Twenty-Fifth Annual Status Report on Recycled Water Use



Fiscal Year 2013-14

SANITATION DISTRICTS OF LOS ANGELES COUNTY

Twenty-Fifth
ANNUAL STATUS REPORT

ON

RECYCLED WATER USE

Fiscal Year 2013-14

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 managing 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-fifth 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 the quantities they 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 areas 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: For this 25th Anniversary edition, the spotlight is on the Sanitation Districts' Joint Administrative Office in Whittier, CA. Not only does all the landscape irrigation around the site utilize recycled water produced by the adjacent San Jose Creek Water Reclamation Plant, but so does the cooling system, as well as the toilets, urinals, and floor drain traps of the 1993 building expansion. The JAO expansion became the first dual-plumbed building in Los Angeles County to use recycled water for internal applications.

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SANITATION DISTRICTS

Total Effluent Produced: 418.76 MGD (469,244 AFY), 2.6% decrease
Total Recycled Water Produced: 155.67 MGD (174,434 AFY), 62.1% of capacity, 37.2% of the total effluent produced, 6.0% decrease
Total Recycled Water Used: 91.35 MGD (102,364 AFY), 58.7% of recycled water produced, 1.4% decrease, 757 sites (34 new sites added, 2 removed)

Groundwater replenishment (4) -	50.88 MGD (57,018 AFY)	55.7% of total reuse	5.2% decrease
Landscape irrigation (683) -	18.76 MGD (21,024 AFY)	20.6% of total reuse	10.8% increase
Agriculture (12) -	13.77 MGD (15,430 AFY)	15.1% of total reuse	4.1% decrease
Industrial (25) -	3.65 MGD (4,086 AFY)	4.6% of total reuse	39.0% increase
Environmental (1) -	4.29 MGD (4,806 AFY)	4.7% of total reuse	8.2% decrease

Total Reuse Since Inception: 2,799,056 AF (911.7 billion gallons)

Transmission lines: 1,382,620 linear feet (262 miles)

Acreage Served: 16,441 acres (direct non-potable use)

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

Recycled Water Purveyors: 33

Recycled Water Contracts: 25

Chemical Savings[1]: $196,503

Greenhouse Gas Reduction[2]: 230,319 tons of carbon dioxide

Capacity of Future Planned Reuse Projects: 100,270 AFY (89.48 MGD)

JOINT OUTFALL SYSTEM

Total Effluent Produced: 377.08 MGD (422,537 AFY), 2.6% decrease
Total Recycled Water Produced: 113.99 MGD (127,727 AFY), 30.2% of the total produced, 7.2% decrease
Total Recycled Water Used: 73.59 MGD (82,458 AFY), 64.6% of recycled water produced, 0.5% decrease

SANTA CLARITA

Total Recycled Water Produced: 19.56 MGD (21,913 AFY), 1.8% decrease
Total Recycled Water Used: 0.290 MGD (326 AFY), 1.5% of recycled water produced, 11.3% increase

ANTELOPE VALLEY

Total Wastewater Treated: 22.60 MGD, 5.4% decrease
Total Recycled Water Produced: 22.13 MGD (24,794 AFY), 3.5% decrease
Total Recycled Water Used: 17.35 MGD (19,452 AFY), 78.5% of recycled water produced, 6.0% decrease

1 Recycled water delivered to the various distribution systems does not require dosing 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 a net energy cost of approximately 3,000 kWh/AF with the attendant CO_2 production.

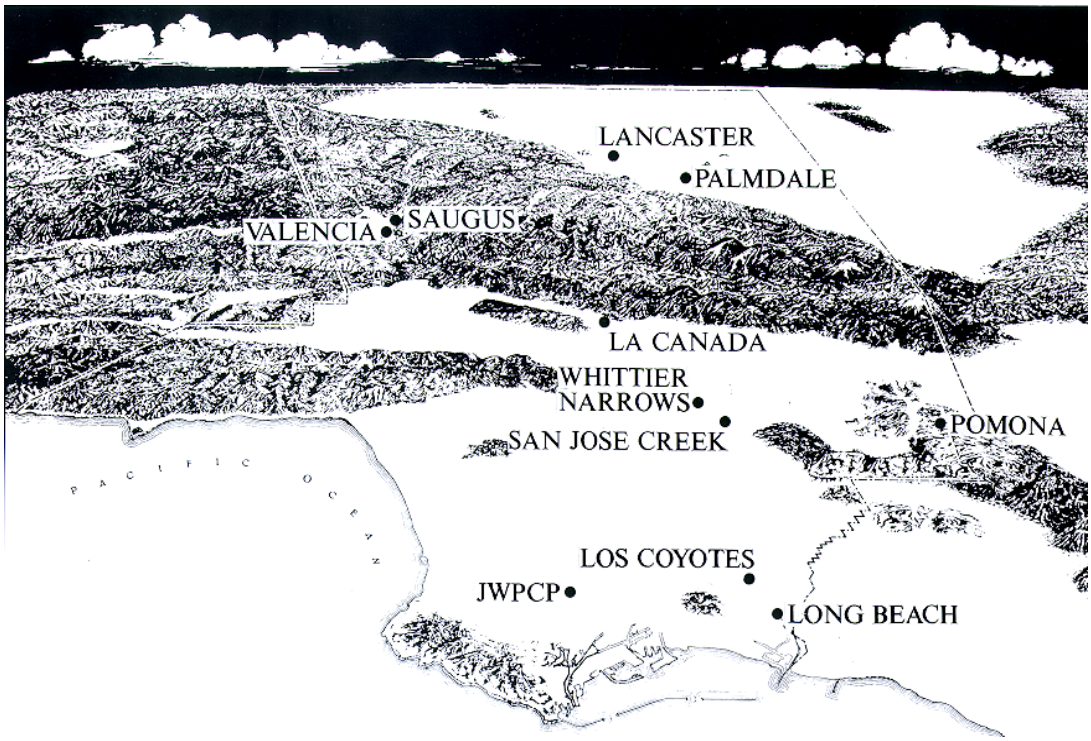
1. OVERVIEW

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 5.5 million people in 78 cities and unincorporated areas within Los Angeles County. Effluent quality from the WRPs ranges from disinfected secondary to filtered, disinfected tertiary. During Fiscal Year 2013-14 (FY 13-14), Sanitation Districts' facilities produced an average of 418.76 million gallons per day (MGD), or 469,244 acre-feet per year (AFY) of effluent, which is a decrease of 2.6% from the preceding fiscal year and a 21.9% 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 on-going decline in effluent production (19.0% since FY 04-05) is attributable to a downturn in local economic activity combined with increasing water conservation efforts (e.g., low flow toilets, waterless urinals, water efficient washing machines, etc.), due to a multi-year statewide drought beginning in 2006 that has only grown in scale in recent years. Effluent production at Sanitation Districts' facilities is currently at levels last seen in the late 1960s.

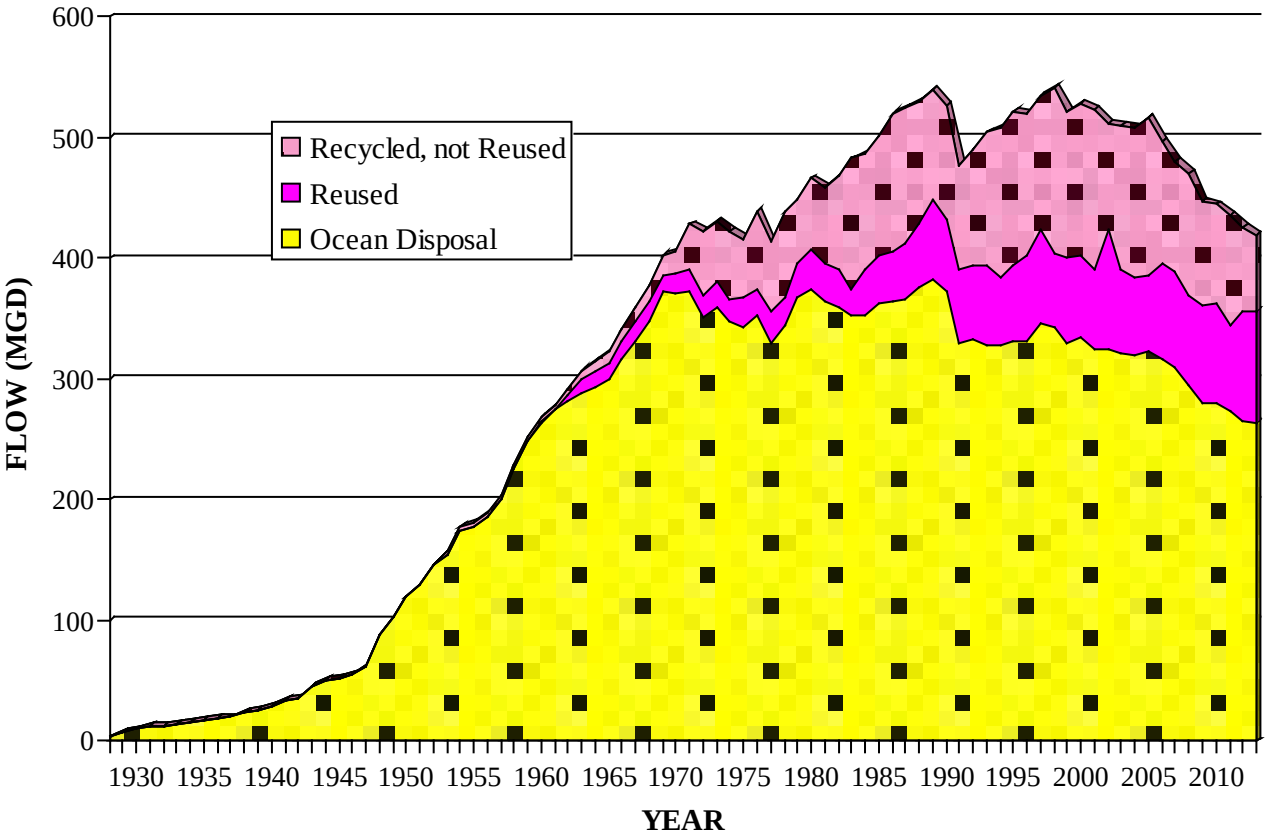
FIGURE 1
LOCATION OF SANITATION DISTRICTS' WASTEWATER TREATMENT FACILITIES



Nominal capacity at the ten Sanitation Districts' WRPs is 250.8 MGD (281,040 AFY) as of the end of FY 13-14. However, of the total effluent produced, only 155.67 MGD (174,434 AFY) consisted of recycled water available for reuse from these 10 facilities (62.1% of capacity). This amount is 37.2% of the total amount of effluent produced and a decrease of 6.0% from the preceding fiscal year. The remaining 263.09 MGD (294,810 AFY) was effluent discharged to the ocean from the Sanitation Districts' Joint Water Pollution Control Plant (JWPCP) in the City of Carson, a 0.5% 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 2013). 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
1928-2013



Of the total amount of recycled water produced, 91.35 MGD (102,364 AFY) was actively reused for a variety of applications including urban landscape irrigation, agricultural irrigation, recreational impoundments, industrial process water, wildlife habitat maintenance, and groundwater replenishment. This amount of beneficial use is the second time the use of recycled water has ever exceeded 100,000 AFY in any fiscal year and is the second year in a row. The amount reused was 58.7% of the recycled water produced, a 1.4% decrease from the preceding fiscal year which set the historic record amount of reuse. 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. During FY 13-14, 28 new landscape irrigation sites, one industrial site, and five temporary construction sites began receiving Sanitation Districts' recycled water.

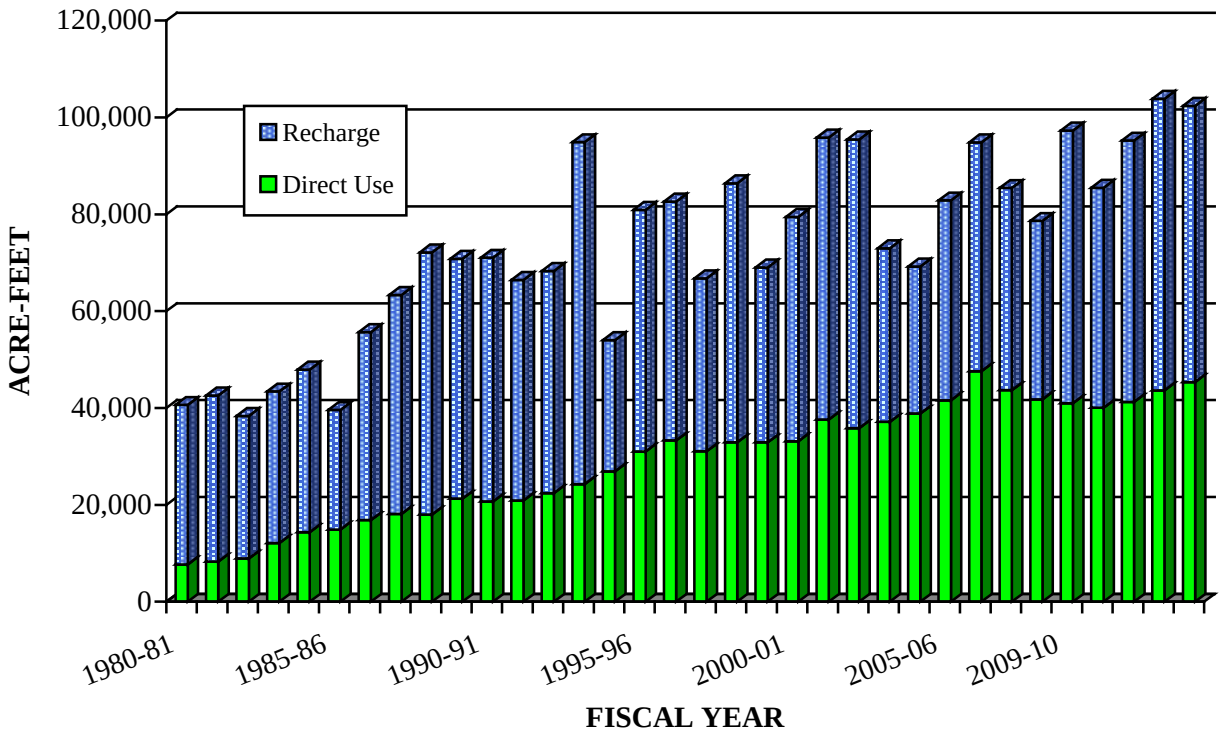
TABLE 1
RECYCLED WATER PRODUCED AND REUSED AT WATER RECLAMATION PLANTS
FISCAL YEAR 2013-14

Water Reclamation Plant	Nominal Treatment Capacity (AFY)	Quantity Recycled (AFY)	Percent Change from FY 12-13 (+/-)	Quantity Reused (AFY)	Percent Change from FY 12-13 (+/-)	Percent of Recycled Water Used
La Cañada	225	89	-4.3	89	0	100
Long Beach	28,015	18,314	-12.3	6,193	-8.6	33.8
Los Coyotes	42,020	24,804	+8.1	7,459	+11.9	30.1
Pomona	16,810	8,293	-15.6	8,195	-4.8	98.8

San Jose Creek	112,055	66,589	-11.5	51,011	-2.6	76.6
Whittier Narrows	16,810	9,639	+11.3	9,510	+11.6	98.7
Valencia	24,205	15,968	-4.0	326	+11.2	2.0
Saugus	7,285	5,945	+4.7	0	0	0
Lancaster	20,170	15,268	-6.2	11,103	-12.5	72.7
Palmdale	13,445	9,525	+1.3	8,478	+7.3	89.0
TOTAL	281,040	174,434	-6.0	102,364	-1.4	58.7

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 13-14.

FIGURE 3
DIRECT NON-POTABLE REUSE VS. GROUNDWATER RECHARGE
1980-81 TO 2013-14



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 757 reuse sites on approximately 16,441 acres, utilizing approximately 1,382,620 linear feet (262 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-2014.

