Cal Poly's recycled water reservoir up to Forest Lawn's irrigation water tanks, and the Cal Poly irrigation water lift station will be upgraded to increase maximum flow rate from 3,000 to 4,000 gpm to accommodate the cemetery's demands. Forest Lawn expects to begin using 300 AFY of recycled water in 2013, which will increase gradually until the final build-out of the cemetery occurs in the year 2160, with an ultimate projected irrigation demand of 900 AFY.

5.4 San Jose Creek WRP

5.4.1 Groundwater Recharge Program

USGVMWD and its partner, the San Gabriel Valley Municipal Water District (SGVMWD), had been developing a plan to replace imported State Project water (purchased either through MWD or directly) with a like amount of recycled water from the Sanitation Districts' San Jose Creek WRP West to prevent long-term groundwater overdraft of the basin. The initial proposal was for transmission line running north along the San Gabriel River to the Santa Fe Spreading Grounds to deliver a long-term average of 16,000 AFY (maximum of 25,000 AFY) of tertiary treated recycled water.

Because of opposition from a local brewery and a California Environmental Quality Act (CEQA) lawsuit, a compromise "demonstration" recharge project was proposed that would use a of maximum of 10,000 AFY of recycled water for recharge downstream of the Santa Fe Dam at five concrete drop structures in the San Gabriel River. The five, new discharge points in the San Gabriel River that would be the recharge locations for this project were identified in the June 2009 NPDES permit for the San Jose Creek WRP. Contracts for the sale of recycled water from the Sanitation Districts to USGVMWD and SGVMWD were executed in August and September 1998, respectively. However, permit action was delayed when LARWQCB staff proposed that this groundwater recharge project immediately comply with surface water human health-based criteria (California Toxics Rule, or CTR) for water bodies (i.e., the unlined San Gabriel River) that are existing or potential drinking water sources. CTR criteria for some constituents are significantly lower than Title 22 drinking water standards and are not attainable with current conventional tertiary treatment. Since that time, the designation as an existing or potential drinking water source has been removed from a number of water bodies in the Los Angeles Basin, including this portion of the San Gabriel River. CTR human health criteria for non-drinking water sources and criteria for aquatic life and all other applicable Basin Plan Objectives would be applied to the recycled water at the point of discharge to the San Gabriel River. Subsequently raised concerns about the disinfection by-product, NDMA, in recycled water had continued to prevent this project from moving forward. As such, the only way to obtain compliance with these requirements would be by the addition of advanced treatment to that portion of the recycled water to be recharged. Because of the substantial additional cost that would be incurred, the project had been indefinitely postponed.

Interest in this project was rekindled following MWD's May 2007 cessation of all deliveries of imported water for spreading. USGVMWD, WRD and the Sanitation Districts entered into a Memorandum of Understanding (MOU) on September 24, 2008 to develop the Groundwater Reliability Improvement Program (GRIP). As envisioned, Phase I of GRIP would consist of an advanced treatment plant (MF/RO/advanced oxidation) located at or adjacent to San Jose Creek WRP West that would produce 18,000 AFY for recharge in both the Main San Gabriel and Central groundwater basins. Phase II would increase production capacity to 46,000 AFY. In November 2010, a Joint Powers Authority was formed by USGVMWD, WRD, and the Sanitation Districts to proceed with the project. However, despite initial progress, the USGVMWD Board of Directors voted in March 2011 to remove their agency from the Joint Powers Authority due to shifting replenishment needs and cost concerns. Instead, USGVMWD has received a $150,000 grant from USBR to conduct a feasibility study to offset current interruptible imported supplies with 10,000 AFY of locally supplied recycled

water within the next 8 to 13 years. The feasibility study will evaluate multiple sources of recycled water and compare these alternatives against a "no project" alternative in order to determine the best method for replenishment for the study area. WRD and the Sanitation Districts are moving forward with GRIP as a 21,000 AFY project focused on replenishment at the Montebello Forebay. The two agencies have begun working on the preliminary engineering to support the environmental documentation for the project (CEQA/NEPA) and anticipate that CEQA/NEPA work will begin in 2013.

5.4.2 East San Gabriel Valley Regional Recycled Water System

For a number of years, the City of Industry has been planning to extend its recycled water distribution system, since the demand at its single reuse site (Industry Hills Recreation Area) only uses a small portion of the capacity of the City's 36-inch distribution line coming from the Sanitation Districts' San Jose Creek WRP. The proposed expansion involved several alternatives over the years, including the possibility of locating a 10,000 AF open reservoir in the Tres Hermanos area of the City of Diamond Bar for seasonal storage of recycled water. In 2000, an MOU to develop a regional distribution system was signed by the City of Industry, Suburban Water Systems (SWS, which had purchased the City of West Covina's water system), BKK Landfill, RWD, and WVWD. A revised contract between the Sanitation Districts and City of Industry was negotiated to include the additional quantities of recycled water, and was signed on September 27, 2000. Because of anticipated higher recycled water demands, the City of Industry has requested an adjusted supply contract with the Sanitation Districts to support these needs. This regional system is expected to utilize 1,710 AFY more, and will be developed in two separate portions: one serving the City of Industry and RWD, and the other developed by USGVMWD to serve SWS, BKK Landfill, and WVWD. These are discussed separately below.

City of Industry/RWD – The City and its recycled water system operator, RWD, have completed a new pump station and 2.1 MG reservoir at Anaheim-Puente Road. In addition, construction has begun on an expansion of the City's pump station at San Jose Creek WRP East. This project will include addition of a fourth pump, replacement of the existing three pumps, installation of a larger surge tank, new control panels, and a new, separate power supply from SCE. The contract was awarded to Pacific Hydrotech in December 2010, construction began in August 2011, and completion will be mid-2012. RWD continues to expand its recycled water distribution system, adding new customers on a regular basis (discussed in Section 2.5.3 above). Construction of Mission Energy's Walnut Creek Energy Park 500 MW plant in the City of Industry has begun and deliveries of an estimated annual average 485 AFY (maximum estimated annual demand of 1,385 AFY) of recycled water for cooling tower use and landscape irrigation of the site are expected to begin in May 2013.

USGVMWD – USGVMWD's portion of the system is called the "Phase II-B Expansion" and will serve 1,315 AFY to 34 customers. This system is being constructed in four packages, consisting of a pump station, storage reservoir and approximately 15.1 miles of 6- to 24-inch pipeline. The first package pipeline was completed in December 2010 and connects to the City's existing 36-inch pipeline at the intersection of Azusa Avenue and Temple Avenue. The pipeline extends to the Big League Dreams Development/BKK landfill entrance and continues east to Nogales Street. A new reservoir was built as part of this package, with completion occurring in December 2011. The second package pipeline was completed in August 2011 and continues north along Azusa Avenue to the South Hills Country Club, a proposed recycled water customer. Site connections for both sub-phases are anticipated to be completed by June 2012.

The third package consists of approximately 3.8 miles of pipeline ranging in size from 4- to 12-inches in diameter. The pipelines are located in the City of West Covina and branch off of the Package 2 recycled water main installed in Azusa Avenue and Vine Avenue. The fourth package consists of approximately 3.4 miles of pipeline ranging in size from 4- to 12-inches in diameter. The pipelines are located in the cities of West Covina and Walnut along Shadow Oak Drive, Gemini Street, Stephanie Drive, Woodgate Drive and other local side streets. Construction of these packages is expected to be completed in September and October 2012, respectively, with retrofits of the recycled water customers expected in April 2013.

5.4.3 La Puente Valley County Water District Master Plan

The La Puente Valley County Water District (LPVCWD) hired MWH to produce a recycled water master plan for that agency, which completed the task in May 2011. LPVCWD's potable water source is groundwater and it currently pumps over its annual allotment by approximately 40%, thereby requiring them to pay replenishment fees to the basin Watermaster. A total of 74 reuse sites with a demand of 375 AFY in and adjacent to its service area within the City of Industry were identified. The most cost effective of the four alternatives evaluated has LPVCWD tapping into the City of Industry's recycled water distribution line along the San Jose Creek Channel at Hacienda Blvd., with a smaller connection to the City of Industry transmission line on Azusa Ave., serving a total of approximately 280 AFY through a new pump station at an estimated cost of $9.1 million. The LPVCWD Board of Directors has yet to finalize this document. According to the LPVCWD General Manager, the cost of recycled water for this project will be too high to allow for its construction in the foreseeable future without outside funding. However, this project could possibly be included as part of the USGVMWD Phase II-B Expansion detailed in Section 5.4.2, above.

5.4.4 Southeast Water Reliability Project

CBMWD is proceeding with this system expansion that will loop the Rio Hondo (Torres) and Century (Ibbetson) systems for flow reliability and system pressure and to aid in chlorination. The ultimate capacity for the combined, looped systems is projected to be 15,000 AFY. The selected option is now called the Southeast Water Reliability Project. This will consist of approximately 11.4 miles of 30-inch cement mortar lined and coated steel pipeline to be built from the City of Pico Rivera, through the cities of Montebello, Commerce, and East Los Angeles, to the City of Vernon. This extension would serve the Montebello Golf Course and other irrigation sites and a second proposed power plant in the City of Vernon, as well as other industrial users. (However, the City of Vernon has officially cancelled its plans for this facility.) Letters of intent to serve recycled water have been received by the cities of Pico Rivera and Montebello, and the City of Vernon has already adopted a recycled water rate. Construction on the first phase from Pico Rivera to the Montebello Golf Course was completed in the fall of 2011and several sites have already been connected. Approximately 400-500 AFY of the 1,000 AFY of identified demand will begin using recycled water almost immediately. Construction of the Phase 2 from Montebello to Vernon will depend on funding, securing a customer base and other outstanding institutional issues.

In addition, CBMWD had planned to construct a four million gallon recycled water storage reservoir at its Rio Hondo pump station that would provide daily operational storage. In the meantime, a potable water back-up system was installed at the pump station in 2001. Construction on the tank had been put on hold due to financial considerations, but is expected to be a part of the first phase of the SWRP expansion. The site of the storage tank may be relocated to the Montebello Hills to take advantage of elevation for gravity feed of the system.

In 2008, CBMWD was approached by the LADPW regarding the possibility of constructing a new 8-inch recycled water pipeline on Mines Avenue in the City of Pico Rivera that could deliver recycled water for landscape irrigation to multiple sites on or near Mines Avenue. The "Pico Rivera Recycled Water Project – Phase I" is a sub-project to LADPW's "San Gabriel River Coastal Basin Spreading Grounds Pump Station and Pipeline" project, a 78-inch pipeline that will act as conduit for moving storm water, imported water, or recycled water between the San Gabriel and Rio Hondo spreading grounds. After much discussion with LADPW staff and the City of Pico Rivera, and with the support of Congresswoman Grace Napolitano, the recycled water pipeline was added to LADPW's Request for Proposals (RFP) for the 78-inch conduit. The agreement stipulates who is the lead agency and what percentage of funding each agency responsible for. The agreement divided the Pico Rivera Recycled Water Project into two phases:

Phase I – Phase I is a 1-mile long, 8-inch recycled water pipeline placed in the same trench used for the larger 78-inch conduit project. LADPW is the lead agency for the 8-inch recycled water pipeline and will be responsible for all construction and construction management. CBMWD's role is to provide a pipeline design. Because this project is important to all three agencies, final project costs will be equally split three ways.

Phase II – The second phase in the agreement is a project that will connect the Mines Avenue pipeline to CBMWD's existing recycled water system and the service laterals that will provide recycled water to the individual sites along the Mines Avenue corridor. CBMWD will be the lead agency on this portion of the Pico Rivera Recycled Water Project. Project costs will be split evenly with the City of Pico Rivera. Customer connections began in the summer of 2011.

With the assistance from Congresswoman Napolitano's office, CBMWD applied for funding through the United States Bureau of Reclamation's (USBR's) Title XVI program. The Title XVI program provides for cost recovery on 25% of all construction costs. If CBMWD receives federal funding, the grant will be applied equally to everyone's share. Since construction costs will be shared with LADPW (Phase I) and the City of Pico Rivera (Phase I and II), the impact to CBMWD will be greatly reduced. Federal funding, if approved, will further reduce impacts to CBMWD. Finally, construction bids are coming in much lower than anticipated in the engineer's estimates, so this will result in additional savings to CBMWD. All construction costs will be covered through pay-go funds.

As part of its 2008 Recycled Water Master Plan, CBMWD envisioned that additional connections would be made to the SWRP line to supply recycled water into the USGVMWD service area. No further action has been taken by either agency on this potential extension. CBMWD has had a consultant start on an update of their recycled water Master Plan, with a final report expected by the end of July 2012.

5.4.5 CITY OF LA MIRADA EXTENSION

CBMWD has just begun looking at a new recycled water trunk line from the City of Santa Fe Springs to serve an identified 1,200 AFY of demand in the City of La Mirada. Both the City and the local purveyor, Suburban Water Company, are extremely interested in getting recycled water. CBMWD is currently in the planning process and is looking at potential pipeline routes, customer base, booster pump location, etc. CBMWD expects to begin serious work on this project in the fall of 2012.

5.5 WHITTIER NARROWS WRP

5.5.1 USGVMWD PHASE II-A ROSEMEAD EXTENSION

USGVMWD will be adding approximately 270 AFY of additional recycled water demand at 17 new sites (schools, parks, commercial and office buildings, and street medians) for landscape irrigation and cooling towers. A mitigated Negative Declaration was adopted in April 2009, with construction beginning in the fall of 2009 on 14,467 linear feet of pipeline from their recycled water system serving the Whittier Narrows Recreation Area. The extension will begin with 3,633 feet of 12-inch line running west along Garvey Ave. between River Ave. and Earle Ave., with two, short 6-inch laterals running north on Willard Ave. and Earle Ave (761 and 822 feet, respectively). A 6,393 foot, 8-inch line will Tee off of the 12-inch line on Garvey and run south on Walnut Grove Ave. to a point just north of Cameta Dr. From this 8-inch line, a 180 foot, 4-inch lateral will branch off to the west at Gravalia Ave., a 1,440 foot, 6-inch lateral will branch off to the east on Klingerman St., and a 1,258 foot, 6-inch line will branch off to the west on Rush St. All of the pipeline had been installed by the end of 2010, with retrofits and connections to be completed by early 2012.

5.5.2 CITY OF ARCADIA (USGVMWD PHASE III EXTENSION)

The City of Arcadia, along with USGVMWD, commissioned Stetson Engineers to examine the feasibility of supplying recycled water to various sites within the city. A draft report was completed in December 2006 identifying an extension of USGVMWD's distribution system from the Whittier Narrows WRP as the most feasible alternative compared with obtaining recycled water from the San Jose Creek WRP or LADWP's LA-Glendale WRP. The proposed project consists of approximately 64,100 feet of 14- and 16-inch distribution lines, a 900 HP booster pump station, an existing 1.5 million gallon storage reservoir for an estimated cost of $7.6 million. The pipeline route is proposed to run east on Rush Street, north on Santa Anita Avenue, north along the Rio Hondo, west on Live Oak Avenue, then north again on Santa Anita to Foothill Blvd. Within the main part of Arcadia, the pipeline would form a loop going west on Foothill/Colorado Blvd., then south on Michillinda Avenue, then east on Huntington Drive back to Santa Anita. This system would provide recycled water to 23 potential customers with a total annual recycled water demand of approximately 644 AFY and a peak demand of 4.3 MGD. Another 23 sites with a total annual demand of 96 AFY were identified in the vicinity, although not adjacent to the proposed pipeline route, and would require the investment in additional service laterals. The four largest sites, Santa Anita Racetrack, the Los Angeles County Arboretum, Arcadia County Park, and Santa Anita Golf Course, make up 56% of the total identified demand for water. This study did not include any potential reuse sites that might be located along the pipeline route outside of the City of Acadia. The completion of the project was initially estimated to be approximately 2013, although no specific timetable has been set for implementation. This project has been designated Phase III by USGVMWD.

5.6 JOINT WATER POLLUTION CONTROL PLANT

5.6.1 WEST BASIN MUNICIPAL WATER DISTRICT

The WBMWD's June 2009 Master Plan envisions the expansion of their recycled water system deliveries to 70,000 AFY by 2020 and to 83,000 AFY by 2030, including expansion of their Carson Regional Water Recycling Facility (CRWRF) from 6 to 23 MGD. Their study of the options found that both their pump station at the City of Los Angeles' Hyperion treatment plant that supplies their effluent for recycling and their distribution system would require extensive expansion in order to handle the additional flows from their El Segundo water recycling facility needed to serve reuse sites in the Carson and Palos Verdes areas. A more cost effective option would be to supply 20% of their future needs, or up to approximately 16,600 AFY, from the Sanitation Districts JWPCP. This option would also help WBMWD meet its contractual obligation of using recycled water of Sanitation Districts' origin for future expansions in exchange for capacity in the JWPCP ocean outfall for disposal of brine from the CRWRF. The recommended option was a new $187.8 million, 26 MGD treatment plant at JWPCP to augment WBMWD's Title 22 distribution system and supply advanced treated recycled water to such large reuse customers at the Dominguez Gap Seawater Intrusion Barrier and the bp Carson refinery expansion, as well as for the Amoco and Watson cogeneration facilities. The option of using JWPCP effluent is expected to save WBMWD approximately $25 million in capital costs. The location of this new treatment plant could be at JWPCP, the CRWRF, or along the transmission line route between the two facilities. According to the Master Plan's recommended CIP, acquisition of land for the new treatment plant is scheduled to occur in FY11-12; however, construction of the new treatment facilities is not scheduled until FY20-25.

5.7 VALENCIA AND SAUGUS WRPS

5.7.1 CASTAIC LAKE WATER AGENCY

In 2002, CLWA, the regional importer and wholesaler of State Water Project water in the Santa Clarita Valley, developed the Recycled Water Master Plan for the use of 17,400 AFY of recycled water produced at both the Sanitation District's Valencia and Saugus WRPs by the year 2030. CLWA requires an update of the 2002 Recycled Water Master Plan in order to compile the latest information with regard to potential recycled water users, design of infrastructure and the availability of recycled water to serve them. In March 2012, CLWA submitted an Integrated Regional Water Management planning grant application to the DWR for the development of the Master Plan and subsequent Environmental Impact Report (EIR). CLWA is expected to enter into a new contract with the Sanitation District the purchase and sale of recycled water to support the updated Master Plan, when completed. Implementation of the Master Plan has been delayed since the first phase of the distribution system went on line in 2003 for a number of reasons: lack of funding for infrastructure, concern with potential permitting requirements, uncertainty related to salinity issues in the Santa Clara River, and less than expected growth resulting in slower recycled water flow increases. In 2012, CLWA, along with the local purveyor Valencia Water Company, were awarded grant funding for the next phase of their recycled water system, Phase 2C, which is expected to deliver up to 900 AFY of recycled water.

In June 2009, CLWA began investigating the feasibility of delivering recycled water from the Sanitation Districts' Saugus WRP. This Phase 2A of the Master Plan consists of a 4,500 gpm booster pump station, 12,000 linear feet of transmission pipeline, 17,000 linear feet of lateral lines and a 1.75 MG storage reservoir. This system would deliver and estimated 511 AFY of recycled water from the Saugus WRP to the 80 acre Central Park, the River Village and Bridgeport developments and assorted city landscaping. CLWA released a draft Mitigated Negative Declaration/Environmental Assessment and Finding of No Significant Impact for this project on May 4, 2011. CLWA has indicated the construction of the project is delayed approximately five years.

5.8 LANCASTER AND PALMDALE WRPS

5.8.1 ANTELOPE VALLEY REGIONAL RECYCLED WATER DISTRIBUTION PROJECT

Sanitation Districts staff continue to work with the cities of Lancaster and Palmdale and Los Angeles County Waterworks District 40, Antelope Valley, (Waterworks) to develop a regional recycled water distribution system ("backbone system") for municipal and industrial users. The proposed North Los Angeles/Kern County Regional Recycled Water Project (AV Backbone) includes facilities for the primary distribution system to provide disinfected tertiary recycled water produced from the Sanitation Districts' Palmdale and Lancaster WRPs and from Rosamond Community Services District's Rosamond WRP to end users in the Antelope Valley Region. The Project is being built in phases and one segment, the Division Street Corridor, is already constructed and implemented in the City of Lancaster using tertiary treated recycled water produced by the Lancaster WRP (detailed in Section 4.1.5).

The City of Palmdale and Waterworks have entered an agreement to design, construct and implement a southern segment of the AV Backbone. The main backbone pipeline will originate at the Palmdale WRP, travel west down Rancho Vista Blvd., then north on 10th St. East, west on Avenue O-8 and north along Sierra Highway, terminating at Columbia Way and connecting to an extension of the Division Street Corridor (described below in Section 5.2.15). A lateral would run east along Columbia Way to serve the proposed Palmdale Hybrid Power Plant (PHPP), a 570-megawatt electric generating facility currently in the permitting process. Another portion of the main backbone pipeline will head west from Sierra Highway, along Avenue O,

to the Amargosa Creek, and roughly parallel the creek to reach the Waterworks District's tank site facility next to the Antelope Valley Freeway, at 10th St. West and Avenue O-12. Facilities will also include the pump station and forebay tank to be located at the Palmdale WRP. And a storage tank at the Waterworks' tank site next to the Antelope Valley Freeway. This segment of the backbone system is currently in the design phase and approximately 80 percent complete. The plan is for this portion of the AV Backbone to be completed at nearly the same time as the completion of the PHPP, whose funding will also finance the recycled water pipeline. The PHPP was approved by the California Energy Commission in August 2011. The City of Palmdale will need to secure a developer and funding for the PHPP. Construction of the PHPP is estimated to take about 30 months once initiated. The PHPP is projected to use up to 4,300 AFY of recycled water, which will be distributed by Waterworks by means of a new pump station (plans for this pump station are awaiting final approval and funding of the PHPP. A contract for the sale of up to 13,500 AFY of recycled water produced at the Lancaster and Palmdale WRPs to Waterworks was signed in January 2008.

5.8.2 CITY OF PALMDALE

The City of Palmdale signed a contract with the Sanitation Districts in July 2009 for the purchase of up to 2,000 AFY of recycled water from the Palmdale and Lancaster WRPs. The City is initially planning on installing a recycled water distribution line along 30th St. East, south to Avenue R-8 then east until 55th St. East with laterals to five parks: McAdam, Palmdale Oasis, Yellen, Joshua Hills, and Domenic Massari. These parks are expected to use approximately 1,000 to 1,200 AFY. The City also plans on using recycled water on the numerous (150 to 200) Landscape Maintenance Districts (LMDs) and five elementary schools along the route of the recycled water line. In addition, any schools or businesses that are easily accessible to this water will also be connected. The City and Los Angeles County Waterworks are currently planning for the portion of the Backbone project that will connect the Palmdale WRP to the proposed PHPP (discussed in Section 5.7.1, above). The City is installing a temporary pump station to deliver recycled water to McAdam Park by the fall of 2012.

5.9 CONCEPTUAL WATER RECYCLING PROJECTS

The most recent statewide water crisis that ran from 2006-09 spurred numerous entities into giving more serious consideration to water recycling in their service areas. This sense of urgency was further stimulated by the passage of SB 7 in 2009 that requires urban water agencies to reduce per capita water consumption by 20 percent by the year 2020 (commonly referred to as the "20 x 2020 Plan"). And while the water supply situation in the State has improved considerably of late, several ambitious, large-scale water recycling projects involving groundwater replenishment continue to be investigated. The list of conceptual projects below is not meant to be exhaustive. Rather it is a listing of the most likely or ambitious projects the Sanitation Districts are currently tracking.

5.9.1 MWD ADVANCED TREATMENT PLANT AT JWPCP

In FY 09-10, JWPCP provided primary and secondary treatment to approximately 280.5 MGD (314,284 AFY) of wastewater prior to discharge through outfall tunnels to the Pacific Ocean, with water recycling at the facility being limited to in-plant uses. MWD and the Sanitation Districts have partnered to study the potential for a regional, indirect potable reuse program to advance treat as much as 200 MGD (224,110 AFY) of treated wastewater that is currently discharged to the Pacific Ocean. Implementation of such a large-scale regional reuse program could provide MWD with a significant supply of reliable, drought-resistant water to supplement imported raw water supplies and would be consistent with the enhanced regional approach currently being considered in their Integrated Resources Plan (IRP). Such a project would involve complex interagency agreements, extensive regulatory approvals, public outreach, and considerable capital costs.

From a technical standpoint, this project would require new advanced treatment facilities (e.g., MF/RO/UV), a regional distribution system to groundwater basins (e.g., Montebello Forebay and/or the Main San Gabriel Basin), and injection and extraction wells, modeled somewhat after the Groundwater Replenishment System in Orange County. No estimates of capital costs or timeline for implementation for such a project have been made at this time. Nevertheless, pilot scale testing of treatment systems is currently underway, facilitated by a $330,000 grant from the USBR.

5.9.2 Downey/Cerritos Advanced Treatment Plant for Recharge

The cities of Downey and Cerritos are jointly investigating a potential project to take 7.1 MGD (8,000 AFY) of effluent from the Los Coyotes WRP, treat it to an advanced level (MF/RO/UV), and pipe approximately 6,000 AFY (after brine losses) north to the Montebello Forebay where it will be stored underground for the exclusive use by those cities. In addition to technical, financial and permitting obstacles, implementation of this project would require that the existing Basin Adjudication would need to be significantly revised.

5.9.3 Scalping Plants

The siting of various scalping plants throughout Los Angeles County, including the foothill communities and the Palos Verdes Peninsula, has been proposed. The intent of the scalping plants is to provide a localize supply of recycled water, primarily for groundwater replenishment, but also for limited direct use. In general, the siting of such small facilities is contrary to the goals of the Sanitation Districts' recycled water planning efforts. The Sanitation Districts prioritize full utilization of the existing WRPs and regional distribution projects because they are generally much more cost effective. Nevertheless, the Sanitation Districts have supported various agencies evaluations into scalping plants in the event one can be demonstrated to be cost effective.

The Foothill Municipal Water District (FMWD), a member of the Foothill Water Coalition (FWC), is investigating the potential of recharging groundwater with tertiary MBR effluent. The project would consist of several small (0.25-1 MGD) scalping plants that would take raw sewage and treat it using MBR technology. The FMWD is in the process of applying for grants to help fund this project, however, there are other obstacles to overcome, such as permitting and siting. In addition, construction of scalping plants will decrease the amount of water available at the already constructed downstream WRPs. This poses a problem because recycled water has already been contracted for at these downstream WRPs.

The Three Valleys Municipal Water District (TVMWD), also a member of the FWC, is similarly investigating construction of an upstream scalping plant that would take raw sewage and treat it using MBR technology. Many of the same technical, financial, and permitting obstacles that exist for the FMWD also apply to TVMWD.

The Sanitation Districts began investigating the potential for locating a 2 MGD, flow equalized MBR plant in the Rancho Palos Verdes area that would recycle wastewater tributary to the Abalone Cove Pumping Plant. This driving force behind this project is the maintenance cost and potential for sewage spill of the Joint Outfall "J" Unit 1F force main, which is subject to landslides in the Abalone Cove and Portuguese Bend areas. While four alternatives (including a sub-alternative) were identified, all required significant capital and O&M costs, rendering them all less desirable than reconstruction of the existing sewer line.