Cities with Sites Using Sanitation Districts' Recycled Water

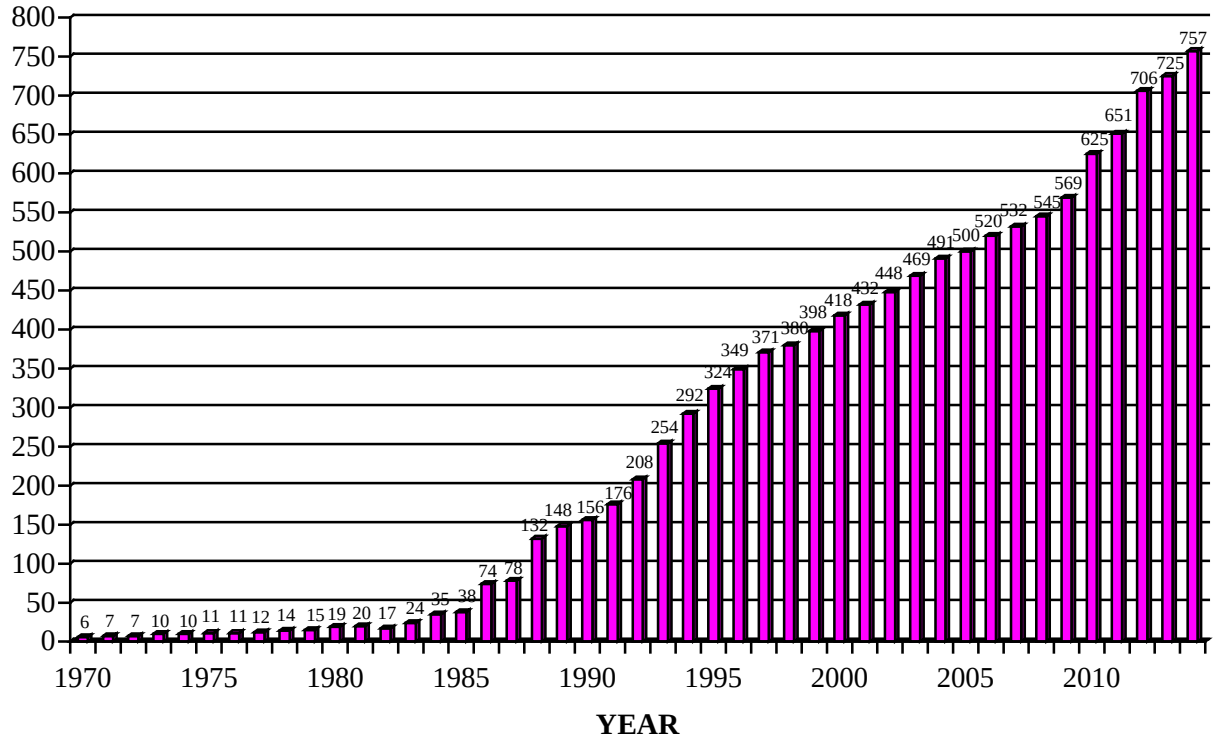
Bellflower	Norwalk
Bell Gardens	Palmdale
Cerritos	Paramount
Compton	Pico Rivera
Cudahy	Pomona
Diamond Bar	Rowland Heights
Downey	Santa Clarita
El Monte	Santa Fe Springs
Huntington Park	Signal Hill
Industry	South El Monte
La Cañada	South Gate
Lakewood	Vernon
Lancaster	Walnut
Long Beach	West Covina
Lynwood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

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

TABLE 2
RECYCLED WATER USED BY WATER RECYCLING PROJECT
FISCAL YEAR 2013-14

Project Name	Pipeline Length (linear feet)	Recycled Water Used (AFY)	Percent Change from FY 12-13 (+/-)	No. of New Reuse Sites
La Cañada-Flintridge Country Club		89	-4.3	
Long Beach Water Department	179,680	5,298	+13.2	3
Alamitos Seawater Barrier		896	-57.2	
City of Bellflower	1,900	53	+12.8	
City of Cerritos	142,600	2,141	+8.8	
City of Lakewood	28,300	581	+10.9	
Central Basin MWD (Century)	107,160	4,685	+13.6	4
Pomona Water Department	37,000	1,872	+10.3	
Spadra Landfill		451	+6.4	
Walnut Valley Water District	166,320	1,476	-4.2	4
Water Replenishment District		56,122	-3.4	
City of Industry	44,350	1,080	+7.4	
Rowland Water District	85,540	880	+82.2	3
California Country Club		533	+15.9	
LA Sanchez Nursery		10	0	
Central Basin MWD (Rio Hondo)	290,400	362	+13.1	
Puente Hills/Rose Hills	8,900	2,673	+9.8	
USGVMWD Phase I Extension (SJC)	11,020	790	+10.8	
USGVMWD Phase II-B Extension (SJC)	71,360	708	+48.4	15
USGVMWD Phase II-A Extension (WN)	18,900	1,758	+6.8	
Castaic Lake Water Agency	16,490	326	+11.3	
Piute Pond		4,806	-8.2	
Apollo Community Regional Park	23,800	208	-13.5	
Eastern Agricultural Site	96,600	6,057	-2.4	
City of Lancaster	29,800	32	+1,500.0	5
Los Angeles World Airports Lease	13,200	8,398	+6.2	
City of Palmdale	9,300	79	+9.7	
TOTALS	1,382,620	102,364	-1.4	34

FIGURE 4
INCREASE IN NUMBER OF REUSE SITES
1970-2014



During FY 13-14, 50.085 MGD (56,122 AFY) was used for groundwater replenishment from the San Jose Creek, Whittier Narrows, and Pomona WRPs. All three plants are included in the recharge permit for this project and all three are now included in the revised contract for the sale of recycled water to the Water Replenishment District of Southern California (WRD) for groundwater recharge as of July 1, 2013. From the commissioning of the Whittier Narrows WRP in August 1962 through the end of FY 13-14, approximately 1,858,093 acre-feet (AF) of recycled water from these three plants have been used to recharge the Central Basin aquifer.

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 13-14, as the Alamitos Seawater Intrusion Barrier received 0.799 MGD (896 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.

During FY 13-14, the total of 50.884 MGD (57,018 AFY) that went to groundwater replenishment was a 5.2% decrease from the preceding fiscal year. This decrease was the result of the interruption of barrier injection

water beginning in April 2014 for expansion of the advanced treatment plant. Of the total amount of water reused during FY 13-14, 55.7% went for groundwater replenishment, which is the fifth time in the past ten years that this reuse application has made up more than half of total reuse. In past years, concerns over the potential for a fish kill of a colony of non-native *Tilapia* fish living in the lined portion of the San Gabriel River necessitated the continued discharge of effluent from the San Jose Creek WRP to that point, thus preventing its diversion directly into the San Gabriel Coastal Spreading Grounds from the San Jose Creek Outfall line. 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. Now, after winter rains have washed the *Tilapia* far enough downstream, the gate may be fully closed allowing for complete capture of all recycled water remaining in the Outfall during select times.

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

- A total of 712 of the individual reuse sites used recycled water for some form of landscape irrigation, with approximately 18.762 MGD (21,024 AFY), or 20.5% of the total water reused going toward this particular application. These sites include 115 parks, 118 schools, 243 commercial and office buildings (e.g., offices, warehouses, retail, car dealerships, hotels, restaurants, etc.), 124 roadway greenbelts, 29 public facilities (e.g., police station, post office, libraries, landfills, etc.), 24 golf courses, 21 nurseries, 19 residential developments, 12 churches, and 7 cemeteries.

- Agricultural usage at 11 reuse sites accounted for approximately 13.770 MGD (15,430 AFY), or 15.1% of the total reused.

- Twenty-nine 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 3.646 MGD (4,086 AFY), or 4.0% of the total reused.

- Approximately, 4.289 MGD (4,806 AFY), or 4.7% 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 2013-14*

1. **Antelope Valley Farms** **8,294 AFY**
   Palmdale WRP *(agricultural irrigation of alfalfa)*
2. **Eastern Agricultural Site** **6,057 AFY**
   Lancaster WRP *(agricultural irrigation of alfalfa)*
3. **Rose Hills Memorial Park** **1,405 AFY**
   San Jose Creek WRP *(landscape irrigation)*
4. **Puente Hills Landfill** **1,245 AFY**
   San Jose Creek WRP *(irrigation & dust control)*
5. **THUMS** **1,141 AFY**
   Long Beach WRP *(oil zone repressurization)*
6. **Industry Hills Recreation Area** **1,080 AFY**
   San Jose Creek WRP *(landscape irrigation)*
7. **Bonelli County Regional Park** **937 AFY**
   Pomona WRP *(landscape irrigation)*
8. **Whittier Narrows Recreation Area** **913 AFY**
   Whittier Narrows WRP *(landscape irrigation)*
9. **Alamitos Intrusion Barrier** **896 AFY**
   Long Beach WRP *(seawater barrier injection)*
10. **Malburg Generation Station** **885 AFY**
    Los Coyotes WRP *(cooling towers)*

** 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.

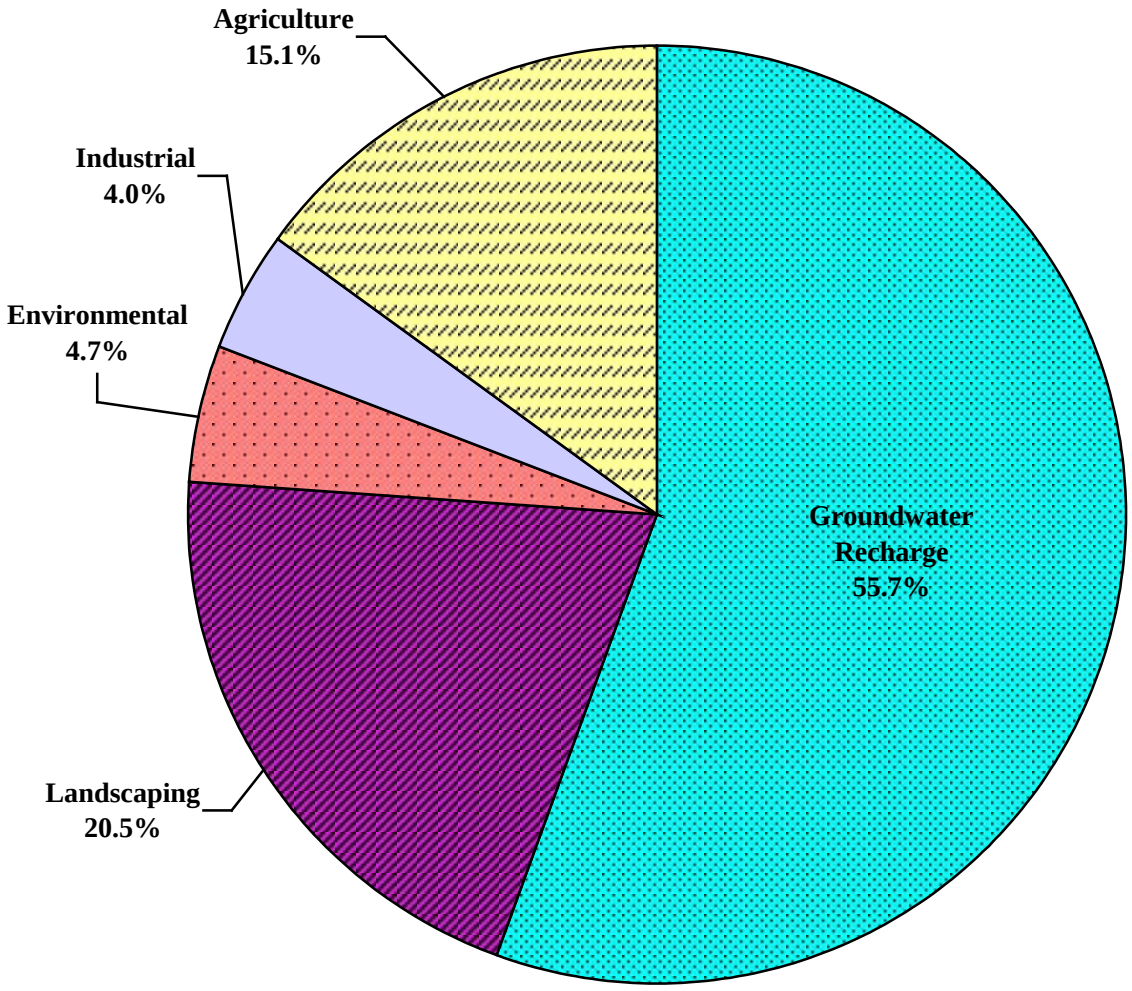
TABLE 3
CATEGORIES OF RECYCLED WATER USAGE
FISCAL YEAR 2013-14

Reuse Application	No. of Sites	Area Applied (acres)	Usage (MGD)
Parks	115	3,580.8	5.171
Golf Courses	24	2,765.8	5.186
Schools	118	1,327.6	2.313
Roadway Greenbelts	124	685.4	1.194
Public Facilities[1]	29	498.5	1.475
Commercial Buildings[2]	242	540.3	1.330
Nurseries	21	118.9	0.194
Cemeteries	7	701.4	1.561
Residential Developments	19	146.3	0.276
Churches	12	12.8	0.063
Industrial[3]	29	377.5	3.646
Agriculture[4]	11	3,389.0	13.770
Environmental Enhancement	1	400	4.289
SUBTOTAL	752	14,544.3	40.468
Groundwater Recharge	4	646	50.884
TOTAL	756	15,190.3	91.352

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 carpet dyeing, concrete mixing, cooling towers, metal finishing, oil field injection, toilet flushing, and construction applications such as soil compaction and dust control.
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 2013-14



1.3 ECONOMIC AND ENVIRONMENTAL IMPACTS

At the end of FY 13-14, the Sanitation Districts had 25 contracts (three 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 $196,503 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 13-14), 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 2013-14

Purveyor	Potable Water ($/AF)	Recycled Water ($/AF)	Discount (%)
Long Beach Water Department	1,105.12	552.78 – 773.63	30 – 50
City of Cerritos	614.20	326.70	47
City of Lakewood	1,258.88	466.09	63
Central Basin MWD	1,038.00 – 1,180.00	309.00 – 540.00	48 – 74
Pomona Water Department	783.70	548.59	30
Walnut Valley Water District	1,224.04	649.04	47
Rowland Water District	1,219.68	701.32	42
San Gabriel Valley Water Co.	1,236.54	220.00 – 978.66	21 – 82
Suburban Water Systems	1,037.60 – 1,116.44	882.09 – 948.74	15
Valencia Water Company	640.77	592.42	8

To put things into perspective, the record-high amount of 102,364 AF of water reused in FY 13-14 is equivalent to the water supply for a population of 511,820, roughly the size of the city of Tucson, AZ, the 33rd largest city 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 307.0 million kWh of electricity were conserved in FY 13-14, which is equivalent to the annual output of a 35.1-megawatt power plant consuming over 166,000 barrels of oil. At $0.15/kWh (based on Southern California Edison residential billing rate), this equates to an annual savings of approximately $46 million in electricity. At $105.24/barrel,[5] this equates to an annual savings of approximately $17.5 million in oil.

The conservation of fossil fuels and energy also resulted in significant reductions in potential air pollutants. During FY 13-14, 176.6 tons of nitrogen oxide, 30.7 tons of carbon monoxide, 18.4 tons of sulfur oxides, 6.1 tons of particulates, and 1.5 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 230,320 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.

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3 2010 Census.

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

5 June 2014 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 Lancaster
615 West Avenue H
Lancaster, CA 93534
(661) 945-6863

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

Suburban Water Systems
2235 E. Garvey Ave N
West Covina, CA, 91791
(626) 261-2218

City of Palmdale
38250 N. Sierra Hwy
Palmdale, CA 93550
(661) 267-5310

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

Golden State Water Company
110 E. Live Oak Avenue
Arcadia, CA 91006
(626) 446-1372

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 2013-14

Category	Units	Savings
Water Supply	acre-feet	102,364
Water Supply	No. of People	511,820
Energy	kilowatt-hours	307,092,000
Energy	megawatts	35.1
Energy	barrels of oil	166,415
Electricity	dollars	46,063,800
Petroleum	dollars	17,513,515
WRP chemicals	dollars	196,503
Nitrogen oxide	tons	176.6
Carbon monoxide	tons	30.7
Sulfur oxides	tons	18.4
Particulates	tons	6.1
Reactive organic gases	tons	1.5
Carbon dioxide	tons	230,319

1.4 SUMMARY

Of the 418.76 MGD of treated effluent produced by the Sanitation Districts, 155.67 MGD (37.2%) was treated to a suitable level for reuse, with 91.35 MGD (21.8%) actually being reused at 757 individual sites in 30 cities for numerous diverse applications (with more than half of the reuse being for groundwater replenishment). This level of reuse represented more than half of the recycled water available for reuse. 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 over 22% of the recycled water delivered during the fiscal year. Thirty-four new reuse sites were added during FY 13-14 and the amount of recycled water used decreased by 1.4% from the preceding fiscal year, due in part to the shutdown of the Leo Vander Lans Advanced Treatment Plant beginning in April 2014 for expansion. The use of 102,364 AF of locally produced recycled water essentially resulted in the conservation of the water supply needs of over 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 2,799,056 AF (911.7 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 6.30 million tons of carbon dioxide and 6,382 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 13-14 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, including the recently upgraded Lancaster and Palmdale WRPs, is presented in Appendix B.