LIST OF ABBREVIATIONS

AF	acre-foot
AFY	acre-foot per year
AVTTP	Antelope Valley Tertiary Treatment Plant
AWWARF	American Water Works Association Research Foundation
BOD	biological oxygen demand
CBMWD	Central Basin Municipal Water District
CDM	Camp/Dresser/McKee
CEQA	California Environmental Quality Act
CLWA	Castaic Lake Water Agency
COD	chemical oxygen demand
CTR	California Toxics Rule
DIP	ductile iron pipe
DPH	State Department of Public Health (formerly Health Services)
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
FMP	Farm Management Plan
FMWD	Foothill Municipal Water District
FWC	Foothill Water Coalition
FY	fiscal year
GAC	granular activated carbon
gpm	gallons per minute
HP	horsepower
JOS	Joint Outfall System
JWPCP	Joint Water Pollution Control Plant
LACDPR	Los Angeles County Department of Parks and Recreation
LACDPW	Los Angeles County Department of Public Works
LADWP	City of Los Angeles Department of Water and Power
LAWA	Los Angeles World Airports
LBWD	Long Beach Water Department
LPVCWD	La Puente Valley County Water District
LVLAWTF	Leo Vander Lans Advanced Water Treatment Facility
MBR	membrane bioreactor

MF/RO	microfiltration/reverse osmosis
MGD	million gallons per day
MRF	Materials Recovery Facility
MTA	Metropolitan Transportation Authority
MWD	Metropolitan Water District of Southern California
MWH	Montgomery-Watson-Harza
NDMA	N-nitrosodimethylamine
NDN	nitrification-denitrification
O&M	operation and maintenance
OCWD	Orange County Water District
PERG	Puente Hills Energy Recovery from Landfill Gas Facility
PHPP	Palmdale Hybrid Power Plant
PVC	polyvinyl chloride
PWD	Pomona Water Department
RWD	Rowland Water District
RWQCB	Regional Water Quality Control Board
SCE	Southern California Edison
SCVJSS	Santa Clarita Valley Joint Sewerage System
SJCWRP	San Jose Creek Water Reclamation Plant
SGVMWD	San Gabriel Valley Municipal Water District
SGVWC	San Gabriel Valley Water Company
SRF	State Revolving Funds
SWS	Suburban Water Systems
THUMS	Texaco, Humboldt, Union, Mobil, Shell
TOC	total organic carbon
TVMWD	Three Valleys Municipal Water District
USBR	United States Bureau of Reclamation
USGS	United States Geologic Survey
USGVMWD	Upper San Gabriel Valley Municipal Water District
UV	ultraviolet light disinfection
WDR	waste discharge requirements
WRD	Water Replenishment District of Southern California
WRP	water reclamation plant
WVWD	Walnut Valley Water District

APPENDIX A

CHRONOLOGY OF SANITATION DISTRICTS' REUSE ACTIVITIES

July 1927	The Tri-City Plant serving the cities of Pomona, Claremont, and La Verne is placed into service and the effluent is used for irrigation of crop and pasture land by the Diamond Bar Ranch Company and the Northside Water Company.
December 1941	The 0.36 MGD Lancaster WRP is placed into operation.
April 1949	Sanitation Districts' Report upon the Reclamation of Water from Sewage and Industrial Wastes in Los Angeles County, California is published which demonstrated the feasibility of water reclamation and eventual reuse.
January 1952	The Lancaster WRP is expanded from 0.36 to 1.35 MGD.
September 1953	The 0.75 MGD Palmdale WRP is placed into operation.
September 1954	Sanitation Districts assumes operations of Tri-City Plant.
November 1958	The Palmdale WRP is expanded from 0.75 to 2.5 MGD.
November 1958	Sanitation Districts' A Report Upon the Potential Reclamation of Sewage Now Wasting to the Ocean in Los Angeles County outlining the financing and construction of the Whittier Narrows WRP is published.
May 1959	The first direct deliveries of effluent from the Palmdale WRP for alfalfa irrigation begin.
October 1959	The new 6.5 MGD Lancaster WRP is constructed and placed into operation. The original plant ceased operation two months later.
1960	Edwards Air Force Base constructs "C" dike on Rosamond Dry Lake to impound effluent from the Lancaster WRP, forming Piute Pond.
July 1962	The 15 MGD Whittier Narrows WRP is placed into operation, becoming first of the "upstream" treatment plants in the Sanitation Districts' JOS.
July 1962	The 0.25 MGD Saugus WRP is placed into operation, with effluent being discharged into the Santa Clarita River.
August 1962	The first deliveries of recycled water from the Whittier Narrows WRP begin for groundwater replenishment in the Montebello Forebay of the Central Basin.
November 1962	The Angeles Crest Development Company completes the 0.1 MGD La Cañada WRP on the site of the La Cañada-Flintridge Country Club to treat wastewater produced by the homes surrounding the golf course. Recycled water produced by this facility is still used as a source of supply for the lakes and the irrigation system on the golf course.

July 1963	The Sanitation Districts produce A Plan for Water Re-use that studied the reclamation potential for the entire JOS and proposed the construction of 11 water reclamation facilities. However, this plan was only partially implemented.
August 1964	The Saugus WRP is expanded from 0.25 to 0.75 MGD.
October 1965	The Saugus WRP is expanded from 0.75 to 1.5 MGD.
June 1966	The 4 MGD Pomona WRP is constructed to replace Tri-City Plant.
September 1966	The La Cañada WRP is purchased by the Sanitation Districts.
July 1967	The 1.5 MGD Valencia WRP is placed into operation, with effluent begin discharged into the Santa Clarita River.
February 1968	The Saugus WRP is expanded from 1.5 to 5 MGD.
May 1968	The Central and West Basin Water Replenishment District (now the Water Replenishment District of Southern California, or WRD) contracts for the purchase of recycled water from the proposed San Jose Creek WRP.
June 1969	The County of Los Angeles constructs the 0.6 MGD Antelope Valley Tertiary Treatment Plant (AVTTP) to further treat Lancaster WRP effluent for use at Apollo Lakes Regional County Park, which opened in November 1972.
March 1970	The Pomona WRP is expanded from 4 to 10 MGD.
October 1970	The 12.5 MGD Los Coyotes WRP is placed into operation.
May 1971	The La Cañada WRP is expanded from 0.1 to 0.2 MGD.
June 1971	The 37.5 MGD San Jose Creek WRP is placed into operation.
September 1972	The Palmdale WRP is expanded from 2.5 to 3.1 MGD.
May 1973	The 12.5 MGD Long Beach WRP is placed into operation.
December 1973	The first direct deliveries of recycled water from the Pomona WRP begin through the Pomona Water Department (PWD) to Cal Poly Pomona.
June 1975	The Los Coyotes WRP is expanded from 12.5 to 37.5 MGD.
April 1976	The Valencia WRP is expanded from 1.5 to 4.5 MGD.
February 1977	The Sanitation Districts' Pomona Virus Study final report is published, demonstrating that direct filtration (adding coagulant just prior to inert media filters) was as effective at removing virus from secondary effluent as coagulation followed by a separate flocculation basin and then filtration. This led to the construction of effluent filters at the upstream WRPs in the late 1970's. The WRPs were then classified as tertiary treatment facilities.

June 1978	The first direct deliveries of recycled water from the San Jose Creek WRP begin with the adjacent California Country Club.
October 1978	Revised wastewater reclamation regulations are adopted by the California Department of Health Services (now California Department of Public Health, or CDPH) as Title 22 of the California Code of Regulations. The effluent from the Sanitation Districts' tertiary treatment plants can be used for all of the approved applications contained in these regulations.
November 1978	The first direct deliveries of recycled water from the Los Coyotes WRP begin through the cities of Cerritos and Bellflower with the Ironwood 9 Golf Course and Caruthers Park, respectively.
October 1979	The first industrial use of recycled water occurs as Garden State Paper (later Blue Heron Paper Company) begins to use more than 3 MGD of Pomona WRP effluent for recycling old newspapers.
August 1980	The first direct deliveries of recycled water from the Long Beach WRP begin through the City of Long Beach Water Department (LBWD) with El Dorado Park West and El Dorado Golf Course.
January 1981	Contract signed with City of Los Angeles Department of Airports (now Los Angeles World Airports, or LAWA) for the use of recycled water from the Palmdale WRP for tree irrigation and effluent disposal.
May 1981	Agreement is signed requiring the maintenance of 200 acres of wetlands at Piute Pond for use by waterfowl migrating along the Pacific Flyway migratory route.
April 1982	The Orange and Los Angeles Counties (OLAC) Water Reuse Study is published, which detailed numerous potential recycled water distribution system projects, many of which were subsequently constructed in the Sanitation Districts' service area and elsewhere.
October 1982	The San Jose Creek WRP is expanded from 37.5 to 62.5 MGD.
August 1983	The City of Industry completes its 7,100 gpm recycled water pump station at the San Jose Creek WRP and begins deliveries of recycled water to the Industry Hills Recreation Area.
January 1984	LBWD's North Long Beach recycled water distribution system is completed.
March 1984	The Sanitation Districts publish the Health Effects Study. This study determined that the recharge of recycled water into the groundwater drinking supply of the Central Basin did not adversely affect in a statistically significant way the health of people ingesting up to 15% recycled water in regards to gastrointestinal disease and cancers or birth defects. It also determined that recharge with recycled water was not adversely affecting the groundwater quality of the Central Basin.
May 1984	Daily average reuse flows in the Sanitation Districts' service area exceed 70 MGD for the first time.
June 1984	The Long Beach WRP is expanded from 12.5 to 25 MGD.
March 1986	LBWD's South Long Beach recycled water distribution system is completed.

May 1986	Deliveries of recycled water from the Pomona WRP begin to Walnut Valley Water District (WVWD) (purchased from PWD).
January 1987	The Saugus WRP's treatment process is upgraded to tertiary with the addition of dual-media pressure filters.
March 1987	The Los Angeles RWQCB adopts Board Order No. 87-40, which permits the increase in the use of recycled water for groundwater recharge in the Montebello Forebay from 32,700 to 50,000 acre-feet per year (AFY).
December 1987	The City of Cerritos completes its 14,800 gpm pump station at the Los Coyotes WRP and expands delivery of recycled water throughout the city.
May 1988	Daily average reuse flows in the Sanitation Districts' service area exceed 80 MGD for the first time.
June 1988	Deliveries of recycled water from the Lancaster WRP begin to Nebeker Ranch for alfalfa irrigation.
September 1988	The Valencia WRP is expanded from 4.5 to 7.5 MGD.
December 1988	Norman's Nursery moves from the site of the Stage III expansion of the San Jose Creek WRP to a site next to the Whittier Narrows WRP, using recycled water from the latter facility.
February 1989	The Palmdale WRP is expanded from 3.1 to 6.5 MGD.
June 1989	Daily average reuse flows in the Sanitation Districts' service area exceed 90 MGD for the first time, and the running 12-month average daily reuse flows exceed 60 MGD.
August 1989	Deliveries of recycled water from the Los Coyotes WRP begin to the City of Lakewood through the City of Cerritos' recycled water distribution system.
November 1989	The Lancaster WRP is expanded from 6.5 to 8 MGD.
June 1991	The Pomona WRP is expanded from 10 to 15 MGD.
September 1991	The Los Angeles RWQCB adopts Board Order No. 91-100, which increases the amount of recycled water for groundwater recharge in the Montebello Forebay up to 60,000 AFY in any one year (150,000 acre-feet (AF) in any three-year period).
October 1991	The Saugus WRP is expanded from 5 to 6.5 MGD with the completion of flow equalization facilities.
February 1992	Central Basin Municipal Water District (CBMWD) constructs its Century (E. Thornton Ibbetson) recycled water distribution system (Century System) and begins delivery of recycled water from the Los Coyotes WRP through the City of Cerritos pump station.
December 1992	The Lancaster WRP is expanded from 8 to 10 MGD.

January 1993	The San Jose Creek WRP is expanded from 62.5 to 100 MGD with the completion of the Stage III expansion.
July 1993	The Palmdale WRP is expanded from 6.5 to 8 MGD.
August 1993	Daily average reuse flows in the Sanitation Districts' service area exceed 100 MGD for the first time, setting a record at 113 MGD.
February 1994	The running 12-month daily average reuse flows exceed 70 MGD for the first time.
April 1994	The running 12-month daily average reuse flows exceed 75 MGD for the first time.
May 1994	The running 12-month daily average reuse flows exceed 80 MGD for the first time.
July 1994	CBMWD constructs the Rio Hondo (Esteban Torres) recycled water pump station and distribution system (Rio Hondo System), which was interconnected to the CBMWD Century System. For the first time, two different WRPs (Los Coyotes and San Jose Creek) are used to supply recycled water to the same regional distribution system.
November 1994	Deliveries of recycled water from the Valencia WRP begin to the City of Santa Clarita via water trucks for irrigation of city-owned trees and parkways. This activity is extended to the Saugus WRP in March 1995; however, this practice ends in September 1995.
December 1994	The Valencia WRP is expanded from 7.5 to 11 MGD
June 1995	LBWD restores recycled water service to the THUMS project on Island White for oil field repressurization.
December 1995	Sanitation Districts complete the Plan for Beneficial Use of Recycled Water, which identifies impediments to expanding water reuse, along with solutions and potential new users.
December 1995	Deliveries of recycled water from the Pomona WRP begin to the Spadra Landfill and the adjacent Gas-to-Energy Facility (SPERG).
February 1996	An outfall trunk sewer for waste activated sludge disposal and excess storm flows was completed that connected the La Cañada WRP with the main sewer system in the Los Angeles Basin, officially making this plant a JOS facility.
June 1996	The Valencia WRP is expanded from 11 to 13.5 MGD
July 1996	The Palmdale WRP is expanded from 8 to 15 MGD.
December 1996	RAND Corporation publishes its first epidemiological study, commissioned by WRD, of the health effects associated with the consumption of recycled water that had been used to augment the surface recharge of the Central Basin aquifer. There was no statistical evidence that indicated that recycled water consumed in this manner adversely impacted human health in regards to certain cancers and gastrointestinal diseases.
May 1997	The Lancaster WRP is expanded from 10 to 16 MGD.

May 1997	The Los Angeles RWQCB readopts all of the Sanitation Districts' reuse permits that had been previously issued in the 1980's.
November 1997	Following years of delays, recycled water deliveries finally begin from the San Jose Creek WRP to the Puente Hills Landfill and the adjacent Gas-to-Energy Facility (PERG).
June 1998	Rose Hills Memorial Park begins receiving recycled water from the San Jose Creek WRP through the Puente Hills distribution system.
October 1999	RAND Corporation publishes its second epidemiological study, commissioned by the WRD, of the health effects associated with the consumption of Central Basin groundwater that had been augmented by the surface recharge of recycled water. There was no statistical evidence indicating that recycled water consumed in this manner adversely impacted human health in regards to certain birth outcomes.
December 2000	CDPH adopts revised Title 22 Water Recycling Criteria that contains an expanded list of approved uses of recycled water.
June 2001	The San Jose Creek WRP produces over 100,000 AF of recycled water during a fiscal year for the first time.
March 2002	Antelope Valley Farms begins installing center pivot irrigation systems in order to make commercial use of Palmdale WRP effluent on land leased from LAWA by Sanitation Districts.
January 2003	Rowland Water District (RWD) takes over that portion of WVWD's recycled water distribution system that lies within the RWD service area.
February 2003	WRD completes construction of the Leo J. Vander Lans Treatment Facility and begins using Long Beach WRP effluent for process testing.
May 2003	The Valencia WRP is expanded from 13.5 to 17 MGD with the completion of additional aeration tanks.
June 2003	The Upper San Gabriel Valley Municipal Water District (USGVMWD) begins delivery of recycled water from the San Jose Creek WRP through the CBMWD Rio Hondo System.
August 2003	The first direct deliveries of recycled water from the Valencia WRP begin through the Castaic Lake Water Agency (CLWA) with the Tournament Players Club golf course. This is the first permanently plumbed reuse site in the Santa Clarita Valley.
February 2005	Deliveries of recycled water begin from the San Jose Creek WRP to the Puente Hills Materials Recovery Facility (MRF).
May 2005	The Valencia WRP is expanded from 17 to 21.6 MGD with the completion of the Stage V expansion.
October 2005	Recycled water deliveries through the CBMWD's Century System are extended to the City of Vernon with the start-up of the Malburg Generation Station power plant.

October 2005	Deliveries of recycled water begin from the Leo J. Vander Lans Treatment Facility to the Alamitos Seawater Intrusion Barrier for injection.
August 2006	After extensive retrofitting, a large section of the lower portion of Rose Hills Memorial Park is connected to the USGVMWD recycled water distribution system, making this site one of the largest direct users of the Sanitation Districts' recycled water.
September 2006	USGVMWD begins deliveries of recycled water from the Whittier Narrows WRP to the Whittier Narrows Recreation Area.
February 2007	A 1 MGD pilot membrane bioreactor (MBR) plant begins operation at the Lancaster WRP, supplying tertiary treated effluent to the Sanitation Districts' Eastern Agricultural Site.
February 2007	The Sanitation Districts adopt the last of its Water Recycling Ordinances for its various service areas that allow it to govern the use of its recycled water supplies.
March 2007	One of the Sanitation Districts' largest non-potable users, Blue Heron Newsprint, ceases operations and stops receiving its usual 3 MGD of recycled water from the Pomona WRP.
May 2007	MWD ceases all deliveries of imported water for groundwater replenishment, increasing the demand for recycled water.
November 2007	The Sanitation Districts and the WVWD sign an agreement for the direct sale of recycled water from the Pomona WRP.
January 2008	The Sanitation Districts and Los Angeles County Waterworks District No. 40 sign an agreement for the sale of 13,500 AFY of recycled water from the Lancaster and Palmdale WRPs.
March 2008	The Sanitation Districts and the City of Lancaster sign an agreement for the sale of 950 AFY of recycled water from the Lancaster WRP.
July 2008	The Sanitation Districts adopt "Rules and Regulations" to regulate the use of its recycled water supplies.
August 2008	The Sanitation Districts initiate the Reuse Site Supervisor Training Program.
September 2008	The Sanitation Districts, USGVMWD, and WRD sign a Memorandum of Understanding to contract with MWH to study the feasibility of advanced treatment at the San Jose Creek WRP for increased groundwater recharge in both the Central and Main San Gabriel basins.
January 2009	Deliveries of tertiary treated recycled water from the Lancaster WRP begin to the City of Lancaster.
April 2009	The Los Angeles RWQCB adopts a general reuse permit allowing for the use of recycled water for non-irrigation purposes.
April 2009	A 24-inch valve was installed between chlorine contact chambers nos. 2 and 3 at the Long Beach WRP to increase recycled water supply to LBWD.

April 2009	LARWQCB revises the 1991 Montebello Forebay recharge permit to eliminate the existing annual and three-year total quantity limits (60,000 and 150,000 AF, respectively), and rely on a running 5-year average recycled water contribution of 35%. This change is expected to allow for approximately 5,000 AFY more of recycled water to be recharged.
July 2009	Deliveries of recycled water from the San Jose Creek WRP begin to RWD through the City of Industry distribution system.
August 2010	The City of Long Beach Department of Public Works began using recycled water this month for street sweeping and sewer flushing under the RWQCB's new, region-wide non-irrigation reuse permit.

APPENDIX B

RECYCLED WATER QUALITY FROM SANITATION DISTRICTS' TERTIARY WRPS

TABLE B-1
LONG BEACH WATER RECLAMATION PLANT
RECYCLED WATER QUALITY, FY 2010-11

Constituent	Units	Mean	Maximum	Minimum
pH		7.58	7.6	6.7
Turbidity	NTU	0.7	2.2	0.4
Total Coliform	org./100 ml	<1	2	<1
Fecal Coliform	org./100 ml	<1	1	<1
Temperature	deg. F	76	84	68
Suspended Solids	mg/L	<2.5	7.7	<2.5
Settleable Solids	ml/L	<0.1	<0.1	<0.1
Total Dissolved Solids	mg/L	631	771	534
Total COD	mg/L	<25	40	<25
Total BOD	mg/L	<3	<3	<3
Ammonia Nitrogen	mg/L	1.12	1.96	0.697
Organic Nitrogen	mg/L	2.24	2.99	0.609
Nitrate Nitrogen	mg/L	6.34	7.38	5.14
Nitrite Nitrogen	mg/L	0.163	0.383	0.042
Fluoride	mg/L	0.824	1.04	0.629
Boron	mg/L	0.34	0.37	0.32
Cyanide	µg/L	<4.3	<5.0	2.3
Chloride	mg/L	123	136	114
Sulfate	mg/L	101	154	67.9
Total Hardness	mg/L	185	272	148
Total Alkalinity	mg/L	203	281	170
Antimony	µg/L	0.43	0.47	0.4
Arsenic	µg/L	2.93	3.51	2.51
Barium	µg/L	57.3	86.3	43.8
Beryllium	µg/L	<0.25	<0.25	<0.25
Cadmium	µg/L	<0.11	<0.2	<0.02
Total Chromium	µg/L	0.27	0.35	0.22
Hexavalent Chromium	µg/L	0.9	1.5	0.5
Copper	µg/L	2.17	2.85	1.55
Lead	µg/L	0.11	0.13	0.09
Mercury	µg/L	0.000736	0.0014	0.0000611
Nickel	µg/L	1.22	1.49	1.12
Selenium	µg/L	0.58	0.92	0.30
Silver	µg/L	<0.20	<0.20	<0.20
Thallium	µg/L	<0.25	<0.25	<0.25
Zinc	µg/L	34.6	40.3	30.6
Detergents (MBAS)	mg/L	<0.10	<0.10	<0.10
Oil and Grease	mg/L	<4.6	<5.3	<4.3
Conductivity	µmhos/cm	1093	1390	960

TABLE B-2
LOS COYOTES WATER RECLAMATION PLANT
RECYCLED WATER QUALITY, FY 2010-11

Constituent	Units	Mean	Maximum	Minimum
pH		7.18	7.7	6.7
Turbidity	NTU	0.6	3.6	0.3
Total Coliform	org./100 ml	<1	2	<1
Fecal Coliform	org./100 ml	<1	1	<1
Temperature	deg. F	77	85	70
Suspended Solids	mg/L	<2.5	13.1	<2.5
Settleable Solids	ml/L	<0.1	<0.1	<0.1
Total Dissolved Solids	mg/L	735	978	508
Total COD	mg/L	<25	36	<25
Total BOD	mg/L	<3	<3	<3
Ammonia Nitrogen	mg/L	1.151	3.52	0.818
Organic Nitrogen	mg/L	0.837	1.31	0.267
Nitrate Nitrogen	mg/L	7.11	7.95	5.74
Nitrite Nitrogen	mg/L	<0.027	0.073	<0.02
Total Phosphate (PO4)	mg/L	0.421	1.81	0.157
Fluoride	mg/L	0.425	0.497	0.356
Boron	mg/L	0.41	0.49	0.34
Cyanide	mg/L	<2.80	<5.0	1.57
Chloride	mg/L	164	207	105
Sulfate	mg/L	148	196	100
Total Hardness	mg/L	272	315	250
Total Alkalinity	mg/L	197	247	175
Antimony	µg/L	2.02	2.64	1.44
Arsenic	µg/L	1.05	1.25	0.89
Barium	µg/L	51.6	55.7	47.7
Beryllium	µg/L	<0.25	<0.25	<0.25
Cadmium	µg/L	<0.07	<0.20	0.02
Total Chromium	µg/L	0.88	1.81	0.56
Hexavalent Chromium	µg/L	1.1	2.0	0.5
Copper	µg/L	2.45	3.57	1.55
Lead	µg/L	0.26	0.33	0.20
Mercury	µg/L	0.00167	0.00219	0.00147
Nickel	µg/L	4.38	5.30	3.33
Selenium	µg/L	0.63	0.76	0.39
Silver	µg/L	<0.16	<0.2	0.02
Sodium	mg/L	213	223	203
Thallium	µg/L	<0.25	<0.25	<0.25
Zinc	µg/L	46.7	59.7	35.2
Detergents (MBAS)	mg/L	<0.10	<0.10	<0.10
Oil and Grease	mg/L	<4.6	<4.9	<4.3
Conductivity	µmhos/cm	1424	1570	1250

TABLE B-3
POMONA WATER RECLAMATION PLANT
RECYCLED WATER QUALITY, FY 2010-11

Constituent	Units	Mean	Maximum	Minimum
pH		7.38	7.8	6.74
Turbidity	NTU	0.7	1.4	0.4
Total Coliform	org./100 ml	<1	68	<1
Fecal Coliform	org./100 ml	<1	<1	<1
Temperature	deg. F	77	86	68
Suspended Solids	mg/L	<2.5	<2.5	<2.5
Settleable Solids	ml/L	<0.1	<0.1	<0.1
Total Dissolved Solids	mg/L	548	618	520
Total COD	mg/L	<26	52	<25
Total BOD	mg/L	<3	11	<3
Total Organic Carbon	mg/L	6.42	7.41	5.92
Ammonia Nitrogen	mg/L	1.46	1.96	0.987
Organic Nitrogen	mg/L	1.21	2.68	0.72
Nitrate Nitrogen	mg/L	6.56	8.85	5.10
Nitrite Nitrogen	mg/L	0.293	0.839	0.053
Fluoride	mg/L	0.343	0.372	0.289
Boron	mg/L	0.26	0.30	0.21
Cyanide	µg/L	1.96	2.70	1.40
Chloride	mg/L	129	144	117
Sulfate	mg/L	59.7	70.1	52.3
Total Alkalinity	mg/L	170	189	152
Total Hardness	mg/L	209	228	190
Calcium	mg/L	63.7	67.3	60.4
Magnesium	mg/L	13.8	14.7	12.8
Antimony	µg/L	0.37	0.42	0.30
Arsenic	µg/L	0.93	1.18	0.77
Barium	µg/L	35.3	39.9	29.1
Beryllium	µg/L	<0.25	<0.25	<0.25
Cadmium	µg/L	0.05	0.08	0.03
Total Chromium	µg/L	0.89	1.12	0.69
Hexavalent Chromium	µg/L	<4.1	<10	0.7
Copper	µg/L	5.47	8.12	4.00
Iron	mg/L	0.030	0.036	0.024
Lead	µg/L	0.40	0.57	0.30
Manganese	µg/L	5.93	8.84	3.25
Mercury	µg/L	0.00152	0.00217	0.000533
Nickel	µg/L	1.82	1.27	3.03
Potassium	mg/L	13.7	14.8	12.6
Selenium	µg/L	0.35	0.45	0.28
Silver	µg/L	<0.12	<0.2	0.04
Sodium	mg/L	103	117	91.6
Thallium	µg/L	<0.25	<0.25	<0.25
Zinc	µg/L	62.7	66.8	59.9
Detergents (MBAS)	mg/L	<0.10	0.10	<0.10
Oil and Grease	mg/L	<4.4	<4.6	<4.3
Conductivity	µmhos/cm	920	982	852

TABLE B-4
SAN JOSE CREEK WATER RECLAMATION PLANT EAST
RECYCLED WATER QUALITY, FY 2010-11

Constituent	Units	Mean	Maximum	Minimum
pH		7.04	7.34	6.65
Turbidity	NTU	0.7	1.8	0.4
Total Coliform	org./100 ml	<1	4	<1
Fecal Coliform	org./100 ml	<1	1	<1
Temperature	deg. F	79	86	69
Suspended Solids	mg/L	<2.5	2.7	<2.5
Settleable Solids	ml/L	<0.1	<0.1	<0.1
Total Dissolved Solids	mg/L	611	648	558
Total COD	mg/L	<25	33	<25
Total BOD	mg/L	<3	3	<3
Total Organic Carbon	mg/L	5.73	6.52	5.11
Ammonia Nitrogen	mg/L	0.934	1.09	0.685
Organic Nitrogen	mg/L	1.67	2.65	0.956
Nitrate Nitrogen	mg/L	4.54	6.30	2.80
Nitrite Nitrogen	mg/L	<0.038	0.091	<0.03
Fluoride	mg/L	0.447	0.489	0.374
Boron	mg/L	0.31	0.34	0.27
Cyanide	µg/L	<5	<5	<5
Chloride	mg/L	143	158	128
Sulfate	mg/L	96.6	109	83.0
Total Alkalinity	mg/L	167	192	153
Total Hardness	mg/L	220	282	192
Calcium	mg/L	62.2	64.8	60.1
Magnesium	mg/L	18.6	21.8	16.6
Antimony	µg/L	0.56	0.64	0.46
Arsenic	µg/L	0.92	1.07	0.69
Barium	µg/L	61.3	66.6	50.0
Beryllium	µg/L	<0.25	<0.25	<0.25
Cadmium	µg/L	<0.06	<0.2	0.02
Total Chromium	µg/L	0.74	0.88	0.50
Hexavalent Chromium	µg/L	<4.5	<10	0.3
Copper	µg/L	2.89	3.68	2.00
Iron	mg/L	0.063	0.087	0.043
Lead	µg/L	0.23	0.43	0.13
Manganese	µg/L	22.9	27.4	19.2
Mercury	µg/L	0.0013	0.0015	0.0009
Nickel	µg/L	4.83	6.01	3.17
Potassium	mg/L	16.7	17.4	15.2
Selenium	µg/L	0.41	0.66	0.23
Silver	µg/L	<0.02	<0.02	<0.01
Sodium	mg/L	121	139	104
Thallium	µg/L	<0.25	<0.25	<0.25
Zinc	µg/L	49.2	62.5	39.9
Detergents (MBAS)	mg/L	<0.10	<0.10	<0.10
Oil and Grease	mg/L	<4.3	<4.6	<4.1
Conductivity	µmhos/cm	1016	1170	885

TABLE B-5
SAN JOSE CREEK WATER RECLAMATION PLANT WEST
RECYCLED WATER QUALITY, FY 2010-11

Constituent	Units	Mean	Maximum	Minimum
pH		7.05	7.36	6.70
Turbidity	NTU	0.6	2.8	0.4
Total Coliform	org./100 ml	<1	2	<1
Fecal Coliform	org./100 ml	<1	1	<1
Temperature	deg. F	78	86	69
Suspended Solids	mg/L	<2.5	6.0	<2.5
Settleable Solids	ml/L	<0.1	<0.1	<0.1
Total Dissolved Solids	mg/L	546	586	492
Total COD	mg/L	<25	30	<25
Total BOD	mg/L	<3	5	<3
Total Organic Carbon	mg/L	4.85	5.26	4.55
Ammonia Nitrogen	mg/L	0.827	1.46	0.539
Organic Nitrogen	mg/L	<0.631	1.24	<0.20
Nitrate Nitrogen	mg/L	8.95	12.7	5.31
Nitrite Nitrogen	mg/L	<0.031	0.043	<0.03
Fluoride	mg/L	0.695	0.732	0.644
Boron	mg/L	0.34	0.39	0.32
Cyanide	mg/L	<5	<5	<5
Chloride	mg/L	118	135	108
Sulfate	mg/L	77.5	88.4	68.5
Total Alkalinity	mg/L	146	189	113
Total Hardness	mg/L	191	225	169
Calcium	mg/L	55.0	57.9	52.3
Magnesium	mg/L	15.4	16.1	15.1
Antimony	µg/L	0.45	0.49	0.37
Arsenic	µg/L	0.93	1.33	0.50
Barium	µg/L	29.3	33.7	24.4
Beryllium	µg/L	<0.25	<0.25	<0.25
Cadmium	µg/L	0.03	0.05	0.02
Total Chromium	µg/L	0.79	1.10	0.60
Hexavalent Chromium	µg/L	<2.9	<10.0	0.5
Copper	µg/L	5.31	6.36	4.34
Iron	mg/L	0.051	0.068	0.034
Lead	µg/L	0.16	<0.25	0.11
Manganese	µg/L	24.9	46.6	11.9
Mercury	µg/L	0.00111	0.0013	0.00078
Nickel	µg/L	2.75	4.19	1.57
Potassium	mg/L	14.6	15.3	13.9
Selenium	µg/L	<0.36	<1.0	0.22
Silver	µg/L	<0.14	<0.2	0.02
Sodium	mg/L	105	113	94.7
Thallium	µg/L	<0.25	<0.25	<0.25
Zinc	µg/L	44.9	54.0	30.8
Detergents (MBAS)	mg/L	<0.10	<0.10	<0.10
Oil and Grease	mg/L	<4.4	<4.5	<4.1
Conductivity	µmhos/cm	907	1000	819