TABLE 7
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
(PAGE 1 OF 14)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Water Replenishment District(WNWRP)	Aug 62	--	R	6.918	7,753
La Cañada-Flintridge Country Club (La Cañada)	Oct 62	105	L,P	0.079	88
Apollo Lakes Community Regional Park (Lancaster)	Jun 69	56	L,P	0.186	208
Water Replenishment District (SJCWRP)	Jun 71	--	R	39.243	43,974
Cal Poly, Pomona-Kellogg (Pomona)	Dec 73	500	AG,L,O,P,AF	0.775	870
Lanterman Hospital (Pomona)	Dec 73	100	AG	0	0
South Campus Drive Parkway (Pomona)	Dec 73	8	L	0.018	20
Route 57 and 10 Freeways (Pomona)	May 75	18	L	0.022	24
Bonelli Regional County Park (San Dimas)	Apr 77	789	L	0.834	937
California Country Club (Industry)	Jun 78	120	L,P	0.476	533
Ironwood 9 Golf Course (Cerritos)	Nov 78	25	L,P	0.116	130
Caruthers Park (Bellflower)	Nov 78	5	L	0.048	53
El Dorado Park West (Long Beach)	Aug 80	135	L	0.186	208
El Dorado Golf Course (Long Beach)	Aug 80	150	L	0.272	305
Suzanne Park (Walnut)	Oct 80	12	L	0.018	21
Route 71 and 10 Freeways (Pomona)	Apr 81	12	L	0.011	12
Piute Ponds (Lancaster)	May 81	400	E	4.289	4,806
Recreation Park (Long Beach)	Oct 82	26	L	0.062	69
Recreation Golf Course (Long Beach)	Oct 82	149	L	0.288	323
Whaley Park (Long Beach)	Jun 83	9	L	0.021	23
Industry Hills Recreation Area (Industry)	Aug 83	600	L,P	0.964	1,080
El Dorado Park East (Long Beach)	Jan 84	300	L	0.525	588
Nature Center (Long Beach)	Jan 84	60	L	0.072	81
605 Freeway at Wardlow (Long Beach)	Feb 84	50	L	0.025	28
Heartwell Park (Long Beach)	Feb 84	120	L	0.233	261
Skylinks Golf Course (Long Beach)	Apr 84	155	L,P	0.295	330
Douglas Park (Long Beach)	Apr 84	3	L	0.006	6
405 Freeway at Atherton (Long Beach)	May 84	5	L	0.001	1
DeMille Junior High School (Long Beach)	Jun 84	5	AF,L	0.044	50
Heartwell Golf Park (Long Beach)	Jun 84	30	L	0.070	78
Spadra Landfill landscape (Walnut)	Jul 84	53	L	0.333	373
Spadra Landfill dust control (Walnut)	Jul 84	--	I	0.0004	0.4
Veterans Memorial Stadium (Long Beach)	Jan 85	6	AF	0.023	26
Harrington Farms Pistachio Orchard (Palmdale)	Apr 85	23	AG	0.048	54
Recreation Park Bowling Green (Long Beach)	Aug 85	3	L	0.013	15
California State University, Long Beach	Dec 85	52	AF,L	0.173	194
Long Beach City College (Long Beach)	Feb 86	15	AF,L	0.067	75
Recreation 9-Hole Golf Course (Long Beach)	Mar 86	37	L	0.085	96
Blair Field (Long Beach)	Apr 86	5	AF	0.012	14
Woodlands Park (Long Beach)	Apr 86	7	L	0.015	17
Colorado Lagoon Park (Long Beach)	Apr 86	4	L	0.0004	0.4
Marina Vista Park (Long Beach)	Apr 86	30	L	0.034	38
Suzanne Middle School (Walnut)	May 86	4	AF,L	0.013	15
Walnut High School (Walnut)	May 86	15	AF,L	0.021	23
Vejar School (Walnut)	May 86	3	AF,L	0.011	12
Morris School (Walnut)	May 86	9	AF,L	0.009	11
Snow Creek Park (Walnut)	May 86	7	L	0.010	12
Snow Creek Landscape Maintenance Dist. (Walnut)	May 86	13.5	L	0.039	43
Lemon Creek Park (Walnut)	May 86	5	L	0.007	7
Friendship Park (West Covina)	May 86	6	L	0.007	8
Hollingworth School (West Covina)	May 86	3	AF,L	0.008	9
Lanesboro Park (West Covina)	May 86	2	L	0.006	6
Rincon Middle School (West Covina)	May 86	3	AF,L	0.016	18
Route 57 and 60 Freeways (Rowland Heights)	May 86	19.7	L	0.019	21

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 13-14 RECYCLED WATER USAGE
(PAGE 2 OF 14)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Rowland Heights Reg. Co. Park (Rowland Heights)	May 86	11	L	0.016	18
Rowland High School (Rowland Heights)	May 86	9	AF,L	0.017	19
Killian Elementary School (Rowland Heights)	May 86	3	AF,L	0.007	8
Walnut Elementary School (Walnut)	May 86	4	AF,L	0.003	4
WUSD Administrative Service Center (Walnut)	May 86	4	L	0.003	3
Walnut Ranch Park (Walnut)	Jun 86	26	L	0.019	22
Amar Road greenbelt (Walnut)	Jun 86	16	L	0.152	170
Diamond Bar Golf Course (Diamond Bar)	Jul 86	174	L,P	0.200	224
Walnut Ridge Landscape Maintenance Dist. (Walnut)	Mar 87	25.5	L	0.028	32
Morningside Park (Walnut)	Mar 87	4	L	0.006	7
Gateway Corporate Center (Diamond Bar)	Jun 87	45	L	0.055	61
Library/Civic Center (Cerritos)	Dec 87	4	L	0.017	19
Olympic Natatorium (Cerritos)	Dec 87	6	L	0.020	23
Whitney Learning Center (Cerritos)	Dec 87	10	AF,L	0.026	30
Gonsalves Elementary School (Cerritos)	Dec 87	5	AF,L	0.010	11
Wittman Elementary School (Cerritos)	Dec 87	5	AF,L	0.011	12
Gahr High School (Cerritos)	Dec 87	28	AF,L	0.055	62
Area Development Project No. 2 (Cerritos)	Jan 88	11.5	L,P	0.074	83
Medians/Parkways (Cerritos)	Jan 88	42.8	L	0.154	172
605 Freeway (Cerritos)	Jan 88	58.6	L	0.089	99
91 Freeway (Cerritos)	Jan 88	70	L	0.052	58
Frontier Park (Cerritos)	Jan 88	2.5	L	0.013	15
Carmenita Junior High School (Cerritos)	Jan 88	5	AF,L	0.018	21
Cerritos Elementary School (Cerritos)	Jan 88	6	AF,L	0.013	15
Stowers Elementary School (Cerritos)	Jan 88	6	AF,L	0.020	23
Kennedy Elementary School (Cerritos)	Jan 88	7	AF,L	0.016	18
City Park East (Cerritos)	Jan 88	18	L	0.049	55
Satellite Park (Cerritos)	Jan 88	2	L	0.008	9
Leal Elementary School (Cerritos)	Jan 88	6	AF,L	0.009	10
Cerritos High School (Cerritos)	Jan 88	20	AF,L	0.043	48
Elliott Elementary School (Cerritos)	Jan 88	7	AF,L	0.016	18
Carmenita Park (Cerritos)	Jan 88	4.5	L	0.016	18
Juarez Elementary School (Cerritos)	Jan 88	7	AF,L	0.025	29
ABC Adult School & Office (Cerritos)	Jan 88	3	L	0.014	16
Tracy Education Center (Cerritos)	Jan 88	6	AF,L	0.003	4
Liberty Park (Cerritos)	Jan 88	20	L	0.041	46
Gridley Park (Cerritos)	Jan 88	9	L	0.030	33
Jacob Park (Cerritos)	Jan 88	4.5	L	0.016	18
Heritage Park (Cerritos)	Feb 88	12	L	0.041	46
Bragg Elementary School (Cerritos)	Feb 88	7	AF,L	0.018	20
Haskell Junior High School (Cerritos)	Feb 88	18	AF,L	0.044	49
Pat Nixon Elementary School (Cerritos)	Feb 88	5	AF,L	0.013	14
Cabrillo Lane Elementary School (Cerritos)	Feb 88	9	AF,L	0.010	11
Sunshine Park (Cerritos)	Feb 88	3.5	L	0.012	13
Friendship Park (Cerritos)	Feb 88	4	L	0.013	15
Bettencourt Park (Cerritos)	Feb 88	2	L	0.007	8
Brookhaven Park (Cerritos)	Feb 88	2	L	0.007	8
Saddleback Park (Cerritos)	Feb 88	2	L	0.005	5
Westgate Park (Cerritos)	Feb 88	4	L	0.011	13
Rainbow Park (Cerritos)	Mar 88	2.5	L	0.005	6
Bellflower Christian School (Cerritos)	Mar 88	31.4	AF,L	0.052	58
Cerritos Community College (Cerritos)	Mar 88	55	AF,L	0.104	116
Cerritos Regional County Park (Cerritos)	Apr 88	59	L	0.168	189
Artesia Cemetery District (Cerritos)	Apr 88	10.9	L	0.028	32

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 13-14 RECYCLED WATER USAGE
(PAGE 3 OF 14)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Rosewood Park (Cerritos)	Apr 88	2.7	L	0.012	14
20659 E. Valley Blvd. (Walnut)	May 88	7	O	0	0
Lakewood 1st Presbyterian Church (Long Beach)	Sep 88	1	L	0.0001	0.1
Westhoff Elementary School (Walnut)	Sep 88	8	AF,L	0.006	7
Tree Farm (Palmdale)	Feb 89	28	O	0	0
Virginia Country Club (Long Beach)	Mar 89	135	L,P	0.146	163
Lakewood Golf Course (Long Beach)	Mar 89	128	L,P	0.380	425
Scherer Park (Long Beach)	Mar 89	24	L	0.033	37
Sports Complex (Cerritos)	Mar 89	25	AF,L	0.063	71
Sunnyside Memorial Park (Long Beach)	Apr 89	35	L	0.089	100
All Soul's Cemetery (Long Beach)	Apr 89	40	L	0.128	143
Cherry Avenue Park (Long Beach)	May 89	10	L	0.013	15
River (Rynerson) Park (Lakewood)	Aug 89	40	L	0.091	102
Monte Verde Park (Lakewood)	Aug 89	4	L	0.064	72
Mae Boyer Park (Lakewood)	Aug 89	8	L	0.037	41
Jose Del Valle Park(Lakewood)	Aug 89	12	L	0.038	43
Jose San Martin Park (Lakewood)	Aug 89	9.3	L	0.031	35
City Water Yard (Lakewood)	Aug 89	1	L	0.011	13
Woodruff Avenue greenbelt (Lakewood)	Aug 89	4.1	L	0.012	13
South Street greenbelt (Lakewood)	Aug 89	3.3	L	0.008	9
Mayfair Park (Lakewood)	Dec 89	18	L	0.049	55
Shoemaker On/Off Ramp - 91 Freeway (Cerritos)	Dec 89	4.6	L	0.014	16
Temple Avenue greenbelt (Walnut)	Jan 90	1	L	0.0001	0.1
Transpacific Development Co. (Cerritos)	Feb 90	6.9	L	0.014	15
Automated Data Processing (Cerritos)	Feb 90	0.7	L	0.006	6
Walnut Tech Business Center (Walnut)	Apr 90	1	L	0.002	2
Sheraton Hotel (Cerritos)	Mar 90	0.6	L	0.004	4
Cerritos Pontiac/GMC Truck (Cerritos)	May 90	0.5	L	0.001	1
Moothart Chrysler (Cerritos)	May 90	0.4	L	0.007	7
St. Joseph Parish School (Lakewood)	Aug 90	3.5	AF,L	0.014	16
Foster Elementary School (Lakewood)	Sep 90	6	AF,L	0.021	23
Windjammer Off-Ramp - 91 Freeway (Cerritos)	Sep 90	0.8	L	0.001	1
Browning Oldsmobile (Cerritos)	Sep 90	0.1	L	0.002	2
Civic Center Way and City Hall (Lakewood)	Nov 90	2.8	L	0.018	20
Los Coyotes Diagonal (Long Beach)	Mar 91	1	L	0.002	3
City Water Truck (Cerritos)	May 91	--	L	0	0
Private Haulers (Cerritos)	May 91	--	I	0	0
Parkside Condominiums (Cerritos)	May 91	1.8	L	0.006	7
Mayfair High School (Lakewood)	May 91	36.5	AF,L	0.052	58
Wilson High School (Long Beach)	Jun 91	5	AF,L	0.029	32
Concordia Church (Cerritos)	Jun 91	4	L	0.007	8
Church of the Nazarene (Cerritos)	Aug 91	1	L	0.005	5
B&B Stables (Cerritos)	Aug 91	18	I	0.006	6
Lemon Avenue greenbelt (Walnut)	Sep 91	4.3	L	0.006	7
Lindstrom Elementary School (Lakewood)	Sep 91	12	AF,L	0.017	19
Lakewood High School (Lakewood)	Sep 91	25	AF,L	0.039	44
Shadow Park Homeowner's Association (Cerritos)	Nov 91	6	L	0.022	25
South Coast AQMD Headquarters (Diamond Bar)	Nov 91	2	L	0.005	6
Long Beach Water Department office (Long Beach)	Jan 92	2	L	0.0004	0.5
Reservoir Park (Signal Hill)	Feb 92	2	L	0.009	10
Burroughs Elementary School (Signal Hill)	Feb 92	4	AF,L	0.004	4
Andy's Nursery (Bellflower)	Feb 92	9	O	0.053	59
Lake Center Park (Santa Fe Springs)	Mar 92	8	L	0.027	31
Lake Center School (Santa Fe Springs)	Mar 92	8	AF,L	0.023	26

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TABLE 7
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
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Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Clarkman Walkway (Santa Fe Springs)	Mar 92	0.1	L	0.0003	0.4
Towne Center Walkway (Santa Fe Springs)	Apr 92	0.1	L	0.0005	1
Lakeview Child Care (Santa Fe Springs)	May 92	0.2	L	0.001	1
Orr & Day Road medians (Santa Fe Springs)	May 92	0.1	L	0.0001	0.1
Hughes Middle School (Long Beach)	Apr 92	3	AF,L	0.013	14
405 Freeway at Walnut (Long Beach)	Apr 92	9	L	0.013	15
Area Development Project No. 6 (Cerritos)	Apr 92	9	L	0.059	66
Somerset Park (Long Beach)	May 92	3	L	0.002	2
Longfellow Elementary School (Long Beach)	May 92	1	AF,L	0.0002	0.2
Granada Park Homeowners Association (Cerritos)	May 92	3.8	L	0.013	14
Walnut Valley Water Dist. reservoir (Diamond Bar)	May 92	1	L	0.004	4
Florence Avenue medians (Santa Fe Springs)	Jun 92	3	L	0.007	8
Gauldin Elementary School (Downey)	Jun 92	8.4	AF,L	0.008	9
Rio San Gabriel School (Downey)	Jun 92	14.8	AF,L	0.027	30
Bellflower High School (Bellflower)	Jul 92	28.4	AF,L	0.076	85
Ernie Pyle Elementary School (Bellflower)	Aug 92	4.9	AF,L	0.013	15
Telegraph Road medians (Santa Fe Springs)	Aug 92	0.5	L	0.004	5
Lakeview Park (Santa Fe Springs)	Aug 92	6.7	L	0.018	20
Clark Estate (Santa Fe Springs)	Aug 92	4.3	L	0.007	8
Towne Center Green (Santa Fe Springs)	Aug 92	2.3	L	0.007	8
Pioneer Road medians (Santa Fe Springs)	Sep 92	0.4	L	0.035	39
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	5
Lewis School (Downey)	Nov 92	4.6	AF,L	0.010	11
Wilderness Park (Downey)	Nov 92	24	L	0.080	90
First Chinese Baptist Church (Walnut)	Dec 92	0.3	L	0.002	2
605 Freeway at Foster (Bellflower)	Jan 93	14	L	0.003	3
Promenade Walkway (Santa Fe Springs)	Jan 93	0.3	L	0.002	3
Rio San Gabriel Park (Downey)	Jan 93	6.4	L	0.038	42
East Middle School (Downey)	Jan 93	26	AF,L	0.032	36
Zinn Park (Bellflower)	Jan 93	1.7	L	0.013	14
Cerritos Post Office (Cerritos)	Feb 93	0.7	L	0.007	8
605/105 Interchange (Bellflower)	Feb 93	22	L	0	0
Hollywood Sports Center (Bellflower)	Feb 93	22.5	L	0.004	4
Santa Fe Springs High School (Santa Fe Springs)	Feb 93	14.5	AF,L	0.032	35
605/5 Freeway at Florence (Santa Fe Springs)	Feb 93	17	L	0.006	6
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	0.025	28
My Hoa Farm (Lakewood)	May 93	5	AG	0.014	16
105 Freeway at Bellflower (Downey)	May 93	17.9	L	0	0
Palms Park (Lakewood)	May 93	20	L	0.003	4
Crawford Park (Downey)	Jul 93	2.1	L	0.007	8
Humedo Nursery (Downey)	Aug 93	11	O	0.006	6
105 Freeway at Lakewood (Downey)	Sep 93	25	L	0.002	3
Shaw Industries Carpet Mill (Santa Fe Springs)	Sep 93	--	I	0.212	237
Palms Elementary School (Lakewood)	Sep 93	3.5	AF,L	0.013	15
Artesia High School (Lakewood)	Sep 93	20.9	AF,L	0.034	38
West Middle School (Downey)	Oct 93	19.5	AF,L	0.027	30
Circle Park (South Gate)	Oct 93	4	L	0.018	20
Burger King restaurant (Diamond Bar)	Oct 93	0.2	L	0	0
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	0.007	8
Hollydale Park (South Gate)	Nov 93	46	L	0.157	176