TABLE B-6
WHITTIER NARROWS WATER RECLAMATION PLANT
RECYCLED WATER QUALITY, FY 2010-11

Constituent	Units	Mean	Maximum	Minimum
pH		7.38	8.22	7.00
Turbidity	NTU	0.7	1.9	0.1
Total Coliform	org./100 ml	<1	1	<1
Fecal Coliform	org./100 ml	<1	1	<1
Temperature	deg. F	77	82	70
Suspended Solids	mg/L	<2.5	3.0	<2.5
Settleable Solids	ml/L	<0.1	<0.1	<0.1
Total Dissolved Solids	mg/L	564	612	526
Total COD	mg/L	<25	44	<25
Total BOD	mg/L	<2.5	8.0	<2.5
Total Organic Carbon	mg/L	5. 18	5.97	4.49
Ammonia Nitrogen	mg/L	0.450	0.845	0.250
Organic Nitrogen	mg/L	0.769	1.19	<0.200
Nitrate Nitrogen	mg/L	6.24	6.85	3.91
Nitrite Nitrogen	mg/L	<0.129	0.376	<0.022
Fluoride	mg/L	0.689	0.738	0.616
Boron	mg/L	0.26	0.29	0.24
Cyanide	µg/L	<2.55	<5	1.19
Chloride	mg/L	110	116	101
Sulfate	mg/L	97.6	133	80.4
Total Alkalinity	mg/L	161	188	147
Total Hardness	mg/L	194	228	159
Calcium	mg/L	55.0	56.8	52.7
Magnesium	mg/L	16.4	17.9	15.3
Antimony	µg/L	0.59	0.73	0.42
Arsenic	µg/L	1.11	1.18	0.98
Barium	µg/L	43.1	47.6	31.7
Beryllium	µg/L	<0.25	<0.25	<0.25
Cadmium	µg/L	0.04	0.11	0.02
Total Chromium	µg/L	1.05	1.14	0.84
Hexavalent Chromium	µg/L	<8	<10	1
Copper	µg/L	4.45	7.02	3.39
Iron	mg/L	0.023	0.027	0.020
Lead	µg/L	0.31	0.39	0.25
Manganese	µg/L	9.57	18.20	1.84
Mercury	µg/L	0.00246	0.00655	0.00108
Nickel	µg/L	8.90	13.8	3.45
Potassium	mg/L	13.5	14.1	12.9
Selenium	µg/L	0.43	0.49	0.37
Silver	µg/L	<0.14	<0.20	0.02
Sodium	mg/L	115	124	104
Thallium	µg/L	<0.25	<0.25	<0.25
Zinc	µg/L	55.2	63.2	48.3
Detergents (MBAS)	mg/L	<0.10	<0.10	<0.10
Oil and Grease	mg/L	<4.5	<4.7	<4.3
Conductivity	µmhos/cm	929	1010	808

TABLE B-7
VALENCIA WATER RECLAMATION PLANT
RECYCLED WATER QUALITY, FY 2010-11

Constituent	Units	Mean	Maximum	Minimum
pH		7.32	7.6	6.7
Turbidity	NTU	0.7	1.5	0.4
Total Coliform	org./100 ml	<1	3	<1
Fecal Coliform	org./100 ml	<1	<1	<1
Temperature	deg. F	78	82	70
Suspended Solids	mg/L	<2.5	3.0	<2.5
Settleable Solids	ml/L	<0.1	<0.1	<0.1
Total Dissolved Solids	mg/L	699	751	655
Total COD	mg/L	<25	<25	<25
Total BOD	mg/L	<2.5	3	<2.5
Ammonia Nitrogen	mg/L	1.010	1.13	0.885
Organic Nitrogen	mg/L	0.88	1.14	0.57
Nitrate Nitrogen	mg/L	2.57	3.50	2.03
Nitrite Nitrogen	mg/L	<0.031	0.039	<0.03
Fluoride	mg/L	0.335	0.345	0.320
Boron	mg/L	0.59	0.66	0.53
Cyanide	µg/L	3.8	4.4	2.9
Chloride	mg/L	126	135	119
Sulfate	mg/L	174	200	159
Total Alkalinity	mg/L	193	220	172
Total Hardness	mg/L	265	306	228
Antimony	µg/L	0.56	0.65	0.47
Arsenic	µg/L	0.89	1.31	0.65
Barium	µg/L	18.4	25.8	13.8
Beryllium	µg/L	<0.25	<0.25	<0.25
Cadmium	µg/L	0.04	0.06	0.03
Total Chromium	µg/L	0.31	0.53	0.22
Hexavalent Chromium	µg/L	5.8	<10	1.5
Copper	µg/L	5.98	8.78	3.01
Iron	µg/L	53.3	67.5	33
Lead	µg/L	0.07	0.12	0.05
Mercury	µg/L	0.000531	0.000973	0.000265
Nickel	µg/L	2.32	2.89	1.67
Selenium	µg/L	0.42	0.52	0.30
Silver	µg/L	<0.16	<0.2	0.02
Thallium	µg/L	<0.25	<0.25	<0.25
Zinc	µg/L	46.6	68.3	34.2
Detergents (MBAS)	mg/L	<0.10	<0.10	<0.10
Oil and Grease	mg/L	<4.7	<4.7	<4.6
Conductivity	µmhos/cm	1157	1200	1080

TABLE B-8
SAUGUS WATER RECLAMATION PLANT
RECYCLED WATER QUALITY, FY 2010-11

Constituent	Units	Mean	Maximum	Minimum
pH		7.57	8.0	7.3
Turbidity	NTU	0.7	1.1	0.4
Total Coliform	org./100 ml	<1	157	<1
Fecal Coliform	org./100 ml	<1	<1	<1
Temperature	deg. F	76	83	68
Suspended Solids	mg/L	<2.5	2.5	<2.5
Settleable Solids	ml/L	<0.1	<0.1	<0.1
Total Dissolved Solids	mg/L	638	764	535
Total COD	mg/L	<25	<25	<25
Total BOD	mg/L	<2.5	<2.5	<2.5
Ammonia Nitrogen	mg/L	1.228	1.54	0.974
Organic Nitrogen	mg/L	1.606	3.79	0.542
Nitrate Nitrogen	mg/L	4.20	4.66	3.59
Nitrite Nitrogen	mg/L	<0.033	0.054	<0.03
Fluoride	mg/L	0.288	0.326	0.247
Boron	mg/L	0.67	0.86	0.54
Cyanide	mg/L	<2.1	<5	1
Chloride	mg/L	124	134	114
Sulfate	mg/L	126	163	104
Total Alkalinity	mg/L	207	279	167
Total Hardness	mg/L	242	334	185
Antimony	µg/L	0.43	0.50	0.37
Arsenic	µg/L	1.28	1.43	1.13
Barium	µg/L	43.5	52.6	36.2
Beryllium	µg/L	<0.25	<0.25	<0.25
Cadmium	µg/L	0.05	0.06	0.04
Total Chromium	µg/L	0.33	0.38	0.27
Hexavalent Chromium	µg/L	2.2	5.0	0.7
Copper	µg/L	6.51	7.30	5.79
Iron	µg/L	11	<20	9
Lead	µg/L	0.15	0.20	0.11
Mercury	µg/L	0.001095	0.002860	0.000426
Nickel	µg/L	1.12	1.31	0.93
Selenium	µg/L	0.61	0.76	0.52
Silver	µg/L	<0.2	<0.2	<0.2
Thallium	µg/L	<0.25	<0.25	<0.25
Zinc	µg/L	56.0	66.1	46.5
Detergents (MBAS)	mg/L	<0.10	<0.10	<0.10
Oil and Grease	mg/L	<4.6	<4.9	<4.5
Conductivity	µmhos/cm	1095	1320	982

LONG BEACH WATER DEPARTMENT

Phase 1 was completed in 1980 at a cost of $280,000. It consisted of a 200 HP, 2,500 gallon per minute (gpm) pump station, and 1,500 feet of 12-inch line that served El Dorado Park West and Golf Course.

Phase 2 made use of a previously constructed, but never used, 21-inch line between the Long Beach WRP and the Island White oil pumping facility in Long Beach Harbor. Recycled water travels through the 21-inch steel concrete-cylinder transmission line that runs south along Studebaker Road, west on Atherton Street, south on Clark Avenue, west on Anaheim Street, and then south on Park Avenue. At the intersection of Park Avenue and 11th Street, the 21-inch line turns west again, then south on Obispo Lane on its way to Island White. The line was capped at Obispo Lane and 2nd Street. This line was built in 1970 by the THUMS group (Texaco, Humboldt, Union, Mobil, and Shell) in the hope of using recycled water from the then under-construction Long Beach WRP to repressurize the oil-bearing zones that were being depleted. This project did not proceed at that time and the THUMS group deeded ownership of the pipeline to the city. In 1982, 520 feet of 12-inch line was installed to deliver recycled water to the Recreation Park and Golf Course, at a cost of $50,000.

Phase 3 was completed in 1983 at a total cost of $2,560,000. It consisted of a 750 HP, 8,500 gpm pump station (five variable speed, vertical turbine pumps producing 95 psi, with capacity for a sixth pump) connected to the adjacent Long Beach WRP effluent forebay through a 36-inch line, 25,685 feet of 20-inch pipe, and 4,130 feet of 12-inch pipe. The 20-inch main line runs north along the east bank of the San Gabriel River. Just south of Carson Street, the pipeline turns west and runs through a siphon under the river, then along Parkcrest Street. At Clark Avenue, the pipeline reduces to 12-inches, turns south and terminates at Wardlow Road. In 1983, the 200 HP 2,100 gpm pump located in El Dorado Park West was relocated to a spot next to the lake in El Dorado Park East where it serves to supply lake water to the recycled water system when recycled water may be unavailable.

Phase 4 was completed in 1986 and consisted of 3,760 feet of 8-inch pipe and 2,350 feet of 6-inch pipe at a cost of $410,000. At Park Avenue and 11th Street, an 8-inch steel line was connected to the 21-inch transmission line that had been built to serve the THUMS project. The 8-inch line runs south along Park Avenue, through Woodlands Park, then east along 6th Street, reducing to a 6-inches after serving the Recreation 9-Hole Golf Course. The 6-inch line turns south on Monrovia Avenue and terminates at the northern boundary of Marina Vista Park.

Phase 5 was completed in the first half of 1989 at a cost of $3,980,000. It consisted of 4,820 feet of 20-inch pipe, 5,917 feet of 14-inch pipe, 12,364 feet of 12-inch pipe, and 1,857 feet of 8-inch pipe. Also included in this project was a four pump, 500 HP, 105 psi, 3,000 gpm pump station at the south lake of the Lakewood Golf Course that had supplied recycled water, stored in the lake during the day peak supply period, to the distribution system during the peak nighttime demand period. From the end of the 20-inch Stage 3 line in Long Beach City College, a 20-inch ductile iron pipe (DIP) runs 300 feet north, where it turns west on Carson Street, and continues to the South Lake Pumping Plant. A 16-inch DIP continues westerly from the pumping plant along Carson Street, reducing to 14-inches. At Gardenia Avenue, the pipe turns north and runs to 45th Street where it reduces to 12-inches. The 12-inch line continues westerly along 45th Street, then north on Falcon Avenue, then southwest on San Antonio Drive, then northwest on East Goldfield Avenue, then southwest on 45th Way, then north on California Avenue, then west on 46th Street to its terminus at the Virginia Country Club.

The North Long Beach extension of Phase 5 was completed at the beginning of 1992 at a total cost of $627,000. This project connected to the 14-inch line at the intersection of Carson Street and Gardenia

Avenue with a 14-inch tapping sleeve expanding to a 20-inch DIP. This 20-inch line runs south to Marshall Place where it turns west and runs along Marshall Place to a T-section at Gaviota Avenue. This line turns south again from the T-section and runs along Gaviota Avenue to Wardlow Road. The line turns west again and runs along Wardlow Road to Walnut Avenue where it terminates in a T-section. From this T-section, an 8-inch DIP line runs south along Walnut Avenue to the 405 Freeway where it terminates in a 3-inch service for use by the California Department of Transportation. Approximately midway along this final stretch of pipe, at 33rd Street, a 2-inch service runs to the LBWD Service Center. In addition, several smaller lines branch off the main distribution line:

- At the intersection of Marshall Place and Gaviota Avenue, a 6-inch DIP line branches off the T-section and runs west to Walnut Avenue where it terminates in a T-section. From this point, the 6-inch line continues north another where it terminates at a 4-inch service to Somerset Park.

- At the intersection of Gaviota Avenue and Bixby Road there is a T-section, from where an 8-inch DIP runs west to a point just beyond Cerritos Avenue where it supplies a 4-inch service to Hughes Junior High School. The 8-inch line continues west to Myrtle Avenue where it terminates in a 2-inch service to Longfellow Elementary School.

- At the intersection of Gaviota Avenue and Wardlow Road, a 6-inch DIP branches off a T-section and runs east to a point just past Rose Avenue where it terminates in a two more 2-inch services to the LBWD Service Center.

- At the intersection of Walnut Avenue and 33rd Street, a 6-inch DIP branches off and runs west into the City of Signal Hill and to a 3-inch service to Burroughs Elementary School, where it terminates. In addition, the 6-inch lateral has a 6-inch T-section at Brayton Avenue that extends north and terminates in a 4-inch service to Reservoir Park.

Recycled water service was extended to the common areas of the El Dorado Lakes Condominiums in August 1998. From the 20-inch main line running north along the San Gabriel River, an 8-inch DIP branches off and runs east along Spring Street. This line reduces to a 4-inch DIP which runs to the condominiums located on the east side of the 605 Freeway.