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TABLE 7
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
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Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Delta Dental (Cerritos)	Nov 93	1.8	L	0.004	4
Cal Poly LandLab (Pomona)	Nov 93	2.5	AG,L	0.016	18
Rodeo Ridge Estates (Walnut)	Dec 93	6.3	L	0.004	4
Robertson's Ready-Mix (Santa Fe Springs)	Dec 93	--	I	0.004	5
710/105 Interchange (Paramount)	Dec 93	18.5	L	0.0001	0.1
Downey/Contreras greenbelt (Paramount)	Dec 93	0.1	L	0.001	1
Compton Golf Course (Paramount)	Dec 93	13	L	0.026	29
Alondra Junior High School (Paramount)	Dec 93	14	AF,L	0.019	21
Mokler Elementary School (Paramount)	Dec 93	10	AF,L	0.012	13
Los Cerritos Elementary School (Paramount)	Dec 93	8	AF,L	0.011	12
Wirtz Elementary School (Paramount)	Dec 93	9	AF,L	0.012	14
Keppel Elementary School (Paramount)	Dec 93	4	AF,L	0.005	6
Billy Lee Nursery (Paramount)	Dec 93	2.5	O	0.009	10
Golden Springs Drive medians (Diamond Bar)	Jan 94	1.3	L	0.006	7
105 Freeway at Wright (Lynwood)	Jan 94	19.6	L	0.00004	0.05
710 Freeway at M.L. King (Lynwood)	Jan 94	15.5	L	0	0
710 Freeway at Rosecrans (Compton)	Jan 94	24.2	L	0.00002	0.02
Independence Park (Downey)	Feb 94	10.4	L	0.017	19
Paramount Park (Paramount)	Feb 94	9	L	0.025	28
Paramount High School (Paramount)	Feb 94	19	AF,L	0.033	37
Southern California Edison nursery (Cerritos)	Mar 94	3.5	O	0.006	6
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	0.011	13
Rio Hondo Golf Course (Downey)	Apr 94	92.4	L	0.250	280
Zimmerman Park (Norwalk)	Apr 94	9.5	L	0.019	21
Vista Verde Park (Norwalk)	Apr 94	6.5	L	0.020	22
Gerdes Park (Norwalk)	Apr 94	8.6	L	0.018	21
Clearwater Junior High School (Paramount)	Apr 94	4	AF,L	0.033	36
Vestar Development (Cerritos)	Jun 94	9.6	L	0.036	40
Steam Engine Park (Paramount)	Jun 94	0.6	L	0.002	2
5 Freeway at Shoemaker/Firestone (Norwalk)	Jul 94	0.8	L	0	0
Spane Park (Paramount)	Jul 94	5	L	0.011	13
Orange/Cortland Parkway (Paramount)	Jul 94	1.3	L	0.003	4
Carpenter School (Downey)	Aug 94	7.4	AF,L	0.013	15
Brookside Equestrian Center (Walnut)	Aug 94	13.6	L	0.009	10
Field, S/W corner Norwalk/Telegraph (S.F. Springs)	Aug 94	5.2	L	0.015	17
Washington Elementary School (Whittier)	Sep 94	5	AF,L	0.009	10
605 Freeway at Beverly (Whittier)	Sep 94	30	L	0.030	34
John Anson Ford Park (Bell Gardens)	Sep 94	45	L	0.060	65
Ramona Park (Norwalk)	Oct 94	4.8	L	0.014	15
Alondra median (Paramount)	Oct 94	0.6	L	0.014	15
Imperial/Wright Road medians (Lynwood)	Oct 94	0.2	L	0.0002	0.2
Walnut Valley Water District Office (Walnut)	Oct 94	0.2	L	0.001	1
Cattelus Development (Walnut)	Oct 94	18.9	L	0.012	13
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	0.004	4
Sorenson Elementary School (Whittier)	Oct 94	4	AF,L	0.010	11
Palm Park West (Whittier)	Nov 94	5	L	0.012	13
Metrolink Station (Industry)	Nov 94	0.6	L	0.003	3
Little Lake Park (Santa Fe Springs)	Dec 94	18	L	0.048	54
Sundance Condominiums (Cerritos)	Jan 95	9	L	0.036	40
Del Paso High School (Walnut)	Jan 95	3	AF,L	0.004	5
Dow Corning, 20832 Currier Road (Walnut)	Jan 95	0.1	L	0.0002	0.2

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 13-14 RECYCLED WATER USAGE
(PAGE 6 OF 14)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
John Anson Ford Golf Course (Bell Gardens)	Feb 95	13.6	L	0	0
Circuit City Headquarters, Currier/Lemon (Walnut)	Apr 95	1.1	L	0.008	8
Sysco Food Service, 20701 Currier Road (Walnut)	Apr 95	2.3	L	0.007	8
Tung Hsin Trading, 20420 E. Business Pkwy (Walnut)	Apr 95	0.8	L	0.003	3
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	2
S/W-S/E Corner Lemon/Business Parkway (Walnut)	Apr 95	0.2	L	0.005	5
Dura Freight Lines, 20275 Bus. Parkway (Walnut)	Apr 95	1.3	L	0.002	2
Coaster Co. of America, 20300 Bus. Parkway (Walnut)	Apr 95	0.7	L	0.002	3
Dura Freight Lines, 20405 Bus. Parkway (Walnut)	Apr 95	1	L	0.002	2
Dura Freight Lines, 20595 E. Business Pkwy (Walnut)	Apr 95	0.8	L	0.003	3
Dura Freight Lines, 20435-45 Business Pkwy (Walnut)	Apr 95	0.7	L	0.002	2
Orange Grove School (Whittier)	Apr 95	6.6	AF,L	0.012	14
South Middle School (Downey)	May 95	15.8	AF,L	0.020	22
Nuffer Elementary School (Norwalk)	Jun 95	10.4	AF,L	0.012	14
Lampton Middle School (Norwalk)	Jun 95	9.5	AF,L	0.011	12
THUMS (Long Beach)	Jun 95	8	I	1.018	1,141
820 Fairway Drive medians (Industry)	Jun 95	0.1	L	0.001	1
Spencer N Enterprises, Inc., 435 S. Lemon (Walnut)	Jun 95	0.5	L	0.001	2
General Electric, 19805 E Business Pkwy (Walnut)	Jun 95	1.1	L	0.004	5
Menlo Logistics, 20002 E. Business Pkwy (Walnut)	Jun 95	4	L	0.006	6
General Electric, 20005 E. Business Parkway (Walnut)	Jun 95	6.7	L	0.009	11
Hargitt Middle School (Norwalk)	Jul 95	9.5	AF,L	0.026	29
Norwalk Adult School (Norwalk)	Jul 95	17.2	AF,L	0.019	22
John Glenn High School (Norwalk)	Jul 95	38.8	AF,L	0.048	53
Ramona Elementary School (Norwalk)	Jul 95	6.8	AF,L	0.004	4
New River Elementary School (Norwalk)	Jul 95	10.3	AF,L	0.007	8
Morrison Elementary School (Norwalk)	Sep 95	7.7	AF,L	0.010	11
Katherine Edwards Middle School (Whittier)	Sep 95	19	AF,L	0.029	32
Longfellow Elementary School (Whittier)	Sep 95	4.5	AF,L	0.008	9
Walter Dexter Middle School (Whittier)	Sep 95	15.5	AF,L	0.012	14
D.D. Johnston Elementary School (Norwalk)	Sep 95	8.9	AF,L	0.012	14
Corvallis Middle School (Norwalk)	Sep 95	16.9	AF,L	0.017	19
Norwalk High School (Norwalk)	Sep 95	35.1	AF,L	0.043	48
Heritage Park (Santa Fe Springs)	Oct 95	9.2	L	0.011	13
Belloso Farm Nursery (Paramount)	Oct 95	2.5	O	0	0
Robertson's Ready-Mix (Paramount)	Nov 95	--	I	0.009	10
Cerritos Nursery (Cerritos)	Dec 95	3	O	0.004	4
Spadra Gas-to-Energy Plant (Walnut)	Dec 95	--	I	0.054	61
Founders Memorial Park (Whittier)	Jan 96	4	L	0.022	24
Los Nietos Park (Santa Fe Springs)	Jan 96	11.2	L	0.026	29
Bell Gardens Soccer Field (Bell Gardens)	Feb 96	2.6	AF	0.009	10
Jersey Ave. School/city athl. fields (Santa Fe Springs)	Mar 96	8	AF	0.009	11
Salt Lake Municipal Park (Huntington Park)	Apr 96	20.9	L	0.007	8
Sorenson Park (Whittier)	May 96	10.7	L	0.019	21
Sorenson Library (Whittier)	May 96	0.4	L	0	0
Encore Maintenance-Warmington Homes (Cerritos)	May 96	1.1	L	0.004	4
Bellflower Blvd. medians (Bellflower)	Jul 96	0.3	L	0.002	2
Alta Produce (Paramount)	Aug 96	4	AG	0.002	2
Artesia Off-Ramp - 91 Freeway (Cerritos)	Aug 96	3.3	L	0.005	5
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	0
Temple Park (Downey)	Oct 96	1	L	0.002	2
Woodruff Avenue medians (Bellflower)	Oct 96	0.8	L	0.005	5

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TABLE 7
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
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Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Lawrence Allen & Assoc., 20822 Currier Rd. (Walnut)	Oct 96	0.1	L	0.002	2
Fairway Business Cntr., 19700 Bus. Parkway (Walnut)	Nov 96	0.4	L	0.002	2
Joe Rodgers Park (Long Beach)	Nov 96	3	L	0.012	13
Ham Park (Lynwood)	Dec 96	10	L	0	0
Jauregui Nursery (Paramount)	Dec 96	2	O	0.003	3
Heritage Corporate Center (Santa Fe Springs)	Jan 97	29.9	L	0.027	31
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	0.0003	0.3
Rosecrans Avenue medians (Paramount)	Mar 97	0.2	L	0.006	7
Texaco/Somerset medians (Paramount)	Mar 97	0.2	L	0.001	2
McLane Mowers (Paramount)	Mar 97	0.6	L	0	0
ABC Nursery (Paramount)	Mar 97	16	O	0	0
L.A. County Vector Control Bldg. (Santa Fe Springs)	Mar 97	3.8	L	0.004	5
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	0.012	13
Jauregui Nursery (Long Beach)	Jul 97	5	O	0.039	43
McNab Avenue medians (Bellflower)	Jul 97	0.1	L	0.0003	0.3
Foster Road/Premier Ave. medians (Downey)	Aug 97	0.1	L	0.0004	0.5
Palm Growers Nursery (Downey)	Oct 97	7.3	O	0	0
Alondra Blvd medians @ SGR (Bellflower)	Oct 97	0.1	L	0.0004	0.4
Puente Hills Landfill irrigation (Industry)	Nov 97	320	L	1.001	1,131
Puente Hills Landfill dust control (Industry)	Nov 97	130	I	0.102	114
Puente Hills Gas-to-Energy Facility (Industry)	Nov 97	--	I	0.604	677
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	0.007	8
Rose Hills Memorial Park – upper area (Whittier)	Jun 98	298	L	0.568	636
El Dorado Lakes Condominiums (Long Beach)	Aug 98	11	L	0.030	33
Bloomfield Associates, 17871 Park Plaza Dr. (Cerritos)	Sep 98	0.5	L	0.002	2
Maruichi American building (Santa Fe Springs)	Oct 98	0.4	L	0.001	1
Diamond Crest Homeowners Assn. (Diamond Bar)	Oct 98	14	L	0.020	23
Norm Ashley Park (Walnut)	Nov 98	0.2	L	0.001	1
Play Hut, 368 Cheryl Lane (Walnut)	Nov 98	0.8	L	0.003	3
Waterfall Estates (Rowland Heights)	Dec 98	1.2	L	0.003	4
WalMart (Long Beach)	Dec 98	3	L	0.001	1
Norwalk Golf Course (Norwalk)	Jan 99	8	L	0.012	13
Vestar Development (Long Beach)	Feb 99	8	L	0.033	37
Soco-Lynch Corp. building (Santa Fe Springs)	Feb 99	1	L	0.002	2
183rd Street On-Ramp - 91 Freeway (Cerritos)	Feb 99	0.6	L	0.001	2
MC&C building (Santa Fe Springs)	Mar 99	0.7	L	0.010	12
Lakewood Blvd. medians (Paramount)	Mar 99	0.2	L	0.002	2
Progress Park (Paramount)	Mar 99	6.2	L	0.014	16
Garfield Avenue medians (Paramount)	Apr 99	0.1	L	0.003	3
Calvary Chapel (Diamond Bar)	Apr 99	1	L	0.019	22
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	0.035	39
AT&T building, 12900 Park Plaza Drive (Cerritos)	Aug 99	0.9	L	0.012	13
Orange Avenue medians (Paramount)	Aug 99	0.1	L	0.004	4
Metropolitan State Hospital (Norwalk)	Sep 99	80	L	0	0
Moffit School (Norwalk)	Sep 99	1.6	AF,L	0.010	12

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TABLE 7
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
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Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
L.A. Fitness Inter., 20801 Golden Springs (Industry)	Sep 99	1.2	L	0.003	3
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	0.002	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	0.018	20
Lemon Avenue medians (Industry)	Dec 99	0.1	L	0.0004	0.4
Prudential Insurance Co., 21558 Ferraro Pkwy (Walnut)	Jan 00	3.5	L	0.008	9
Foster Road Greenbelt (Norwalk)	Mar 00	3.3	L	0.008	9
McDonald's Restaurant (Diamond Bar)	Mar 00	0.1	L	0.001	1
San Luis Street @ flood channel (Paramount)	Apr 00	3	L	0.001	1
J&L Footwear, 250 Benton Court (Industry)	Jul 00	0.6	L	0.003	3
Jefferson School (Paramount)	Jul 00	0.5	AF,L	0.003	3
Columbus High School (Downey)	Aug 00	25	AF,L	0.018	20
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	5
Lee Wang LLC, 21901 Ferraro Parkway (Industry)	Nov 00	2	L	0.006	7
Sun Yin USA, 280 Maclin Court (Industry)	Nov 00	0.8	L	0.001	1
SL Investment Group LLC, 218 Maclin Ct. (Industry)	Nov 00	1.5	L	0.004	5
Morrow Meadows, 231 Benton Court (Industry)	Apr 01	0.9	L	0.003	4
Golden Springs Business Park (Santa Fe Springs)	Apr 01	31.4	L	0.156	175
The Cross Schools of Education (Walnut)	May 01	0.6	AF,L	0.001	1
Bellflower Storage (Bellflower)	Jun 01	3	L	0.001	2
Railroad Beautification (Paramount)	Jul 01	0.5	L	0.001	2
Rio Hondo Channel (Bell Gardens)	Jul 01	0.3	L	0.003	4
Bank of the West (Rowland Heights)	Sep 01	0.1	L	0.0002	0.3
Gym/Teen Center (Walnut)	Sep 01	0.6	L	0.002	2
CDM building (Santa Fe Springs)	Oct 01	0.1	L	0.002	3
Laskey-Weil building, 13101 Moore Street (Cerritos)	Oct 01	0.4	L	0.005	5
Willow Street medians (Long Beach)	Dec 01	2.4	L	0.006	6
Yellow Box Corp., 19835 Walnut Drive (Walnut)	Dec 01	0.3	L	0.0005	1
Harvard Estates (Rowland Heights)	Dec 01	2	L	0.003	4
L.A. County Recorder's Office (Norwalk)	Jan 02	2.7	L	0.010	11
Tays Cool Fuel (Paramount)	Feb 02	0.2	L	0.002	2
Walnut Nazarene Church (Walnut)	Feb 02	0.8	L	0.0004	0.5
Antelope Valley Farms (Palmdale)	Mar 02	2,034	AG	7.402	8,294
L.A. River landscaping (South Gate)	Mar 02	2.5	L	0.002	2
Majestic Mgmt., 168-188 Brea Canyon Road (Walnut)	Apr 02	0.6	L	0.002	2
Synnex, 108-118 Brea Canyon Road (Walnut)	Apr 02	0.7	L	0.002	3
Port Logistics, 108-288 Mayo Drive (Walnut)	Apr 02	0.1	L	0.005	6
Holiday Inn Express (Walnut)	May 02	0.4	L	0.003	3
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 (Downey)	Jul 02	3.4	L	0.040	45
River Ridge Golf Course (Pico Rivera)	Jul 02	21.3	L	0.036	40
Long Beach Water Dept. Impoundment (Long Beach)	Jul 02	--	I	0.002	2
Everbright Management, 1163 Fairway Dr. (Industry)	Sep 02	0.6	L	0.002	3
Everbright Management, 1169 Fairway Dr. (Industry)	Sep 02	0.2	L	0.001	1
Kelly Paper, 228 Brea Canyon Road (Walnut)	Sep 02	1.2	L	0.0005	1
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	0.002	2

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TABLE 7
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
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Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Latter Days Saints Church (Walnut)	Oct 02	0.9	L	0.003	4
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	0.003	3
Simon Trucking (Santa Fe Springs)	Nov 02	0.9	L	0.001	1
Foster/Coldbrook medians (Bellflower)	Nov 02	0.1	L	0.0003	0.3
L.A. County Library (Norwalk)	Nov 02	0.9	L	0.003	4
Metro State/Wheelabrator (Norwalk)	Jan 03	--	I	0.285	319
Alamitos Seawater Intrusion Barrier (Long Beach)	Feb 03	--	R	0.799	896
Boeing (Long Beach)	Mar 03	52	L	0.030	34
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	0.025	28
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	3
Tournament Players Club at Valencia	Aug 03	120	L	0.240	269
26840-27236 The Old Road medians (Santa Clarita)	Aug 03	5.8	L	0.034	38
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	0.004	5
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	0.002	2
San Malone Enterprises, 19865 Harrison (Industry)	Aug 03	0.3	L	0.001	1
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	0.006	7
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	0.005	6
NP 21301 Ferraro Pkwy., 21301 Ferraro (Industry)	Sep 03	0.8	L	0.004	4
568 TriNet Court (Walnut)	Oct 03	0.3	L	0.0003	0.4
Steve Horn Way/Bellflower medians (Downey)	Nov 03	0.3	L	0.014	16
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 Road (Walnut)	Dec 03	2.6	L	0.006	7
Young Hoon Cho, 1709 Nogales St. (Rowland Heights)	Mar 04	0.1	L	0.0002	0.2
Shell Station, 21103 Golden Springs Dr. (Diamond Bar)	Mar 04	0.1	L	0.0002	0.3
Ferraro/Grand East ramp (Industry)	Apr 04	3.8	L	0.007	8
Hing Wa Lee Plaza, 1569 Fairway Dr. (Walnut)	May 04	0.1	L	0.0004	0.5
Tucker Elementary School (Long Beach)	May 04	3	AF, L	0.007	7
Southcoast Cabinet, 20625 Lycoming St. (Walnut)	Jun 04	0.3	L	0.001	1
APL Logistics, 408 Brea Canyon Road (Walnut)	Jun 04	2.1	L	0.005	6
Alamitos Hill Reservoir landscaping (Long Beach)	Jul 04	8.6	L	0.005	6
Adnoff Family Trust, 20801 Currier Road (Walnut)	Jul 04	0.1	L	0.001	1
Sentous Valley LLC, 2889 Valley Blvd. (Walnut)	Aug 04	0.1	L	0.0003	0.3
Pro Growers Nursery (Norwalk)	Sep 04	11.3	O	0.053	59
Kaiser Administration building (Downey)	Oct 04	2.5	L	0.005	6
Downey Studios (Downey)	Oct 04	1	L	0	0
Community Day School (Walnut)	Nov 04	0.1	AF,L	0.0002	0.2
Majestic Mgmt., Bldg. 25 on Mayo Drive (Walnut)	Jan 05	0.1	L	0.001	1
Gateway Pointe (Whittier)	Jan 05	8	L	0.023	26
Puente Hills Materials Recovery Facility (Industry)	Feb 05	2.4	L	0.022	24
Sy Develop. condos, 20118-20138 Colima (Walnut)	Jun 05	0.1	L	0.0001	0.1
Dills Park (Paramount)	Jul 05	12.5	L	0.031	34

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TABLE 7
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
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Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
N/E corner Cheryl Lane/Baker Parkway (Industry)	Aug 05	3.3	L	0.014	15
Jakk's Pacific, Inc. 21733-21749 Baker (Industry)	Aug 05	1.2	L	0.004	5
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	0.790	885
Phoenix Private Schools (Rowland Heights)	Dec 05	0.1	AF,L	0	0
The Home Depot, 21535-21651 Baker Pkwy. (Industry)	Jan 06	2.8	L	0.009	10
Industry East Land LLC, 21415 Baker Pkwy. (Industry)	Jan 06	2.3	L	0.006	6
Stuart and Gray Road medians (Downey)	Dec 05	0.4	L	0.008	8
Woodruff and Maple medians (Bellflower)	Mar 06	0.1	L	0.0002	0.3
Charles Hailong Cui, 350 Cheryl Lane (Walnut)	Apr 06	0.7	L	0.006	6
LA Sanchez Nursery (Industry)	Apr 06	5	O	0.009	10
Sculpture Garden (Santa Fe Springs)	May 06	0.6	L	0	0
Fairway Drive median@ Brea Canyon (Walnut)	Jun 06	0.3	L	0.001	1
Grand Avenue Crossing (Industry)	Jul 06	18.5	L	0.038	42
22002 Valley Blvd. (Industry)	Jul 06	1.6	L	0.003	4
Foster Road medians (Santa Fe Springs)	Jul 06	1	L	0.014	16
Rose Hills Memorial Park – lower area (Whittier)	Aug 06	275	L	0.649	728
Christian Chapel of Walnut Valley (Walnut)	Aug 06	2.2	L	0.007	8
Target Store T-2179, 747 Grand Ave. (Walnut)	Sep 06	3.9	L	0.009	11
Whittier Narrows Recreation Area (South El Monte)	Sep 06	568	L	0.813	913
Leg Avenue, 19601 E. Walnut Drive (Walnut)	Oct 06	0.5	L	0.004	4
LandRover (Cerritos)	Dec. 06	0.3	L	0.005	6
Harold M. Pitman Co., 21908-21958 Baker (Industry)	Jan 07	0.8	L	0.002	2
Eastern Agricultural Site (Lancaster)	Feb 07	1,955	AG	5.405	6,057
Williams-Sonoma, 21508-21662 Baker (Industry)	Apr 07	4.8	L	0.011	13
FedEx Ground, 200 Old Ranch Road (Walnut)	May 07	28	L	0.011	13
Currier Road Devel. Inc., 20819 Currier Road (Walnut)	May 07	0.3	L	0.001	1
Bluff Park (Long Beach)	Jul 07	25.8	L	0.009	10
Stearns Park (Long Beach)	Jul 07	21	L	0.030	34
Bixby Park (Long Beach)	Jul 07	12.5	L	0.009	10
South El Monte High School (South El Monte)	Aug 07	16.1	AF, L	0.069	78
Williams-Sonoma, 21700 Baker Parkway (Industry)	Aug 07	2	L	0.004	4
Douglas Park development (Long Beach)	Nov 07	2.1	L	0.054	60
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	3
Space Learning Center (Downey)	Apr 08	10.5	L	0	0
Surgical Center, Carmenita & 166th (Cerritos)	May 08	0.1	L	0.0004	0.5
UPS Parking Structure, 13150 Moore St. (Cerritos)	May 08	0.5	L	0.002	2
Grand Avenue/Baker Parkway medians (Industry)	May 08	6.7	L	0.012	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	6
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	0.0002	0.2
Golden Springs Plaza 20657 Golden Sprgs (Dia. Bar)	Aug 08	0.4	L	0.001	1
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	0.002	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	0.002	2
CFT Development, Golden Springs Dr. (Diamond Bar)	Oct 08	0.01	L	0.001	1

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TABLE 7
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
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Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Mora Drive medians (Santa Fe Springs)	Oct 08	0.1	L	0.007	8
Jenny Hsieh, 20125 Valley Blvd. (Walnut)	Nov 08	0.03	L	0.0001	0.2
UPS Main Building, 13233 Moore St. (Cerritos)	Nov 08	4.4	L	0.016	18
Fountain Walk Housing, 18310 Carmenita (Cerritos)	Nov 08	0.1	L	0.0003	0.3
Public Works Dept. sewer flushing (Lancaster)	Jan 09	--	I	0.001	1
Public Works Dept. street sweeping (Lancaster)	Feb 09	--	I	0.0003	0.4
ASCIP Building, 16550 Bloomfield Ave. (Cerritos)	Feb 09	0.1	L	0.0003	0.4
Tincher Elementary School (Long Beach)	Feb 09	1.5	AF, L	0.003	3
Firestone Blvd. medians (Downey)	Feb 09	0.1	L	0.001	1
Citibank, 8764 Firestone Blvd. (Downey)	Feb 09	0.1	L	0.001	1
Brea Canyon Rd./Currier Road median (Walnut)	Feb 09	2	L	0.008	9
Cardinal Capital Partners, Currier/Lemon (Walnut)	Mar 09	2.5	L	0	0
Family Property Holdings, 20888 Amar Road (Walnut)	May 09	0.04	L	0.001	1
KW Global Inc., 293 Brea Canyon Drive (Walnut)	May 09	0.3	L	0.001	1
Steve Horn Parkway medians @ Kaiser (Downey)	May 09	1.4	L	0.058	65
Walgreens/Big Lots, 9018 Firestone Blvd. (Downey)	May 09	0.4	L	0.003	3
Lancaster University Center (Lancaster)	May 09	2	L	0	0
12800 Center Court (Cerritos)	Jul 09	0.4	L	0.001	2
Pacific Alloy Casting (South Gate)	Jul 09	--	I	0.018	20
Sunshine Park (L.A. County)	Jul 09 (May 86)	4	L	0.014	16
Rowland Elementary School (Rowland Heights)	Jul 09 (May 86)	3	AF,L	0.009	10
Southland Schools (Rowland Heights)	Jul 09 (May 86)	4	AF,L	0.004	4
Farjardo Park (Rowland Heights)	Jul 09 (May 86)	4	L	0.010	11
Nogales High School (L.A. County)	Jul 09 (Jun 86)	11	AF,L	0.033	37
Queen of Heaven Cemetery (Rowland Heights)	Jul 09 (Jun 86)	35	L	0.072	81
Schabarum Regional County Park (L.A. Co.)	Jul 09 (Sep 86)	233	L	0.115	129
Pepperbrook Park (Hacienda Heights)	Jul 09	4.4	L	0.010	11
Countrywood Park (Hacienda Heights)	Jul 09	5.4	L	0.012	13
Rowland Heights Golf Center (Rowland Heights)	Jul 09	8	L	0.014	15
Medians at 755 Nogales (Industry)	Jul 09	0.1	L	0.001	1
Nogales Med. Plaza, 4115-1/2 Nogales (West Covina)	Jul 09	0.1	L	0.006	7
Medians at 2654-1/2 Valley Blvd. (West Covina)	Jul 09	0.2	L	0.0003	0.4
Bu Sha Temple, 4111 Nogales St. (West Covina)	Jul 09	0.5	L	0.001	1
GMP Products, 788 Phillips (Industry)	Jul 09	0.1	L	0.003	3
JJ Plaza, 18253 Colima Road (Rowland Heights)	Jul 09	0.1	L	0.001	1
New World RTCI-LP, 18958 Daisetta (Rowland Hts.)	Jul 09	0.1	L	0.0001	0.1
Battery Technology, 16651 Johnson Dr. (Industry)	Jul 09	0.1	L	0.0001	0.1
Super Max Corp., 16685 Johnson Dr. (Industry)	Jul 09	0.1	L	0.001	1
Ancillary Provider 16664 Johnson Dr. (Industry)	Jul 09	0.1	L	0.001	1
Ancillary Provider 16666 Johnson Dr. (Industry)	Jul 09	0.2	L	0.001	1
Pan American, 16610 Gale Ave. (Industry)	Jul 09	0.2	L	0.001	1
Blue Pacific, 1354 Marion Ct. (Industry)	Jul 09	0.2	L	0.002	2
Romano's Macaroni Grill, 17603 Colima (Row. Hts.)	Jul 09	0.1	L	0.004	5
Acosta Growers, 16412 Wedgeworth Dr. (Industry)	Jul 09	5	O	0	0
Wedgeworth Elementary School (Hacienda Heights)	Aug 09	2.5	AF,L	0.005	5
Wilson High School (Hacienda Heights)	Aug 09	18.3	AF,L	0.036	40
Light of America, Inc., 20722 Currier Road (Walnut)	Sep 09	0.1	L	0.0001	0.1
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	0.016	17
Jade Fashion, 1350 Bixby Drive (Industry)	Sep 09	0.1	L	0.001	1
Sunshine Growers, 16411 Wedgeworth Dr. (Industry)	Sep 09	4	O	0.007	8
Robertson's Ready-Mix (Pomona)	Oct 09	--	I	0.008	9
MTA Bike Trail (Bellflower)	Nov 09	0.1	L	0.009	10
Whittier Narrows Golf Course (South El Monte)	Dec 09	260	L	0.522	586

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TABLE 7
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
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Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Seibon International, 1215 Bixby Drive (Industry)	Dec 09	0.1	L	0.001	2
Laido International, 16710-12 Johnson Dr. (Industry)	Dec 09	0.1	L	0.001	1
Bolt Products, 16725 Johnson Drive (Industry)	Dec 09	0.1	L	0.001	1
Ily Enterprise, 783 Phillips (Industry)	Jan 10	0.1	L	0.002	2
Superior Profiles, 1325 Bixby Drive (Industry)	Jan 10	0.2	L	0.001	1
60 Freeway, Countrywood & Fullerton (Industry)	Jan 10	5	L	0.005	6
Camacho Strawberries (Industry)	Jan 10	3	O	0	0
Harmoni International Spice, 881 Azusa (Industry)	Jan 10	0.1	L	0.001	1
East Group Prop., 855 Anaheim-Puente (Industry)	Mar 10	0.6	L	0.003	4
So. Cal. Air Conditioning, 16950 Chestnut (Industry)	Mar 10	2	L	0.002	2
USACD, 17101 Chestnut (Industry)	Mar 10	0.3	L	0.001	2
Azusa Blvd. medians (Industry)	Mar 10	0.2	L	0.0005	1
Acosta Growers, 17101 Chestnut (Industry)	Mar 10	2.4	O	0	0
Paramount Blvd. medians (Paramount)	Mar 10		L	0.006	6
L.A. Co. ISD bldg., 16610 Chestnut (Industry)	Apr 10	0.5	L	0.002	2
Azusa Property Co., 885 Azusa Blvd. (Industry)	Apr 10	0.2	L	0.001	2
Golden West Footwear, 16750 Chestnut (Industry)	Apr 10	0.3	L	0.001	2
Teledyne Instruments, 16830 Chestnut (Industry)	Apr 10	0.4	L	0.003	3
Medians, 18927 Daisetta St. (Rowland Heights)	Apr 10	0.2	L	0.0004	0.4
Colima Road medians (L.A. County)	Apr 10	0.1	L	0.001	1
Medians, 1442 Fullerton Road (Industry)	Apr 10	0.3	L	0.0001	0.1
Teledyne Picco, 16800 Chestnut (Industry)	May 10	0.4	L	0.001	1
Melody Tsai Nursery, 18002 Colima (Rowland Hts.)	May 10	1.3	O	0.001	1
East Group Prop., 16700 Chestnut (Industry)	Jun 10	0.6	L	0.003	3
Deyce USA, 883 Azusa Blvd. (Industry)	Jun 10	0.1	L	0.001	1
New Age Kaleidoscope, 7 Colima Road (Industry)	Jun 10	0.6	L	0.004	5
Min Maw Intl. Inc., 18350 San Jose Ave. (Industry)	Jun 10	0.7	L	0.004	4
Hot Topic, 18305 San Jose Ave. (Industry)	Jul 10	0.6	L	0.005	6
FedEx, 1081 Fullerton Road (Industry)	Jul 10	0.6	L	0.004	5
Long Beach DPW sewer flushing (Long Beach)	Aug 10	--	I	0.003	4
Long Beach DPW street sweeping (Long Beach)	Aug 10	--	I	0.0004	0.5
Los Amigos Golf Course (L.A. County)	Aug 10	110	L	0.228	255
Public Works Dept. dust control (Lancaster)	Sep 10	--	I	0	0
Donald Miller, 19803 Valley Blvd. (Walnut)	Sep 10	0.1	L	0.0002	0.2
Port Logistics Group, 18215 Rowland St. (Industry)	Sep 10	0.6	L	0.004	4
New Age Kaleidoscope, 5 Stoner Creek (Industry)	Oct 10	1.4	L	0.009	10
Perrin Manufacturing, 1020 Bixby Drive (Industry)	Oct 10	0.1	L	0.001	1
Centro Watt Operating, 17518A Colima Rd. (Industry)	Oct 10	0.4	L	0.003	3
Centro Watt Operating, 17414 Colima Rd. (Industry)	Oct 10	0.5	L	0.003	4
717 Nogales LLC, 717 Nogales St. (Industry)	Oct 10	0.5	L	0.002	3
The Old Road/Magic Mtn. Pkwy medians (Sta. Clarita)	Nov 10	2.8	L	0.016	18
Walgreens, 18308 Colima Road (Industry)	Dec 10	0.1	L	0.001	1
RWD Office, 3021 S. Fullerton Road (Industry)	Dec 10	0.3	L	0.001	1
Bell Memorial Church, 1747 Nogales (Rowland Hts.)	Dec 10	0.3	L	0.001	1
Chugh Firm, 15925 Carmenita Road (Cerritos)	Jan 11	0.2	L	0.002	2
Chevron, 17255 Bloomfield Ave. (Cerritos)	Mar 11	0.1	L	0.001	1
Atlantic Ave. medians (South Gate)	Mar 11	16.3	L	0.006	7
Pathfinder Park (Rowland Heights)	May 11	29	L	0.031	35
USGVMWD site, 401 Nogales St. (Industry)	May 11	0.5	L	0.001	2
Quest Nutrition, 18551 Arenth Ave. (Industry)	May 11	0.7	L	0.004	4
717 Nogales LLC, 18961 Arenth Ave. (Industry)	May 11	0.5	L	0.003	3
Kimco Realty, 17100 Colima Road (Industry)	May 11	3	L	0.010	11
Acme Trading Group, 18501 Arenth Ave. (Industry)	May 11	0.9	L	0.006	7
Hot Topic, 18501 San Jose Ave. (Industry)	May 11	0.6	L	0.002	3