The recycled water system was extended again as LBWD began implementing its Master Plan with the completion of Phase 1A in June 1999 at a cost of $1.4 million. LBWD's potable water tanks nos. 21, 22 and 23 on Alamitos Hill were converted to recycled water storage. Each tank has its own new 20-inch discharge line connecting to a 36-inch DIP that runs north, then west along 20th Street to a T-section at Redondo Avenue. The north side of this T-section on Redondo Avenue serves a 24-inch line which was constructed in 2000 as Phase 1B. A 24-inch DIP continues westerly along 20th Street for 939 feet to a T-section at Obispo Lane. The line turns south on Obispo Lane, where it terminates in a new T-section installed in the existing 21-inch recycled water line on 11th Street. Along Obispo Lane, a 6-inch DIP branches off and runs east along 14th Street, allowing for future expansion and customer connections.

APPENDIX D

CITY OF CERRITOS

A 14,800 gpm pump station next to the north side of the Los Coyotes WRP effluent forebay delivers recycled water to reuse sites through 142,600 feet of pipe that loops through the city. Provisions were made so that neighboring cities could connect to this distribution system sometime in the future and make use of the ultimate system capacity of 4,000 AFY.

The pump station discharges into a 30-inch cement mortar-lined and coated steel line which branches into two, 24-inch concrete cylinder pipelines. One of these lines runs east through the north part of the city, while the other turns south along the San Gabriel River. The two lines ultimately meet and form a loop in the distribution system. Pipes greater than 12-inches are cement mortar-lined and coated steel, and the 4- to 10-inch pipes are PVC.

The 24-inch main line serving the northern part of the city runs east from the WRP past the Ironwood 9 Golf Course, then continues east under the 605 Freeway and along 166th Street. At Studebaker Road, a 6-inch line runs north to Cerritos College, and an 8-inch line runs south to Gahr High School. At the school, the line branches into a 4-inch line running north to the 91 Freeway, and a 6-inch line running to the Artesia Cemetery. The 24-inch northern line reduces to 20-inches at 166th Street and Studebaker Road, then continues east along 166th Street through the City of Norwalk. This line branches into two 16-inch lines at the intersection of 166th Street and Norwalk Boulevard.

- One 16-inch line runs south along Norwalk Boulevard to form the west side of a smaller loop in the distribution system. At Artesia Boulevard, a 6-inch line branches off and runs west to Juarez Elementary School and two sections of the 91 Freeway on Pioneer Boulevard. The 16-inch line turns east on Artesia and runs to Barnhill Avenue where a short 4-inch line branches off and runs south to Kennedy Elementary School and Loma Park. At this point, the 16-inch line reduces to 14-inches and continues east on Artesia Boulevard to Bloomfield Avenue before it continues south. At Bloomfield Avenue and 183rd Street, a 6-inch line branches off the 14-inch line and runs west to Cerritos High School. It reduces to a 4-inch line before continuing west to Elliot Elementary School where it terminates. Also at Bloomfield Avenue and 183rd Street, an 8-inch line runs east to Dina Place where it connects with a 10-inch line from the east half of the loop (described below). Also at this point, a short 6-inch line branches off and runs south to Heritage Park.

- The second 16-inch line at Norwalk Boulevard and 166th Street continues east. At Elm Park Drive, a 4-inch line runs north to Satellite Park, and the 16-inch line reduces to 14-inches before continuing east. At Bloomfield Avenue, a 6-inch line runs south to serve Frontier Park, Wittman Elementary School and a section of the 91 Freeway. The 14-inch line continues east to Carmenita Road, where a 6-inch line continues east along 166th Street into Carmenita Junior High School and then to Carmenita Park. A 4-inch line branches off the 6-inch line south on Stowers Avenue to Park Street, then east to Gonsalves Elementary School where it terminates. The 14-inch line on 166th reduces to 10-inches and turns south on Carmenita Road, forming the east side of the smaller loop. An 8-inch line branches off at Red Plum Street to City Park East at Ironbark Drive where it terminates. The 10-inch line also reduces to 8-inches at this point and it continues south toward Artesia Boulevard, at which point two 4-inch lines branch to the west and east to Saddleback Park and Friendship Park, respectively. When the 8-inch line on Carmenita Road reaches 183rd, a 6-inch line branches off and runs east then south on Stowers Avenue to Cerritos Elementary School, Rainbow Park and Bettencort Park. Also from the 8-inch line at Carmenita and 183rd, a 10-inch line runs west on 183rd Street, then runs south under the freeway to Brookhaven Street. At this point, a 4-inch line branches off southeast to serve another section of the 91 Freeway, and a second 4-inch line branches off to Brookhaven Park. At the

intersection of Shoemaker Avenue and 183rd Street, the southern branch of the main loop (the second 24-inch line leaving the WRP) connects with the northern branch to complete the system.

From the WRP, the second 24-inch transmission line runs south along the San Gabriel River. At 183rd Street, a 6-inch line branches east through an Edison easement to the Bellflower Christian School and a section of the 605 Freeway. At South Street, a short 12-inch line branches off west past Westgate Park, providing a connection point for the City of Lakewood.

Approximately 1,000 feet south of 195th Street, the 24-inch line branches off into a 10-inch line to the south to provide a connection point for the City of Lakewood, and a 20-inch line to the east that follows a Southern California Edison (SCE) right-of-way. The 20-inch line passes the Orange County nursery and the SCE-operated nursery and at Gridley Road, a 4-inch line branches off north to Bragg Elementary School. At Pioneer Boulevard, a 6-inch line branches off south to Cabrillo Lane Elementary School. At Jacob Street, a 6-inch line branches off north to Pat Nixon Elementary School. At Norwalk Boulevard, a 6-inch line branches off south to provide the third connection point for the City of Lakewood.

At Norwalk Boulevard, the 20-inch line reduces to 16-inches and continues east to Bloomfield Avenue, where it enters Cerritos Regional County Park. The 16-inch line reduces to 8-inches (with a 16-inch stub out for future connections to other municipalities) and curves north onto Shoemaker Avenue. A 4-inch line at Espinheira Drive branches off to Sunshine Park, and a 4-inch line at Droxford Street branches off to Leal Elementary School. The 8-inch line connects with the rest of the transmission system loop at the intersection of Shoemaker Avenue and 183rd Street.

CITY OF LAKEWOOD

The City of Cerritos provided three stub-out locations on one of its 24-inch concrete mortar lined and coated steel distribution lines for connections to the City of Lakewood. Each of these stub-out locations is within the City of Lakewood. A 12-inch stub-out connection is located on South Street, on the west side of the San Gabriel River, and consists of two, 6-inch meters in a manifold structure with isolation valves. A 10-inch stub-out connection is located across Del Amo Boulevard into River Park, approximately 40 feet west of Studebaker Avenue and consists of a single, 6-inch meter. A 6-inch stub-out is located on Norwalk Boulevard, just south of Del Amo Boulevard and approximately 70 feet south of the City of Lakewood boundary. This last stub-out is not in use and currently there are no future plans for it.

From the first stub-out location on South Street, a 12-inch PVC line runs west to a T-section at Woodruff Avenue. From this T-section, a 10-inch PVC line continues west along South Street, ending in a T-section at the Los Cerritos Drainage Channel. There are smaller connections branching off the 10- and 12-inch transmission lines on South Street.

- Approximately 550 feet east of Woodruff Avenue, the 12-inch PVC line along South Street branches at a T-section to a 6-inch PVC line. This line follows Spahn Avenue north, turning west at Edgefield Street and continuing until it reaches Woodruff Avenue. At Woodruff Avenue, the 6-inch line heads north along Woodruff Avenue. There are two, 2-inch connections to parkway irrigation systems along this 6-inch line. A 4-inch connection approximately 600 feet north of Edgefield Street runs approximately 100 feet west to serve St. Joseph's Parish School. Approximately 120 feet north of Arabella Street, the 6-inch line connects to a 4-inch line serving Mayfair High School and Lindstrom Elementary School.

- Along the 12-inch PVC line on South Street there are five, 2-inch connections to parkway irrigation systems east of Woodruff Avenue. Approximately 1,700 feet east of Woodruff, 12-inch PVC line is flanged underground to 12-inch ductile iron pipe on either side of the Palo Verde storm drain. The iron pipe then runs above ground to be suspended over the 14-foot wide channel, with air release valves on either side of the channel.

- A 10-inch PVC line branches off the T-section on South Street at Woodruff Avenue and runs south along Woodruff Avenue, terminating in a T-section at Centralia Street. A 6-inch PVC line branches from the T-section at Centralia Street and runs west along Centralia Street to just past Eastbrook Avenue, where it turns south and feeds a 4-inch connection serving Lakewood High School. There is a 4-inch connection approximately 800 feet south of Arbor Road, to service Jose Del Valle Park. From this 4-inch line there is also a 2-inch connection to service parkway irrigation systems. A 4-inch PVC line branches off a T-section at Arbor Road. The 4-inch line runs west along Arbor Road, ending just before Radnor Avenue with a 4-inch service connection to the City of Lakewood Water Yard. Another 4-inch PVC line branches off a T-section at Dashwood Street. The line runs west along Dashwood, ending in a 4-inch connection on the west side of Ocana Avenue to service Jose San Martin Park. There are six, 2-inch connections to parkway irrigation systems from the 10-inch PVC line along Woodruff Avenue.

- Along the 10-inch PVC line on South Street (west of Woodruff Avenue), there are five 2-inch connections to parkway irrigation systems and one 4-inch PVC line approximately 570 feet east of the Los Cerritos Channel serving Foster Elementary School.

- A 6-inch PVC line branches off the T-section on South Street at Fidler Avenue at a 45-degree angle. The 6-inch line crosses Fidler Avenue at an angle until it reaches the edge of Mayfair Park. From there, the line turns directly south and follows the park's eastern boundary until it reaches Bigelow Street. A 4-inch line branches from a T-section at Bigelow Street and crosses over the Los Cerritos Channel. This 4-inch line serves the west side of Mayfair Park. From the T-section at Bigelow Street, a 6-inch line branches off at a 45-degree angle. The line heads southwest until it reaches the south end of Mayfair Park where it then heads directly south along the east side of the channel. At Candlewood Street, the 6-inch line ends with a T-section. From here, a 2-inch PVC line runs south to the Civic Center and a 6-inch line runs west crossing the channel. The line is flanged underground on either side of the channel to 6-inch ductile iron that runs aboveground to be suspended under a footbridge over the channel. After crossing the channel, the 6-inch line terminates in a T-section, from which a second 2-inch PVC line runs south to serve the Civic Center.

From the second stub-out location on Del Amo Boulevard, a 6-inch PVC line branches from a T-section and runs approximately 640 feet west terminating in a T-section at Mae Boyer Park. Another 10-inch PVC line branches from the T-section at the connection point, running south along the east side of the San Gabriel River channel for approximately 2,000 feet and ending with a 4-inch service connection to the River Park pump station. There are several smaller connections branching off the 6-inch and 10-inch transmission lines from the second connection point to the system.

- Approximately 1,200 feet south of Del Amo Boulevard, a 4-inch PVC line branches from the 10-inch line on the east side of the San Gabriel River. The line runs east, terminating at a T-section with a 2-inch service connection to Rynerson Park.

- A 4-inch PVC line branches from the 6-inch line at a T-section located on the west side of the San Gabriel River. The 4-inch line south, then turns west through the city yard, then south to Monte Verde Park.

- From the T-section at Mae Boyer Park, 4-inch lines run 85 feet under Del Amo Boulevard to either side of the road. These 4-inch lines feed service connections to Mae Boyer Park that is on both the north and south sides of Del Amo Boulevard.

APPENDIX F

CENTRAL BASIN MWD – CENTURY SYSTEM

Construction of Phase I of the Century Reclamation Program began in March 1991 and was completed in February 1992. The facilities in this phase consist of the 30-inch concrete mortar-lined and coated steel "backbone" pipeline from the Los Coyotes WRP that crosses over the San Gabriel River and runs 18,900 feet north along the western bank to a point north of Firestone Boulevard, where the outfall from the San Jose Creek WRP discharges into the San Gabriel River. At this point, the line reduces to a 24-inch concrete mortar-lined and coated steel line that continues northerly to Florence Avenue, then easterly to Fairview Avenue, where it runs to Dollison Drive. The line then follows Dollison Drive southeasterly to Buell Street, where it crosses under the Santa Ana (5) Freeway to Orr & Day Road. The line runs north on Orr & Day back to Florence Avenue, then easterly to Jersey Avenue where it terminates. Several 6- and 8-inch PVC lines branch off the large diameter transmission lines at various points.

- At a point just south of Compton Boulevard, an 8-inch PVC line branches off the 30-inch line and runs northwesterly to Compton Boulevard, where it continues westerly to its terminus at Bellflower High School. A 6-inch PVC line branches off this line at McNab Avenue and runs northerly.

- At a point just north of Columbus High School, another 8-inch PVC line branches off the 30-inch line and runs westerly through an easement to Woodruff Avenue, where it turns south and runs to Everest Street. This line runs westerly to Benedict Avenue, then through Gauldin School to its terminus on Dunrobin Avenue at Independence Park.

- At a point north of Firestone Boulevard, a 6-inch PVC line branches off the 30-inch line and runs westerly through the Rio San Gabriel Park parking lot to Newville Avenue, where it turns north and runs northerly to La Villa Street. The line then runs westerly to Pangborn Avenue, where it turns north and runs to Buell Street. The line runs westerly to its terminus at Casanes Avenue.

- From the 24-inch line on Florence Avenue, a 6-inch PVC line branches off at Little Lake Road and runs southerly to its terminus at Little Lake Park and School.

- At the end of the 24-inch line at Florence Avenue and Jersey Avenue, an 8-inch PVC line runs north on along an easement to Jersey Avenue, then to Joslin Avenue. This line then runs westerly along Joslin Avenue and easterly to its terminus at Fallon Avenue.

In 2007, The City of Downey constructed additional pipelines connecting to the existing CBMWD distribution system at two points: on the 8-inch line on Dunrobin Avenue at Independence Park, and on another 8-inch line on Lakewood Boulevard at Donovan Street (see Construction Schedule 2 of Phase II below).

From the connection point on Lakewood Boulevard, a 12-inch line runs northeasterly along Lakewood Boulevard to its termination point at 5th Avenue. Three smaller lines branch off of this 12-inch line:

- At Firestone Boulevard, a 4-inch line runs west to its termination at Nash Avenue.

- At Stewart & Gray Road, an 8-inch line runs east to a T-section at Bellflower Boulevard, then easterly to its termination at a point just east of Coldbrook Avenue.