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TABLE 7
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
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Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
BMS Motorsports, Inc., 18701 Arenth Ave. (Industry)	May 11	0.4	L	0.002	3
YHS Trading, 755 Epperson Dr. (Industry)	Jul 11	0.1	L	0.002	2
TriVantage LLC, 745 Epperson Dr. (Industry)	Jul 11	0.1	L	0.002	3
Siegfried & Parsifal Inc., 18689 Arenth Ave. (Industry)	Aug 11	0.4	L	0.002	3
HT Window Fashions, 770 Epperson Dr. (Industry)	Aug 11	0.1	L	0.002	2
HT Development, 780 Epperson Dr. (Industry)	Aug 11	0.1	L	0.003	4
HD Technology, 738 Epperson Dr. (Industry)	Aug 11	0.2	L	0.001	2
Walnut Creek Energy Park, 911 Bixby Dr. (Industry)	Aug 11	--	I	0.180	202
Sanchez Elementary/Temple Middle (Rosemead)	Aug 11	12.8	AF, L	0.006	7
Loma Elementary School (South El Monte)	Aug 11	1.9	AF, L	0.004	4
Jess Gonzales Sports Park (Rosemead)	Oct 11	4	L	0.012	14
Southern California Edison offices (Rosemead)	Oct 11	53	L	0.066	74
Eldridge Rice Elementary School (Rosemead)	Oct 11	8.3	AF, L	0.013	15
Guardian Life Insurance, 710 Epperson Dr. (Industry)	Sep 11	0.2	L	0.004	4
Valor Communication, 18071 Arenth Ave. (Industry)	Sep 11	0.1	L	0.004	4
Rubbercraft, 3701 Conant St. (Long Beach)	Sep 11	0.9	L	0.004	4
Millikin High School (Long Beach)	Oct 11	12	AF, L	0.032	35
K-1 Printing, 17989 Arenth Ave. (Industry)	Oct 11	0.2	L	0.001	1
K-1 Printing, 17979 Arenth Ave. (Industry)	Oct 11	0.2	L	0.001	1
Private Label PC Inc., 748 Epperson Dr. (Industry)	Nov 11	0.2	L	0.001	1
Penske Truck Leasing, 18305 Arenth Ave. (Industry)	Nov 11	0.6	L	0.002	3
Schurr High School (Montebello)	Nov 11	11	AF,L	0.029	32
Commercial Cooling, 17855 Arenth Ave. (Industry)	Dec 11	0.4	L	0.001	1
Forever Link, 18738 San Jose Ave. (Industry)	Dec 11	0.4	L	0.003	3
Majestic Realty, 179 S. Grand Ave. (Walnut)	Dec 11	2.5	L	0.005	5
Garvey Ave. medians (Rosemead)	Dec 11	0.1	L	0.003	3
Walnut Grove Ave. medians (Rosemead)	Dec 11	0.1	L	0.002	2
Rush St. medians (South El Monte)	Dec 11	0.1	L	0.001	1
Sunshine Nursery, 8448 Dorothy St. (Rosemead)	Dec 11	4.6	L	0.005	5
WalMart, 1827 Walnut Grove Ave. (Rosemead)	Dec 11	17.7	L	0.013	15
Panda Restaurant, 1683 Walnut Grove Ave. (Rosemead)	Dec 11	8.9	L	0.015	17
Willard Elementary School (Rosemead)	Jan 12	6	AF, L	0.003	3
Brook Furniture, 18960 San Jose Ave. (Industry)	Jan 12	0.4	L	0.001	1
Rio Hondo Park (Pico Rivera)	Jan 12	8	L	0.040	44
Beverly Blvd. medians (Pico Rivera)	Jan 12	1	L	0.002	2
University of the West, 1409 Walnut Grove (Rosemead)	Feb 12	0.4	L	0.004	4
LD Products, 3700 Cover Street (Long Beach)	Feb 12	0.7	L	0.002	2
LD Products, 3700 Cover Street (Long Beach)	Feb 12	--	I	0.001	1
Hot Topic, 18385 San Jose Ave. (Industry)	Feb 12	0.8	L	0.005	5
Twin Tiger Footwear, 18901 Railroad St. (Industry)	Feb 12	0.4	L	0.001	2
CWCI Insulation, 18825 Railroad St. (Industry)	Feb 12	0.2	L	0.001	1
Ko Amex, 18965 San Jose Ave. (Industry)	Feb 12	0.5	L	0.002	2
Ferguson Fire, 18825 San Jose Ave. (Industry)	Feb 12	0.3	L	0.002	2
MA Labs Inc., 18755 San Jose Ave. (Industry)	Feb 12	0.4	L	0.002	3
Majestic Management, 18691 San Jose Ave. (Industry)	Mar 12	0.3	L	0.003	3
Majestic Management, 18601 San Jose Ave. (Industry)	Mar 12	0.6	L	0.004	4
Hot Topic, 18501 San Jose Ave. (Industry)	Mar 12	0.6	L	0.002	3
Extra Express, 18591 San Jose Ave. (Industry)	Mar 12	0.6	L	0.003	4
Shoe Magnate Inc., 18560 San Jose Ave. (Industry)	Mar 12	0.4	L	0.001	2
Pinky Footwear Shoes, 18600 San Jose Ave. (Industry)	Mar 12	0.8	L	0.004	4
Zapopan Park (Rosemead)	Apr 12	7	L	0.014	15
Garvey Blvd. medians (Rosemead)	Apr 12	0.2	L	0.0003	0.4
WVWD Parker Canyon Reservoir (Walnut)	May 12	3.5	L	0.007	8
La Merced Elementary School (Montebello)	Jun 12	10	AF,L	0.027	30

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 13-14 RECYCLED WATER USAGE
(PAGE 14 OF 14)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Montebello Gardens Elementary (Pico Rivera)	Jun 12	1	AF,L	0.00001	0.01
Home Depot, 2320 Azusa Ave. (West Covina)	Jul 12	0.2	L	0.001	1
The Heights Shopping Center (West Covina)	Jul 12	12.5	L	0.029	32
Nogales Ave. medians (West Covina)	Jul 12	0.6	L	0.002	3
Azusa Ave. medians (West Covina)	Jul 12	3.1	L	0.009	10
Amar Road medians (West Covina)	Jul 12	2.1	L	0.004	5
BKK Landfill (West Covina)	Jul 12	220	L	0.140	157
South Hills Country Club (West Covina)	Aug 12	100	L	0.285	319
Medians, 2357 Fullerton Road (L.A. County)	Aug 12	0.4	L	0.001	1
McDonalds, 2623 Valley Blvd. (Industry)	Sep 12	0.2	L	0.001	1
Whitewave Foods, 18275 Arenth Ave. (Industry)	Oct 12	2.6	L	0.010	12
Big League Dreams (West Covina)	Oct 12	21	AF,L	0.050	56
CIMIS Weather Station (Palmdale)	Oct 12	1	L	0.003	3
McAdam Park (Palmdale)	Oct 12	15	L	0.071	79
Tree Barriers (Palmdale)	Jan 13	4	AG	0.042	47
Pearl of the East, 18888 Labin Ct. (Industry)	Feb 13	0.5	L	0.003	3
Walnut Creek Energy Park, 911 Bixby Dr. (Industry)	Apr 13	0.3	L	0.002	2
J.M. Farming (Whittier)	Apr 13	107	AG	0.064	72
Bloomfield Plaza, 12560 Artesia Blvd. (Cerritos)	May 13	0.1	L	0.001	1
Atherton St. medians (Long Beach)	Jun 13	0.5	L	0.003	3
St. Lorenzo Church, 747 Meadow Pass Road (Walnut)	Aug 13	0.3	L	0.017	19
Cortez Elementary School (West Covina)	Aug 13	6.2	AF,L	0.015	17
Cameron Elementary School (West Covina)	Aug 13	3.9	AF,L	0.010	12
Vine Elementary School (West Covina)	Aug 13	3.8	AF,L	0.011	13
Lemon Valley LLC, 20373 Valley Blvd. (Walnut)	Sep 13	0.1	L	0.001	1
Foothill Transit, 500 Brea Canyon Road (Walnut)	Sep 13	0.2	L	0.001	2
Air Products & Chemicals (Santa Fe Springs)	Nov 13	--	I	0.188	210
Countrywood Park I, (Rowland Heights)	Nov 13	17	L	0.007	7
Countrywood Park II, (Rowland Heights)	Nov 13	15	L	0.005	5
Shadow Oak Paseo A (West Covina)	Jan 14	8.1	L	0.011	12
Shadow Oak Paseo B (West Covina)	Jan 14	6.9	L	0.007	8
Shadow Oak Paseo C (West Covina)	Jan 14	1.6	L	0.002	2
Shadow Oak Paseo D (West Covina)	Jan 14	1.8	L	0.004	4
Shadow Oak Paseo F (West Covina)	Jan 14	1.5	L	0.001	1
Shadow Oak Paseo G (West Covina)	Jan 14	8.1	L	0.003	3
Hollencrest Middle School (West Covina)	Jan 14	10.8	AF,L	0.011	12
Merced Elementary School (West Covina)	Jan 14	7.6	AF,L	0.008	9
West Covina High School (West Covina)	Jan 14	9.7	AF,L	0.013	15
Woodgrove Park (West Covina)	Feb 14	10	L	0.008	9
Rimgrove Park (West Covina)	Jun 14	7.1	L	0.005	5
Shadow Park Center (West Covina)	Jun 14	9.6	L	0.0003	0.3
Will Rogers Mini-park (Long Beach)	Feb 14	1.7	L	0.001	1
Stanford Middle School (Long Beach)	Feb 14	13.3	AF, L	0.010	11
Lowell Elem./Rogers Middle Schools (Long Beach)	Feb 14	5.3	AF, L	0.004	4
Hacienda Heights Little League (Hacienda Heights)	Mar 14	4	AF	0.001	1
Sukut Construction (Walnut)	Mar 14	--	I	0.007	8
Firestone Blvd. medians (South Gate)	Mar 14		L	0.002	2
Lancaster City Park (Lancaster)	Mar 14	36	L	0.018	20
Kettering Solar Facility construction (Lancaster)	Mar 14	--	I	0.002	2
Walmart, 4651 Firestone Blvd. (South Gate)	Apr 14		L	0.001	1
CVS Pharmacy, 4621 Firestone Blvd. (South Gate)	Apr 14		L	0.002	3
Lancaster Solar 1&2 construction (Lancaster)	Apr 14	--	I	0.007	8
Downtown Gateway construction (Lancaster)	May 14	--	I	0.00001	0.02
Lancaster pump station installation (Lancaster)	May 14	--	I	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.

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), together producing 377.08 MGD (422,537 AFY) of effluent in FY 13-14, a decrease of 2.6% from the preceding fiscal year. This decrease was due to the on-going effects of water conservation in response to drought conditions beginning in 2006 and to the lingering effects of the recent nationwide economic recession. This level of flow is roughly equivalent to that last seen in 1968. Of the total amount of effluent produced, 113.99 MGD (127,727 AFY), or 30.2%, was recycled water available for reuse, a decrease of 2.6% in total flow over the preceding fiscal year. Conversely, recycled water usage remained at a high level due to another year of below average rainfall that allowed for the use of greater amounts of recycled water for both groundwater replenishment and landscape irrigation. During FY 13-14, 73.59 MGD (82,458 AFY) was actively reused, a slight 0.5% decrease from the preceding fiscal year, This quantity was 64.6% of the recycled water available and 19.5% of the total effluent produced in the JOS.

2.1 LA CAÑADA WRP

LA CAÑADA WRP FACTS	
Plant capacity:	0.2 MGD
Water produced and reused:	0.079 MGD 89 AFY 4.3% FY decrease
FY13-14 O&M:	$4,081/AF
No. of reuse sites:	1 105 acres

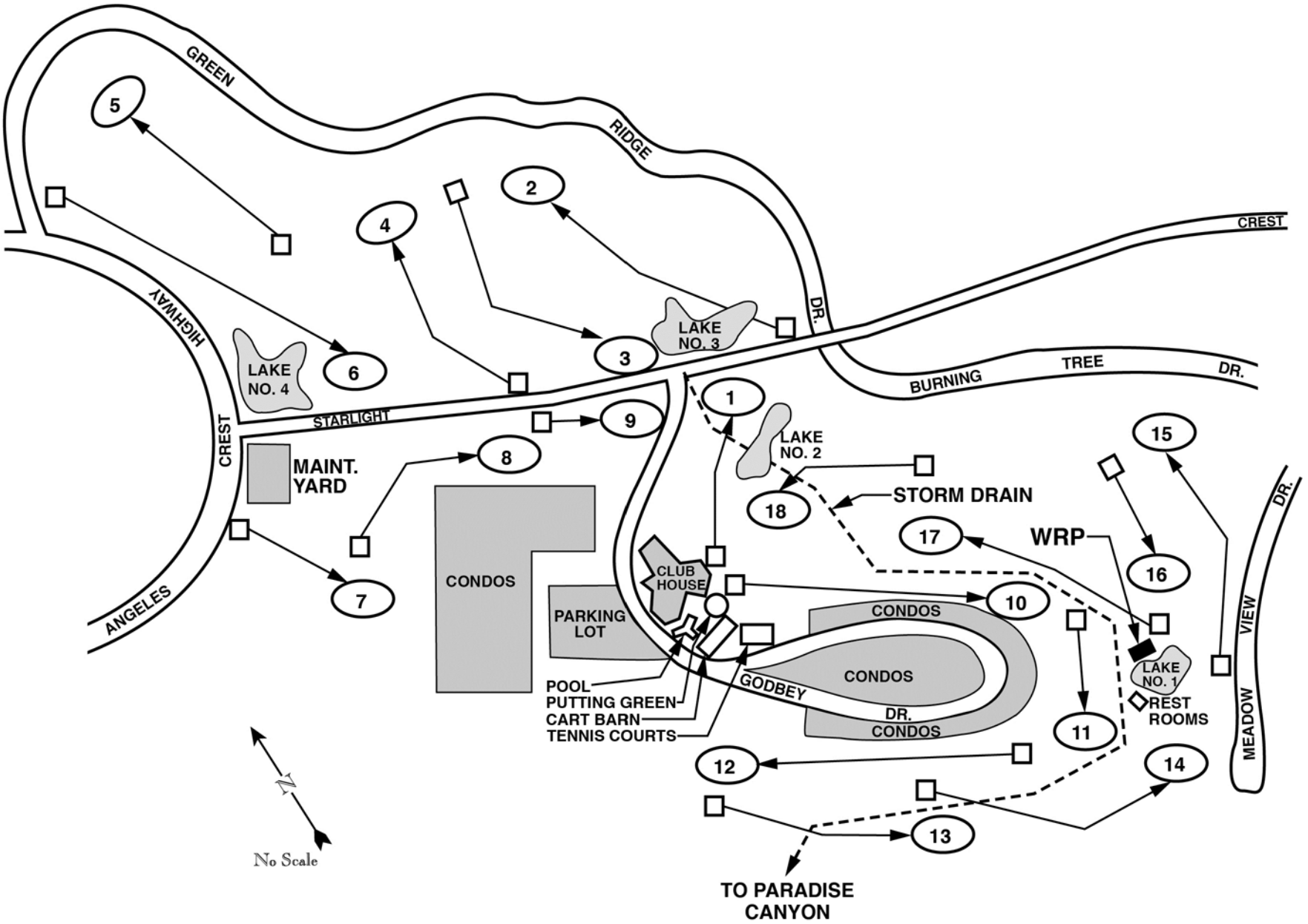
This treatment facility, completed in 1962 and expanded in 1971, is the smallest one operated by the Sanitation Districts and is located on the site of the La Cañada-Flintridge Country Club (Figure 6), at 533 Meadowview Drive, La Cañada, CA 91011. In February 1996, an outfall trunk sewer (for waste activated 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 0.079 MGD (89 AFY) of wastewater generated by the 425 homes surrounding the country club in FY 13-14 (0.02% of the effluent produced in the JOS). This flow rate was a 4.3% decrease from the preceding fiscal year. The operation and maintenance (O&M) cost in FY 13-14 to produce this water was approximately $4,081/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. 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 16.34 MGD

FIGURE 6
LA CAÑADA-FLINTRIDGE COUNTRY CLUB



LONG BEACH WRP FACTS	
Plant capacity:	25 MGD
Water produced:	16.34 MGD 18,314 AFY 12.3% FY decrease
FY13-14 O&M:	$341/AF
Water reused:	5.526 MGD 6,193 AFY 8.6% FY decrease 33.8% of production
Delivery systems:	2 179,680 ft. of pipe
No. of reuse sites:	66 1,964 acres

(18,314 AFY) of coagulated, filtered, disinfected tertiary recycled water in FY 13-14 (4.3% of the effluent produced in the JOS), which was a 12.3% decrease from the preceding fiscal year, at an O&M cost of approximately $341/AF.

Recycled water quality for FY 13-14 is presented in Table B-1 of Appendix B. An average of 5.526 MGD (6,193 AFY), or 33.8% of the recycled water produced at this plant was delivered for reuse during FY 13-14. This represents an 8.6% 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 13-14.