- At Clark Avenue, an 8-inch line runs south along Clark to a newly constructed portion of Congressman

Steve Horn Way, where it turns east and continues to Bellflower Boulevard. There is a T-section at Steve Horn Way and Bellflower Boulevard where two more 8-inch lines branch off. The first line runs north along Bellflower Boulevard to Stewart & Gray Road where it connects to the T-section on the previously described 8-inch line in this street. The second line continues east along Steve Horn Way and through Independence Park where it connects to the existing CBMWD distribution system on Dunrobin Avenue.

Construction of Phase II began in March 1992 and was completed in June 1993. Four construction "schedules" provided for several pipelines to branch off the main 30-inch and 24-inch Phase I line.

Schedule 1: From the end of the 24-inch Phase I line in the City of Santa Fe Springs at Florence Avenue and Jersey Avenue, the Phase II 24-inch line continues east to Bloomfield Avenue, where it terminates in a 4-way X-section. From this point, the 24-inch line runs southerly to Lakeland Road, then easterly to Greenstone Avenue, where it terminates in a T-section. At this point, a 16-inch PVC pipe branches off and runs southerly to Sunshine Avenue, then easterly for to Shoemaker Avenue, then southerly to Leffingwell Avenue where the line jogs to the west into an easement parallel to Shoemaker Avenue. The 16-inch line then continues southerly to a point just south of the AT&SF railroad right-of-way where Shoemaker Avenue begins again. The line continues southerly along Shoemaker Avenue until it reaches Firestone Boulevard where the line turns southeasterly and runs to Excelsior Drive. At this point, the line continues east along Excelsior Drive until the dead-end at Marquardt Avenue. The 16-inch line then follows a storm drain easement easterly, where it was jacked under the Coyote Creek channel. On the east side of the channel, the line turns south and runs along the channel levee, then runs easterly to its terminus at Bona Vista Avenue. At this point, an 8-inch PVC line branches off south along Bona Vista Avenue to the end of the cul-de-sac. There are several other lines that branch off the 24- and 16-inch main line in this schedule.

- From the 24-inch line on Florence Avenue, a 6-inch PVC line branches off at Fulton Wells Avenue (between Pioneer and Norwalk) and runs southerly to Lakeland Road, where it turns west and runs to its terminus at Zeus Avenue.

- As the 16-inch line proceeds southwesterly along Firestone Boulevard, a 6-inch PVC line branches off at Dinard Avenue and runs north to Mapledale Street, where it turns easterly and runs to its terminus just east of Cabrillo Avenue.

- At the intersection of Excelsior Drive and Marquardt Avenue, a 6-inch PVC line branches off the 16-inch line and runs south along Marquardt Avenue to its terminus.

- At the four-way cross-section at Florence Avenue and Bloomfield Avenue, an 8-inch PVC line branches off the 24-inch line and runs south along Bloomfield Avenue to its terminus at Lakeland Avenue. This line was constructed by the City of Santa Fe Springs in 2008.

Schedule 2: This portion of the recycled water system branches off to the east and west from the 30-inch line at Foster Road. The east section begins as a 12-inch cement mortar-lined and coated steel pipe connected to the 30-inch line on the west side of the San Gabriel River, just north of Foster Road. This line crosses the river along the Foster Road Bikeway, then runs southerly back to Foster Road where it turns east again into the City of Norwalk. At Dalwood Avenue, a 6-inch PVC line branches off and runs south to Leffingwell Road where it terminates. The 12-inch line on Foster Road continues east to a T-section at McRae Avenue. From this point, one branch of the Tee, a 6-inch PVC line, runs northerly along McRae Avenue until it terminates at Ratliffe Street. From the T-section at Foster Road and McRae Avenue, a 12-inch steel line runs southerly to Leffingwell Road, then east to Gard Avenue where a T-section was installed. The 6-inch line on Leffingwell Road continues east until it terminates just east of Maidstone Avenue. From the T-section at Leffingwell Road and Gard Avenue, a 6-inch PVC line runs southerly along Gard Avenue to Taddy Street where it turns west and runs to Harvest Avenue where it turns south. The 6-inch line runs along Harvest Avenue to Mapledale Street where a T-section branches to the east and west. From this point, a 6-inch PVC line runs westerly along

Mapledale Street to Graystone Avenue where it turns south and runs to its terminus at Sibley Street. Also, from the Tee at Harvest Avenue and Mapledale Street, another 6-inch line runs easterly to Jersey Avenue. This line turns south and runs until it ends at Excelsior Drive.

The west section also begins as a 12-inch cement mortar-lined and coated steel pipe connected to the 30-inch line on the west side of the San Gabriel River, just south of Foster Road. This line jogs back onto Foster Road and runs westerly along this road, which forms the boundary between the cities of Downey and Bellflower. This line runs to Lakewood Boulevard where it turns north and reduces to 8 inches. The 8-inch line runs along Lakewood Boulevard until it terminates at Meadow Road, just north of Imperial Highway. Two other lines branch off the 12-inch line along Foster at Bellflower Boulevard.

! A 6-inch PVC line comes off a T-section in the middle of the intersection of Foster Road and Bellflower Boulevard and runs southerly until it terminates just south of Arthurdale Street.

! A second 6-inch PVC line comes off a T-section just to the west of the first T-section on Bellflower Boulevard and Foster Road and runs northerly until it terminates near Angell Street.

Schedule 3: In the City of Bellflower, a 24-inch line connects to the 30-inch main line just after it crosses the San Gabriel River from the Los Coyotes WRP. This line runs westerly along Flora Vista Street to an existing Metropolitan Transportation Authority (MTA) right-of-way. At this point the line runs northwesterly toward the Los Angeles River. At this point, an 8-inch branch runs southerly along an SCE right-of-way (just west of Texaco Avenue) to Alondra Boulevard. The 24-inch line turns north and follows the SCE right-of-way to Cortland Avenue, where it runs west to Orange Avenue. The line then runs north on Orange Avenue to Century Boulevard where a T-section was installed. From this point, the 24-inch line runs westerly along Century Boulevard to the Los Angeles River, where it was jacked under the river and the Long Beach (710) Freeway. This line terminates just to the west of the freeway for connection to Construction Schedule 4 (detailed below) at Martin Luther King Jr. Boulevard. From the T-section on Century Boulevard, the line reduces to a 16-inch pipe that runs northeasterly back to the SCE right-of-way, where the line runs northerly then northeasterly to Rio Hondo Drive. The 16-inch line continues northeast along this street to the end of the cul-de-sac. At this point, the line crosses over to the Rio Hondo channel and continues northeast along the flood channel's east side levee. The line reduces to 8-inches and uses an existing footbridge to cross the Rio Hondo channel where it terminates at John Anson Ford Park in the City of Bell Gardens. There are several other lines that branch off the 24- and 16-inch main line in this schedule.

- A 16-inch cement-coated and lined pipe branches off the 24-inch line running along the MTA right-of-way (located just west of the intersection of Somerset Boulevard and Hayter Avenue) and runs southerly along Los Angeles Department of Water and Power (LADWP) right-of-way to a point just north of Flower Street.

- At the point where the 24-inch line ends within the MTA right-of-way and moves into the SCE right-of-way, the 8-inch line (previously mentioned) runs southerly along the east side of the SCE right-of-way by Texaco Avenue where a T-section was installed at San Luis Street. At this point a 6-inch line continues to Somerset Boulevard where it turns west to the west side of the SCE right-of-way. The 6-inch line continues southerly to the south side of Alondra Boulevard where it terminates in a T-section.

- From the 8-inch line, another 6-inch PVC line branches off just north of Exeter Street and runs westerly to Gundry Avenue, where it turns north and runs to its terminus at San Rafael Street.

- At the T-section at San Luis Street, an 8-inch line crosses the SCE right-of-way westerly, continuing along San Luis Street to San Antonio Avenue where another T-section was installed. The 8-inch line continues

southerly along San Antonio Avenue to Somerset Boulevard, where the line turns westerly and runs to its terminus at the Los Angeles River.

- From the T-section at San Luis Street and San Antonio Avenue, a 4-inch PVC line runs westerly along San Luis Street to its terminus at Banana Park. A 6-inch PVC line branches off the 8-inch line on San Luis Street at San Jose Avenue (east of San Antonio Avenue) and runs southerly to Mark Keppel Street where it terminates in a T-section. From this point, a 6-inch line runs the west and to the east.

- Farther north along the 16-inch line in the SCE right-of-way, a 6-inch PVC line branches off at Southern Avenue, which becomes Stewart & Gray Road, and runs easterly to Pernell Avenue. The 6-inch line turns south and runs to Cole Street, where it turns east back to Pernell Avenue. The line turns south and runs to the Los Amigos Country Club, where the line runs easterly to its terminus.

- Also along the 16-inch line in the SCE right-of-way, another 6-inch PVC line branches off at Garfield Avenue and runs southerly to its terminus in a public alley south of Burntwood Street.

- The Bell Gardens Extension was completed in July 1995, and was connected to the 8-inch line that terminated in John Anson Ford Park. A dieccentric reducer was installed to allow for a 16-inch line to be connected. The 16-inch line then runs north through the park to Scout Avenue, where it turns east. The line continues along Scout, which changes to Park Lane, to its terminus at Garfield Avenue.

Schedule 4: A 24-inch cement-lined and coated steel pipe was connected to the 24-inch Schedule 3 line that terminated just west of the 710 Freeway. This line runs westerly along Martin Luther King Jr. Boulevard to a T-section at Wright Road, where two sections of pipeline run to the north and south. The north section begins with a 12-inch line that runs north along Wright Road to Duncan Avenue, where both Wright Road and the 12-inch line turn north. This line runs to Atlantic Avenue, where the line turns northeast and runs to a T-section at Tweedy Boulevard, then west to its terminus.

The south section begins with an 8-inch line from the T-section at Wright Road and Martin Luther King Jr. Boulevard and runs south along Wright Road to McMillan Street. At this point, the line turns west and runs to Gibson Avenue, where it turns south and runs for 1,039 feet to a T-section a San Rafael Street. From this point, the line reduces to a 6-inch pipe and runs easterly along San Rafael Street to its terminus at the 710 Freeway.

In 2008, The City of Lynwood connected an extension to the 8-inch line along the southerly section of the line on Wright Road. An 8-inch PVC line runs westerly along Josephine Street to its termination point at Virginia Avenue where it will serve the relocated Ham Park.

WALNUT VALLEY WATER DISTRICT

A 3,500 gpm pump station and an 8,000 gallon wet well was constructed at the intersection of Valley Boulevard and Grand Avenue, at the end of the 21-inch concrete gravity line from the Pomona WRP. At the pump station, a smaller, 500 gpm booster pump and hydropnuematic system supplies a 12-inch PVC pipe which runs north along Grand Avenue to Snow Creek Drive where it reduces to an 8-inch PVC pipe. The 8-inch line continues north from Snow Creek Drive to Amar Road where it turns west and terminates just before Lemon Avenue. An 8-inch AC line branches off the 12-inch PVC line at Snow Creek Drive and Grand Avenue and runs east, reducing to a 6-inch PVC line at La Puente Road and terminating east of Rodeo Way. A 6-inch AC line branches off from the 8-inch AC line at La Puente Road where it runs north before terminating just south of Bridgewater Lane.

From the pump station, a 20-inch cement mortar-lined and coated steel pipe runs west along Valley Boulevard to Fairway Avenue, where it turns south. This line continues to Colima Road, then south again along Brea Canyon Cutoff Road, where it terminates at the storage reservoirs located at Oakleaf Canyon Road. Several smaller transmission lines branch off the 20-inch main transmission line.

- A 6-inch PVC line branches off the main line on Valley Boulevard at Somerset Drive to serve the Walnut Ridge housing tract.

- An 8-inch PVC line branches off the main line on Valley Boulevard and Pierre Avenue. This line runs north on Pierre Avenue to Puente Avenue, where it reduces to a 6-inch PVC line. The 6-inch line continues east on Puente Avenue, then north on Suzanne Road where it terminates just south of Fuerte Drive.

- A 6-inch PVC line branches off the main line at Valley Boulevard and Lemon Avenue, running north to Vejar Road where it splits into 6-inch PVC lines running east and west. The line continues north on Lemon Avenue and terminates north of La Puente Road. The west line turns north through an easement, then continues west on Avenida Deseo, then south on Avenida Alipaz, where it terminates at Calle Baja. The east line continues along Vejar Road to its termination just east of Scherer Avenue.

- At the point where the 20-inch main line turns south off of Valley Boulevard and onto Fairway Drive, a 12-inch PVC line branches off and continues west along Valley Boulevard to Nogales Street, where it reduces to 8-inches. The line terminates at a T-section at Trafalgar Avenue, allowing for future expansion. Several smaller lines branch off this section of the distribution system. A 6-inch PVC line branches off at Valley Boulevard and Sentous Street, where it runs north to Hollingworth Street. From this point, three 6-inch lines branch off for short distances to serve users located to the east, west and north. A 12-inch PVC line branches off at Valley Boulevard and Nogales Street, where it runs north to its terminus just before La Puente Avenue. In addition to serving Nogales High School, this line allows for possible future service into the City of West Covina. A 6-inch PVC line continues north from the T-section at Valley Boulevard and Trafalgar Avenue, then east on Rorimer Street and north on Deepmead Avenue to its terminus at Sunshine Park.

- Another 12-inch PVC line branches off the line on Fairway Drive, running west along Colima Road to Otterbein Avenue, where it reduces to 8-inches that terminates at Shabarum Regional County Park, just before Azusa Avenue. Several smaller lines branch off this section of the distribution system. A 6-inch PVC line branches off the 12-inch line, running north along Bandida Avenue to its terminus at Rowland

Regional County Park. Two 6-inch PVC lines branch off the 12-inch line at the intersection of Colima Road and Otterbein Avenue. The first line runs north to Addis Street, while the second runs south along Otterbein Avenue, then west along Killian Street, then south on Lerona Avenue. An 8-inch PVC line branches off the 12-inch line, running south along Fullerton Road to a T-section at Galatina Street. One end of the T-section is blind-flanged, while a 6-inch PVC line runs east through an easement, then continuing along Galatina Street. This line then runs north on Cantaria Avenue, east on Farjardo Street to its terminus just before Los Padres Drive. Another 6-inch PVC line runs along Batson Avenue from Farjardo Street.

- A second 12-inch PVC line branches off the main transmission line along Fairway Drive, running east along Colima Road to Lemon Avenue, where a 6-inch PVC line branches off and runs north to serve several users. The 12-inch line continues east along Colima Road to Grand Avenue, where it turns north to a meter at the Diamond Bar Golf Course. The 12-inch line continues north along Grand Avenue, where it reconnects to the 20-inch main line on Valley Boulevard. Two 6-inch PVC lines branch off the 12-inch line to supply a looped-system serving Gateway Corporate Center. Another 6-inch PVC line branches off the 12-inch line at Brea Canyon Road, terminating just north of Golden Springs Drive.

- In a 1994-95 extension of the recycled water system, a 12-inch PVC line was connected to the 20-inch main transmission line on Fairway Drive, running east along Business Parkway and Currier Road, and terminating on Currier Road just before Brea Canyon Road. A 6-inch AC line branches off the 12-inch PVC line and runs north through an easement to join an 8-inch PVC line on Spanish Lane. The 8-inch PVC line runs west where it terminates just west of Brea Canyon Road. The 8-inch line also runs east on Spanish Lane, then north on Cheryl Lane and Brea Canyon Road to its terminus at the WVWD office. This section serves the landscaping around a number of commercial and light industrial buildings.

- In a 1998-99 extension of the recycled water system, the 8-inch PVC line terminating at the WVWD office was extended north to Old Ranch Road. From this point, the line turns east and runs to a frontage road along the Union Pacific Railroad, where it turns and runs north to its terminus at Grand Avenue in the City of Industry. Also during this year, a 12-inch PVC was connected to an existing 12-inch PVC line on Golden Springs Drive, with the new line running south along Adel Avenue and Davan Street. Approximately 100 feet of DIP runs east along a right-of-way to Via Sorella, where the line changes back to PVC and continues south to Brea Canyon Road. The line continues southerly to its terminus at Diamond Lane. This line serves the Diamond Crest Homeowners Association.

APPENDIX H

CENTRAL BASIN MWD – RIO HONDO SYSTEM

Construction began in April 1993 on a 22,000 gpm pump station, located adjacent to the 66-inch San Jose Creek Outfall on the east side of San Gabriel River Parkway, approximately 900 feet north of Beverly Boulevard. The pump station was completed in March 1994 and went on-line delivering recycled water in July 1994. The first schedule of pipeline construction in the City of Whittier and the City of Santa Fe Springs began in April 1993 and was completed in February 1994, with the Whittier Connector Unit crossing of the 605 Freeway/San Gabriel River being completed in May 1994. Construction on the Vernon Phase 1 and 2A Unit began in June 1993 and was completed in September 1994, while construction on the Pico Rivera, Montebello, Montebello/Vernon, and Vernon 2B units has not yet begun.

Whittier Connector Unit: A 48-inch cement mortar-lined and coated steel pipeline carries recycled water from the Rio Hondo Pump Station toward San Gabriel River Parkway. Just outside the pump station, a 36-inch cement mortar-lined and coated steel pipeline tees off and runs back toward the San Gabriel River levee, where it turns and runs north. The line then turns east and invert siphons under the San Gabriel River channel, where it then crosses an SCE and a Yellow Freight Company railroad right-of-way. The line was then jacked under a Union Pacific Railroad line and the 605 Freeway to Pioneer Boulevard, just south of Strong Avenue. Between the railroad and the freeway, the pipeline was reduced to 24-inches. The 30-inch line is contained in a 42-inch steel casing, and the 24-inch line is contained in a 36-inch steel casing. At Pioneer Boulevard, the 24-inch line expands back to 30-inches, then runs southwest to a point where it is jacked under Beverly Boulevard in a 42-inch steel casing. This portion of the pipeline construction connects to the Whittier Unit on the south side of Beverly Boulevard.

Whittier Unit: The construction for this schedule began where the Whittier Connector Unit ended on Pioneer Boulevard just south of Beverly Boulevard. From this point, the 30-inch line continues southwest along Pioneer Boulevard to Orange Grove Avenue, where it turns southeast. The line continues along Orange Grove Avenue to Norwalk Boulevard, where it turns southwest and runs to El Rancho Drive. At this point, the line turns southeast and runs along El Rancho Drive to a T-section at Broadway Road. From this T-section, an 18-inch line runs east along Broadway Road to Western Avenue where it terminates in a temporary blow-off valve, plug and blind flange. Any future (although currently unplanned) extensions of the recycled water system into the City of Whittier will continue from the point.

From the T-section at El Rancho Drive and Broadway Road, a 16-inch cement mortar-lined and coated steel pipeline continues southwesterly along Broadway Road to Norwalk Boulevard. Along the way, the line was jacked underneath Washington Boulevard. At Norwalk Boulevard, the 16-inch line turns south and runs to a point just south of Walnut Street, where the line connects to the Santa Fe Springs Unit. Along the way, the line was jacked underneath Slauson Avenue.

A second set of pipelines was constructed from the Rio Hondo Pump Station. From the pump station, a 48-inch cement-lined and coated steel pipeline runs to the property line on San Gabriel River Parkway, where it terminates in a T-section. A 12-inch line runs northeasterly from the T-section along the parkway to the intersection of Fairway Drive, where it terminates in a blind-flanged T-section. Also branching from the 48-inch line T-section is a 36-inch cement-lined and coated steel line that runs southwesterly to Beverly Boulevard. At this point, the line reduces to 30-inches and terminates in a T-section at Tobias Avenue, with the 30-inch branch blind-flanged. A 10-inch line runs along Tobias Avenue from the T-section before it also terminates in a blind-flange. Future construction will continue from the blind-flanged sections.

Santa Fe Springs Unit: The main portion of this construction schedule is a 16-inch cement-lined and coated steel that connects to the Whittier Unit on Norwalk Boulevard, between Walnut and Burke Streets. The 16-inch line continues south along Norwalk Boulevard to Florence Avenue, where it connects to a 24-inch line of the Century recycled water distribution system. This is the first of several links between the two distribution systems. Along the 16-inch line on Norwalk Boulevard, two T-sections were installed to allow for construction of other pipelines.

The first T-section on the 16-inch line is located at the intersection of Norwalk Boulevard and Burke Street, with a 12-inch line branching off and running east to its termination at a T-section at Dice Road. From this point, a looped-section of pipelines begins. The northern portion consists of a 12-inch line running north on Dice Road to a T-section, then east through an alley to a T-section on Sorenson Avenue, where the line reduces to 6-inches and continues south to a T-section at Santa Fe Springs Road, then southwest to a T-section at Los Nietos Road. The south portion also begins at the T-section at Burke Street and Dice Road and consists of a 12-inch line running south to Los Nietos Road, then southeast to Santa Fe Springs Road, where it connects to the northern portion at the T-section.

From the T-section at Los Nietos and Santa Fe Springs Roads (the street name changes to Bloomfield Avenue at Telegraph Road), the 12-inch line continues southwest to Florence Avenue, where it connects to a 12-inch line of the Century recycled water distribution system.

The second T-section on the 16-inch Norwalk line is located at Norwalk Boulevard and Los Nietos Road. From this point, an 8-inch line runs west to Pioneer Boulevard, where the line terminates in a temporary blow-off valve and plug.

Vernon Phase 1 and 2A Unit: This section of pipeline connects the west side of the Rio Hondo distribution system to Schedule 4 of the Century distribution system, detailed in Appendix F. The 12-inch line of Schedule 4 terminated at a T-section at the intersection of Atlantic Avenue and Tweedy Boulevard in the City of South Gate. From this point, an 18-inch line runs north along Atlantic Avenue to a T-section at Ardine Street, where a 10-inch line runs west to Quartz Avenue, then south to its terminus at Independence Avenue.

From the T-section at Atlantic Avenue and Ardine Street, the 18-inch line continues north to a T-section at Elizabeth Street. At this intersection, the line turns west and runs to Otis Avenue. The 18-inch line turns north again and runs along Otis Avenue to a T-section at Randolph Street.

From the T-section at Otis Avenue and Randolph Street, a short section of 6-inch line runs east where a blind-flange was installed to allow for future construction. The 18-inch line continues west along Randolph Street to its terminus at Boyle Avenue. Along Randolph Street, an 8-inch line branches off at Newell Street and runs south to its terminus at Saturn Avenue.

PUENTE HILLS/ROSE HILLS

The distribution system consists of 2,956 feet of 36-inch reinforced concrete gravity line that runs east from the 66-inch San Jose Creek WRP Outfall on Workman Mill Road to the original landfill entrance. The first of three pump stations lifts 12,000 gpm of recycled water 500 feet through 2,200 feet of 36-inch force main to an existing 650,000 gallon reservoir located close to the PERG Facility. The second pump station, located at the 650,000 gallon reservoir, lifts the recycled water another 300 feet through 3,700 feet of 30-inch force main to a 1.2 million gallon reservoir constructed by Rose Hills on the border between the landfill and cemetery. The third pump station, located at the Rose Hills storage tank, lifts 2,200 gpm of recycled water through 4,700 feet of 18-inch buried DIP leading to a new 800,000 gallon reservoir located at the former Nike site, with 2,000 feet of aboveground galvanized steel pipe serving the eastern landfill.

Construction of the gravity line was completed in June 1993, with construction of its connection to the San Jose Creek Outfall completed in March 1996. In 2001, construction of the expansion to serve the eastern portions of the landfill and the upper areas of the ever-expanding cemetery was completed.

USGVMWD – WHITTIER NARROWS RECREATION AREA EXTENSION

Recycled water is delivered from the USGVMWD pump station located adjacent to the chlorine contact tanks in the northwest section of the WNWRP. This pump station, designed by Tetra Tech, Inc., is capable of providing 10,000 gpm of recycled water to the transmission and distribution system. This pumping plant consists of one 200 HP, 2,000 gpm and three 350 HP, 4,000 gpm vertical turbine pumps provided by Simflo Pumps Inc. The third 4,000 gpm pump serves as a backup.

From the USGVMWD pump station the recycled water is transported through a 24-inch, Class 200 ductile iron pipeline (DIP) that runs northeasterly, suspended along the eastern side of the WRP's chlorine contact tank. All buried portions of the DIP have been double-bagged with 8 ml purple plastic to protect it against corrosion and to identify it as a recycled water pipeline. The 24-inch pipeline exits the pump station near the northeast corner of the WNWRP site and heads north for approximately 165 feet and turns northwest for 115 feet, tentatively following the property line. The pipeline then turns due west for 195 feet.

Approximately 50 feet south of the northwest corner of the WRP's property and a SCE easement, the 24-inch pipeline exits the WRP site and runs northwest to the southern edge of the SCE easement, then north through the easement. On the north side of the easement, the pipeline is jacked under Mission Creek and encased in an 82-foot long, 36-inch welded steel casing. The 24-inch pipeline continues northward through an archery range and a second SCE easement to a point approximately 33 feet north of the easement where it ends in a T-section (hereinafter identified as "Junction 1").

There is a 24-inch butterfly valve on the western branch of the Tee at Junction 1, after which the 24-inch pipeline continues due west, then northwesterly, then due west again, then northwesterly until it reaches the eastern bank of the Rio Hondo. The 24-inch pipeline then follows the bike path northward along the eastern edge of the river until it passes under the Pomona (60) Freeway right-of-way. Under the freeway, the pipeline is encased in a 36-inch welded steel casing. Just north of the freeway, the 24-inch pipeline turns east and runs parallel to the freeway to Loma Avenue.

Along Loma Avenue, the 24-inch pipeline runs north where it reduces to an 18-inch Class 250 DIP. Along this run, three T-sections with gate valves (two 6-inch and one 12-inch) were installed to serve the existing irrigation systems in what is known as Area "A" of the Whittier Narrows Recreation Area. The 18-inch pipeline continues north along Loma Avenue where it terminates with an 18-inch butterfly valve and a blind-flange for future extension. Three more T-sections with 6-inch gate valves for servicing Area "A" have been installed along the 18-inch pipeline.

In order to interconnect the irrigation systems serving Area "A" (located north of the 60 Freeway and bordered by Loma Avenue on the west and Rosemead Boulevard on the east) and Area "B" (located east of Rosemead Boulevard), a 12-inch Class 350 DIP was installed. On the south side of the Rosemead Boulevard entrance to Area "A", north of the 60 Freeway, a 12-inch tapping sleeve and gate valve was installed on an existing 12-inch AC irrigation pipeline. From this point, a 12-inch DIP runs northeast to the north side of the park entrance where it was jacked under Rosemead Boulevard and encased in 18-inch welded steel casing. From the west side of Rosemead Boulevard, the 12-inch pipeline runs due east to Area "B". At the end of this pipeline, an 8-inch reducer and tapping sleeve with a gate valve were installed on an existing 8-inch irrigation pipeline completing the interconnection of the two recreation areas.

Back at the T-section at Junction 1, the east branch reduces to a 16-inch Class 250 DIP through a butterfly valve, running due east to a T-section with a 6-inch stub-out and gate valve for a future extension. From this Tee, the 16-inch pipeline jogs slightly to the north, then continues due east where a second T-section with a 6-inch stub-out and gate valve for a future extension was installed. From the second Tee, the 16-inch pipeline continues due east where a third T-section with a 6-inch stub-out and gate valve for a future extension was installed. From the third Tee, the 16-inch pipeline continues due east to the west side of Rosemead Boulevard at the southern entrance to the Whittier Narrows Recreation Area, south of the 60 Freeway. At this point, the 16-inch pipeline was jacked under the street and encased in 24-inch welded steel casing.

From the east side of Rosemead Boulevard, the 16-inch pipeline continues due east into Area "D" of the Whittier Narrows Recreation Area where a fourth T-section with a 6-inch stub-out and gate valve for a future extension was installed. From the fourth Tee, the 16-inch pipeline continues due east to the edge of Legg Lake. From this point, the 16-inch pipeline was jacked under the connecting channel between the middle lake and the south lake and encased in 24-inch welded steel casing. From this point, the 16-inch pipeline continues due east where it turns southeast and runs to a T-section at the intersection of Santa Anita Avenue and Lexington Gallatin Road (hereinafter identified as "Junction 2").

There is a 16-inch butterfly valve on the southeastern branch of the Tee at Junction 2, after which the 16-inch pipeline continues southeast, where it terminates in a fifth T-section with a 6-inch stub-out and gate valve for a future extension.

Back at Junction 2 at the Santa Anita Avenue/Lexington Gallatin Road intersection, an 8-inch reducer and gate valve is connected to the T-section, and an 8-inch, Class 350 DIP pipeline runs. This pipeline then turns southeast. The pipeline then runs due east where it terminates at Andrews Street in a T-section with a 6-inch gate valve and an 8-inch lateral that serves a 4-inch stub out to South El Monte High School.

LANCASTER EASTERN AGRICULTURAL SITE

To deliver recycled water to this site, approximately 17.2 miles of transmission lines (terminating in a 2 million gallon storage tank) were designed and constructed to supply the proposed agricultural area of approximately 4,650 acres (3,800 acres actually cultivated). A 36-inch steel transmission line runs south from the Lancaster WRP along Sierra Highway, then east along East Avenue E. At 60th Street East, the transmission line transitions down to a 28-inch HDPE line and splits, with one line running down Avenue E then south on 90th Street East to Avenue G, then east again to its terminus halfway between 90th and 100th Streets. The second line runs south on 60th Street East then east on East Avenue F to 90th Street East where it reconnects with the first line.