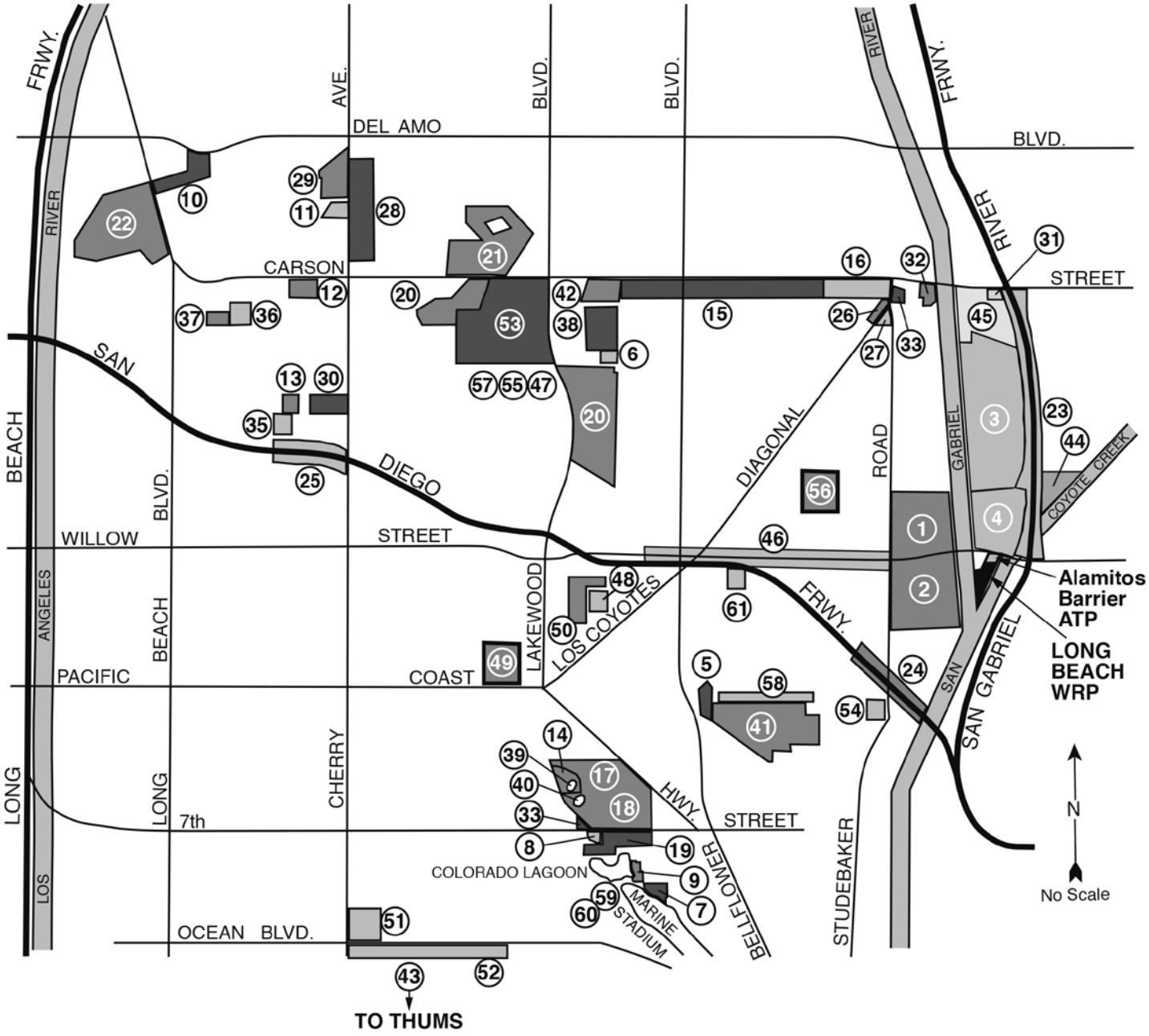
In FY 13-14, three new sites were added to the LBWD distribution system. In February 2014, Will Rogers Mini-park, Stanford Middle School, and Lowell Elementary/Rogers Middle Schools were connected. During FY 13-14, LBWD served 4.728 MGD (5,298 AFY), or 28.9% of the recycled water produced at this plant, through approximately 179,680 feet of pipeline (6- to 24-inches in diameter) to 65 direct, non-potable reuse sites encompassing 1,964 acres (additional recycled water was delivered by LBWD to the Alamitos Seawater Intrusion Barrier project, see Section 2.2.2, below). This was a 13.2% increase over the preceding fiscal year.

LBWD sells the recycled water at a rate of $773.63/AF for peak demand (nighttime) usage or $552.78/AF for off-peak demand (daytime) usage, or between 50-70% of the potable water rate of $1,105.12/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 jointly purchased from the Metropolitan Water District of Southern California (MWD) by the WRD and the

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
55 Rubbercraft (3701 Conant St.)
56 Millikan High School
57. LD Products (3700 Cover St.)
58. Atherton medians
59. Will Rogers mini park
60. Lowell Elementry/Rogers Middle
61. Stanford Middle School

TABLE 8
SUMMARY OF FISCAL YEAR 13-14 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	0.186	208
El Dorado Golf Course	Aug 80	150	L	0.272	305
Recreation Park	Oct 82	26	L	0.062	69
Recreation Golf Course	Oct 82	149	L	0.288	323
Whaley Park	Jun 83	9	L	0.021	23
El Dorado Park East	Jan 84	300	L	0.525	588
Nature Center	Jan 84	60	L	0.072	81
605 Freeway at Wardlow	Feb 84	50	L	0.025	28
Heartwell Park	Feb 84	120	L	0.233	261
Skylinks Golf Course	Apr 84	155	L,P	0.295	330
Douglas Park	Apr 84	3	L	0.006	6
405 Freeway at Atherton	May 84	5	L	0.001	1
DeMille Junior High School	Jun 84	5	AF,L	0.044	50
Heartwell Golf Park	Jun 84	30	L	0.070	78
Veterans Memorial Stadium	Jan 85	6	AF	0.023	26
Recreation Park Bowling Green	Aug 85	3	L	0.013	15
California State University, Long Beach	Dec 85	52	AF,L	0.173	194
Long Beach City College	Feb 86	15	AF,L	0.067	75
Recreation 9-Hole Golf Course	Mar 86	37	L	0.085	96
Blair Field	Apr 86	5	AF	0.012	14
Woodlands Park	Apr 86	7	L	0.015	17
Colorado Lagoon Park	Apr 86	4	L	0.0004	0.4
Marina Vista Park	Apr 86	30	L	0.034	38
Lakewood 1st Presbyterian Church	Sep 88	1	L	0.0001	0.1
Virginia Country Club	Mar 89	135	L,P	0.146	163
Lakewood Golf Course	Mar 89	128	L,P	0.380	425
Scherer Park	Mar 89	24	L	0.033	37
Sunnyside Memorial Park	Apr 89	35	L	0.089	100
All Soul's Cemetery	Apr 89	40	L	0.128	143
Cherry Avenue Park	May 89	10	L	0.013	15
Los Coyotes Diagonal	Mar 91	1	L	0.002	3
Wilson High School	Jun 91	5	AF,L	0.029	32
Long Beach Water Department office	Jan 92	2	L	0.0004	0.5
Reservoir Park (Signal Hill)	Feb 92	2	L	0.009	10
Burroughs Elementary School (Signal Hill)	Feb 92	4	AF,L	0.004	4
Hughes Middle School	Apr 92	3	AF,L	0.013	14
405 Freeway at Walnut	Apr 92	9	L	0.013	15
Somerset Park	May 92	3	L	0.002	2
Longfellow Elementary School	May 92	1	AF,L	0.0002	0.2
THUMS	Jun 95	8	I	1.018	1,141
Joe Rodgers Park	Nov 96	3	L	0.012	13
Jauregui Nursery	Jul 97	5	O	0.039	43
El Dorado Lakes Condominiums	Aug 98	11	L	0.030	33
WalMart	Dec 98	3	L	0.001	1
Vestar Development	Feb 99	8	L	0.033	37
Willow Street medians	Dec 01	2.4	L	0.006	6
Long Beach Water Department Impoundment	Jul 02	--	I	0.002	2
Alamitos Seawater Intrusion Barrier (WRD)	Feb 03	--	R	0.799	896
Boeing	Mar 03	52	L	0.030	34
Tucker Elementary School	May 04	3	AF, L	0.007	7
Alamitos Hill Reservoir landscaping	Jul 04	8.6	L	0.005	6
Bluff Park	Jul 07	25.8	L	0.009	10

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 13-14 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)
Stearns Park	Jul 07	21	L	0.030	34
Bixby Park	Jul 07	12.5	L	0.009	10
Douglas Park residential/commercial development	Nov 07	2.1	L	0.054	60
Tincher Elementary School	Feb 09	1.5	AF, L	0.003	3
Long Beach Public Works sewer flushing	Aug 10	--	I	0.003	4
Long Beach Public Works street sweeping	Aug 10	--	I	0.0004	0.5
Rubbercraft (3701 Conant St.)	Sep 11	0.9	L	0.004	4
Millikin High School	Oct 11	12	AF, L	0.032	35
LD Products (3700 Cover Street)	Feb 12	0.7	L	0.002	2
LD Products (3700 Cover Street)	Feb 12	--	I	0.001	1
Atherton St. medians	Jun 13	0.5	L	0.003	3
Will Rogers Mini-park	Feb 14	1.7	L	0.001	1
Stanford Middle School	Feb 14	13.3	AF, L	0.010	11
Lowell Elementary/Rogers Middle Schools	Feb 14	5.3	AF, L	0.004	4
TOTALS		**1,964.2**		**5.526**	**6,193**

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.

Orange County Water District (OCWD) was injected into the Alamitos Barrier. In 1993, additional injection wells were constructed, increasing 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 13-14, the LVLAWTF produced 0.799 MGD (896 AFY) of advanced treated recycled water that was injected into the Alamitos Barrier, or 4.9% of the effluent produced at the Long Beach WRP. This was a 57.2% decrease in the amount of recycled water used for this application from the preceding fiscal year, resulting from a complete shutdown of the LVLAWTF during construction to increase the facility's production capacity to 100% of the Barrier's water demand.

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 22.41 MGD (24,804 AFY) of coagulated, filtered, disinfected tertiary recycled water during FY 13-14 (5.9% of the effluent produced in the JOS), which was an increase of 8.1% over the preceding fiscal year, at an O&M cost of approximately $356/AF. Effluent water quality for FY 13-14 is presented in Table B-2 of Appendix B.

Through three contracts, an average of 6.656 MGD (7,459 AFY), or 30.1% of the recycled water produced at this plant was delivered during FY 13-14 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 an 11.9% increase in reuse flows over the preceding fiscal year. Use of recycled water from this facility is permitted under LARWQCB Order Nos. 87-51 and 97-072.

LOS COYOTES WRP FACTS	
Plant capacity:	37.5 MGD
Water produced:	22.41 MGD 24,804 AFY 8.1% FY increase
FY13-14 O&M:	$356/AF
Water reused:	6.656 MGD 7,459 AFY 11.9% FY increase 30.1% of production
Delivery systems:	4 279,960 ft. of pipe
No. of reuse sites:	278 2,471.8 acres

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 13-14, an average of 0.048 MGD (53 AFY), or about 0.2% of the recycled water produced at this plant, was used at this site for landscape irrigation. This was a 12.8% increase over 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 13-14.

No new users of recycled water were added to the City of Cerritos distribution system during FY 13-14. During FY 13-14, the City of Cerritos used 1.910 MGD (2,141 AFY), or 8.6% of the recycled water produced at the Los Coyotes WRP, for landscape irrigation and impoundments on 755.7 acres at 86 individual sites. This was an increase of 8.8% over the preceding fiscal year. No city or private water trucks hauled recycled water during this fiscal year. In FY 13-14, 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 13-14, are shown on 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.

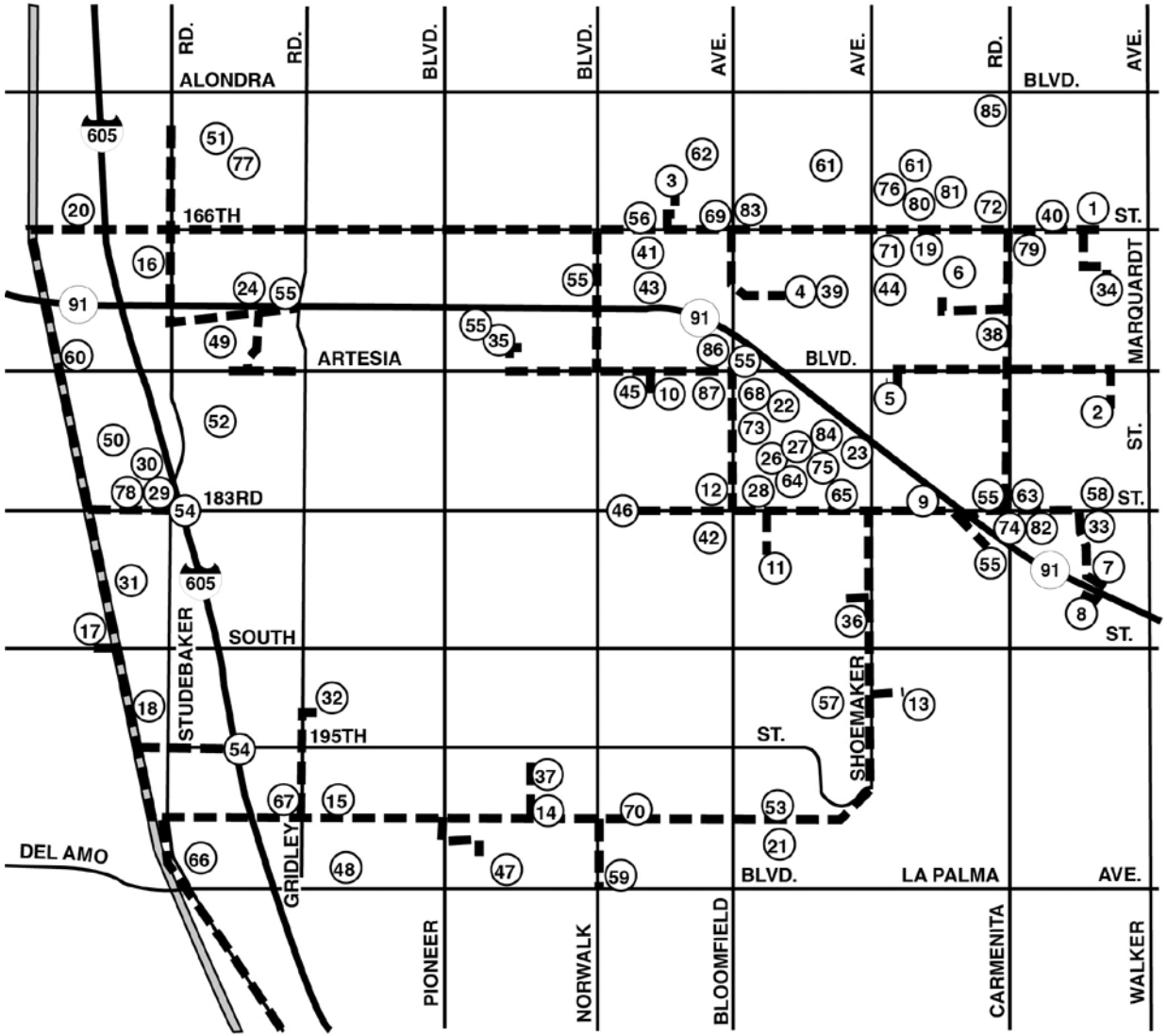
During FY 13-14, the City of Lakewood used 0.518 MGD (581 AFY), or 2.3% of recycled water produced at the Los Coyotes WRP, for irrigation of landscaping, athletic fields, and vegetables on approximately 191 acres at 17 individual sites. This was an increase of 10.9% over the preceding fiscal year. No new reuse sites were added to City's recycled water distribution system in FY 13-14.

The City of Lakewood was charged $566.28/AF by the City of Cerritos during FY 13-14. The City of Lakewood, in turn, retailed the recycled water to its customers for $466.09/AF, or 37% of its potable rate of $1,258.88/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, South Gate, and Vernon. 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. 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

FIGURE 8
CITY OF CERRITOS RECYCLED 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
84. 12800 Center Court
85. Chugh Firm
86. Chevron
87. Bloomfield Plaza

N

No Scale

(1) REUSE SITES

TRANSMISSION LINE

TABLE 9
SUMMARY OF FISCAL YEAR 13-14 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	0.116	130
Library/Civic Center	Dec 87	4	L	0.017	19
Olympic Natatorium	Dec 87	6	L	0.020	23
Whitney Learning Center	Dec 87	10	AF,L	0.026	30
Gonsalves Elementary School	Dec 87	5	AF,L	0.010	11
Wittman Elementary School	Dec 87	5	AF,L	0.011	12
Gahr High School	Dec 87	28	AF,L	0.055	62
Area Development Project No. 2	Jan 88	11.5	L,P	0.074	83
Medians/Parkways	Jan 88	42.8	L	0.154	172
605 Freeway	Jan 88	58.6	L	0.089	99
91 Freeway	Jan 88	70	L	0.052	58
Frontier Park	Jan 88	2.5	L	0.013	15
Carmenita Junior High School	Jan 88	5	AF,L	0.018	21
Cerritos Elementary School	Jan 88	6	AF,L	0.013	15
Stowers Elementary School	Jan 88	6	AF,L	0.020	23
Kennedy Elementary School	Jan 88	7	AF,L	0.016	18
City Park East	Jan 88	18	L	0.049	55
Satellite Park	Jan 88	2	L	0.008	9
Leal Elementary School	Jan 88	6	AF,L	0.009	10
Cerritos High School	Jan 88	20	AF,L	0.043	48
Elliott Elementary School	Jan 88	7	AF,L	0.016	18
Carmenita Park	Jan 88	4.5	L	0.016	18
Juarez Elementary School	Jan 88	7	AF,L	0.025	29
ABC Adult School & Office	Jan 88	3	L	0.014	16
Tracy Education Center	Jan 88	6	AF,L	0.003	4
Liberty Park	Jan 88	20	L	0.041	46
Gridley Park	Jan 88	9	L	0.030	33
Jacob Park	Jan 88	4.5	L	0.016	18
Heritage Park	Feb 88	12	L	0.041	46
Bragg Elementary School	Feb 88	7	AF,L	0.018	20
Haskell Junior High School	Feb 88	18	AF,L	0.044	49
Pat Nixon Elementary School	Feb 88	5	AF,L	0.013	14
Cabrillo Lane Elementary School	Feb 88	9	AF,L	0.010	11
Sunshine Park	Feb 88	3.5	L	0.012	13
Friendship Park	Feb 88	4	L	0.013	15
Bettencourt Park	Feb 88	2	L	0.007	8
Brookhaven Park	Feb 88	2	L	0.007	8
Saddleback Park	Feb 88	2	L	0.005	5
Westgate Park	Feb 88	4	L	0.011	13
Rainbow Park	Mar 88	2.5	L	0.005	6
Bellflower Christian School	Mar 88	31.4	AF,L	0.052	58
Cerritos Community College	Mar 88	55	AF,L	0.104	116
Cerritos Regional County Park	Apr 88	59	L	0.168	189
Artesia Cemetery District	Apr 88	10.9	L	0.028	32
Rosewood Park	Apr 88	2.7	L	0.012	14
Sports Complex	Mar 89	25	AF,L	0.063	71
Shoemaker On/Off Ramp - 91 Freeway	Dec 89	4.6	L	0.014	16
Transpacific Development Co.	Feb 90	6.9	L	0.014	15
Automated Data Processing	Feb 90	0.7	L	0.006	6
Sheraton Hotel	Mar 90	0.6	L	0.004	4
Cerritos Pontiac/GMC Truck	May 90	0.5	L	0.001	1
Moothart Chrysler	May 90	0.4	L	0.007	7
Windjammer Off-Ramp - 91 Freeway	Sep 90	0.8	L	0.001	1

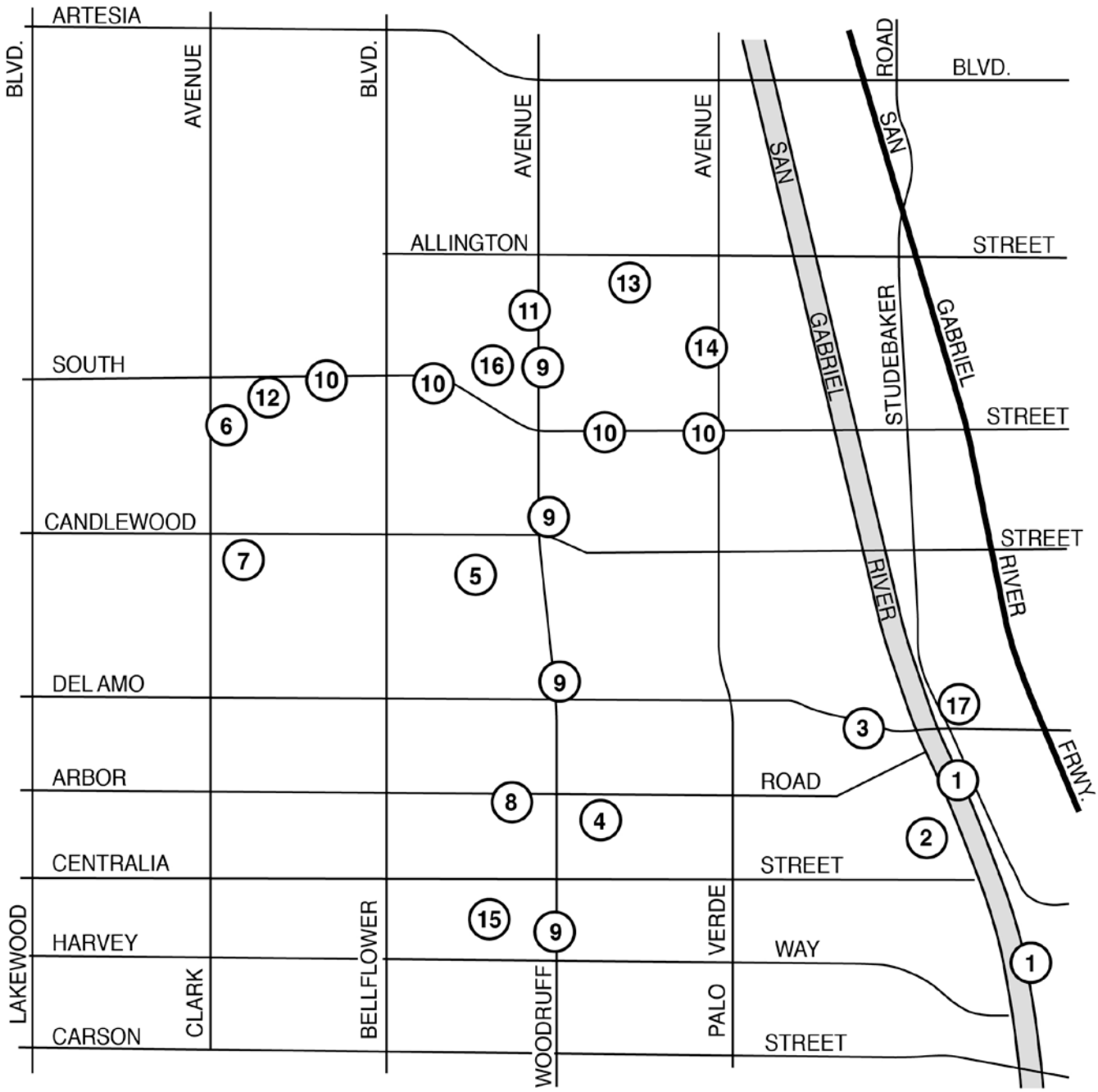
NOTES: AF = Athletic field irrigation, AG = Agricultural irrigation, E = Environmental enhancement, I = Industrial, L = Landscape irrigation, O = Ornamental plant irrigation, P = Impoundment, R = Groundwater replenishment.

TABLE 9
SUMMARY OF FISCAL YEAR 13-14 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	0.002	2
City Water Truck	May 91	--	L	0	0
Private Haulers	May 91	--	I	0	0
Parkside Condominiums	May 91	1.8	L	0.006	7
Concordia Church	Jun 91	4	L	0.007	8
Church of the Nazarene	Aug 91	1	L	0.005	5
B&B Stables	Aug 91	18	I	0.006	6
Shadow Park Homeowner's Association	Nov 91	6	L	0.022	25
Area Development Project No. 6	Apr 92	9	L	0.059	66
Granada Park Homeowners Association	May 92	3.8	L	0.013	14
Cerritos Post Office	Feb 93	0.7	L	0.007	8
Center for the Performing Arts	Mar 93	1	L	0.004	4
Delta Dental	Nov 93	1.8	L	0.004	4
Southern California Edison nursery	Mar 94	3.5	O	0.006	6
Vestar Development	Jun 94	9.6	L	0.036	40
Sundance Condominiums	Jan 95	9	L	0.036	40
Cerritos Nursery	Dec 95	3	O	0.004	4
Encore Maintenance-Warmington Homes	May 96	1.1	L	0.004	4
Artesia Off-Ramp - 91 Freeway	Aug 96	3.3	L	0.005	5
Midway International	Feb 98	0.3	L	0.001	1
Bloomfield Associates, 17871 Park Plaza Drive	Sep 98	0.5	L	0.002	2
183rd Street On-Ramp - 91 Freeway	Feb 99	0.6	L	0.001	2
AT&T building, 12900 Park Plaza Drive	Aug 99	0.9	L	0.012	13
Laskey-Weil building, 13101 Moore Street	Oct 01	0.4	L	0.005	5
Chancellor Village Senior Housing	Nov 02	0.9	L	0.003	3
LandRover	Dec. 06	0.3	L	0.005	6
Surgical Center, Carmenita & 166th	May 08	0.1	L	0.0004	0.5
UPS Parking Structure, 13150 Moore Street	May 08	0.5	L	0.002	2
UPS Main Building, 13233 Moore Street	Nov 08	4.4	L	0.016	18
Fountain Walk Senior Housing, 18310 Carmenita	Nov 08	0.1	L	0.0003	0.3
ASCIP Building, 16550 Bloomfield Ave.	Feb 09	0.1	L	0.0003	0.4
12800 Center Court	Jul 09	0.4	L	0.001	2
Chugh Firm, 15925 Carmenita Road	Jan 11	0.2	L	0.002	2
Chevron, 17255 Bloomfield Ave.	Mar 11	0.1	L	0.001	1
Bloomfield Plaza, 12560 Artesia Blvd.	May 13	0.1	L	0.001	1
TOTALS		**755.6**		**1.910**	**2,141**

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 13-14 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	0.091	102
Monte Verde Park	Aug 89	4	L	0.064	72
Mae Boyer Park	Aug 89	8	L	0.037	41
Jose Del Valle Park	Aug 89	12	L	0.038	43
Jose San Martin Park	Aug 89	9.3	L	0.031	35
City Water Yard	Aug 89	1	L	0.011	13
Woodruff Avenue greenbelt	Aug 89	4.1	L	0.012	13
South Street greenbelt	Aug 89	3.3	L	0.008	9
Mayfair Park	Dec 89	18	L	0.049	55
St. Joseph Parish School	Aug 90	3.5	AF,L	0.014	16
Foster Elementary School	Sep 90	6	AF,L	0.021	23
Civic Center Way and City Hall	Nov 90	2.8	L	0.018	20
Mayfair High School	May 91	36.5	AF,L	0.052	58
Lindstrom Elementary School	Sep 91	12	AF,L	0.017	19
Lakewood High School	Sep 91	25	AF,L	0.039	44
My Hoa Farm	May 93	5	AG	0.014	16
Del Amo Blvd. greenbelt	Jul 03	0.3	L	0.002	3
TOTALS		**190.8**		**0.518**	**581**

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.

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 13-14.

CBMWD has constructed the delivery facilities right up to the end users; however, the local retail water purveyors are the entities 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 13-14, four new sites were added to the Century recycled water distribution system. In November 2013, the cooling towers at Air Products & Chemicals in Santa Fe Springs were connected. In March 2014, the medians along Firestone Blvd. in South Gate were connected. In April 2014, the landscaping around the Walmart (4651 Firestone Blvd.) and the CVS Pharmacy (4621 Firestone Blvd.) in South Gate were connected.

During FY 13-14, CBMWD delivered 4.181 MGD (4,685 AFY) of recycled water, or 18.9% of recycled water produced at the Los Coyotes WRP, through 11 retail water purveyors to 176 individual sites for landscape and athletic field irrigation on approximately 1,520 acres and for industrial process water. This was an increase of 13.6% over the preceding fiscal year.

In FY 13-14, CBMWD sold the recycled water on a wholesale basis to its retail water purveyor customers on a monthly use, tiered rate schedule of $540 for the first 50 AF and $492 for anything above 50 AF. This price is between 47% and 52% of the rate of $1,038/AF it charges for Tier 1 non-interruptible potable water supplied by MWD, and between 42% and 45% of the rate of $1,180/AF it charges for Tier 2 supplies. Recycled water delivered outside of CBMWD's service area was subject to a $21-22/AF surcharge for each of the two tiers. Recycled water deliveries to the Malburg power plant in Vernon received an industrial use rate of $390 for the first 25 AF, $363 for the next 25 AF, $336 for the next 50 AF, and $309 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 13-14, the plant produced 7.40 MGD (8,293 AFY) of coagulated, filtered, disinfected tertiary recycled water (2.0% of the effluent produced in the JOS), which was a 3.0% increase over the preceding fiscal year, at a FY 13-14 O&M cost of approximately $453/AF. Recycled water quality for FY 13-14 is presented in Table B-3 of Appendix B.

FIGURE 10
CENTRAL BASIN MUNICIPAL WATER DISTRICT
RECYCLED WATER DISTRIBUTION SYSTEM

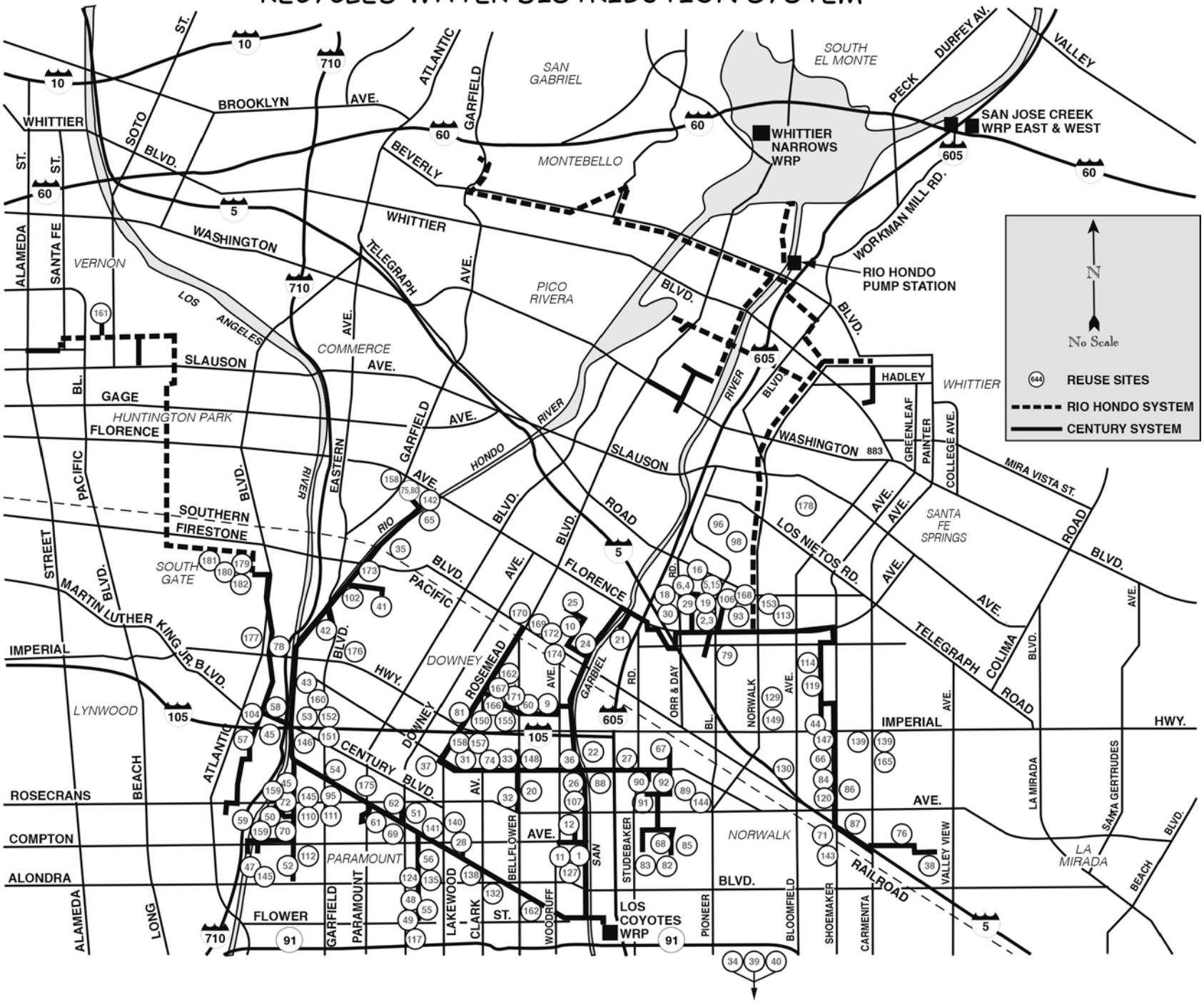


TABLE 11
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
CENTURY DISTRIBUTION SYSTEM
(PAGE 1 OF 4)

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	0.053	59
Lake Center Park (Santa Fe Springs) (2)	Mar 92	8	L	0.027	31
Lake Center School (Santa Fe Springs) (3)	Mar 92	8	AF,L	0.023	26
Clarkman Walkway (Santa Fe Springs) (4)	Mar 92	0.1	L	0.0003	0.4
Towne Center Walkway (Santa Fe Springs) (5)	Apr 92	0.1	L	0.0005	1
Lakeview Child Care (Santa Fe Springs) (6)	May 92	0.2	L	0.001	1
Orr & Day Road medians (Santa Fe Springs) (7)	May 92	0.1	L	0.0001	0.1
Florence Avenue medians (Santa Fe Springs) (8)	Jun 92	3	L	0.007	8
Gauldin Elementary School (Downey) (9)	Jun 92	8.4	AF,L	0.008	9
Rio San Gabriel School (Downey) (10)	Jun 92	14.8	AF,L	0.027	30
Bellflower High School (Bellflower) (11)	Jul 92	28.4	AF,L	0.076	85
Ernie Pyle Elementary School (Bellflower) (12)	Aug 92	4.9	AF,L	0.013	15
Telegraph Road medians (Santa Fe Springs) (13)	Aug 92	0.5	L	0.004	5
Lakeview Park (Santa Fe Springs) (14)	Aug 92	6.7	L	0.018	20
Clark Estate (Santa Fe Springs) (15)	Aug 92	4.3	L	0.007	8
Towne Center Green (Santa Fe Springs) (16)	Aug 92	2.3	L	0.007	8
Pioneer Road medians (Santa Fe Springs) (17)	Sep 92	0.4	L	0.035	39
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	5
Lewis School (Downey) (20)	Nov 92	4.6	AF,L	0.010	11
Wilderness Park (Downey) (21)	Nov 92	24	L	0.080	90
605 Freeway at Foster (Bellflower) (22)	Jan 93	14	L	0.003	3
Promenade Walkway (Santa Fe Springs) (23)	Jan 93	0.3	L	0.002	3
Rio San Gabriel Park (Downey) (24)	Jan 93	6.4	L	0.038	42
East Middle School (Downey) (25)	Jan 93	26	AF,L	0.032	36
Zinn Park (Bellflower) (26)	Jan 93	1.7	L	0.013	14
605/105 Interchange (Bellflower) (27)	Feb 93	22	L	0	0
Hollywood Sports Center (Bellflower) (28)	Feb 93	22.5	L	0.004	4
Santa Fe Springs High School (Santa Fe Springs) (29)	Feb 93	14.5	AF,L	0.032	35
605/5 Freeway at Florence (Santa Fe Springs) (30)	Feb 93	17	L	0.006	6
Old Downey Cemetery (Downey) (31)	Apr 93	7.5	L	0.026	30
Thompson Park (Bellflower) (32)	Apr 93	15	L	0.025	28
105 Freeway at Bellflower (Downey) (33)	May 93	17.9	L	0	0
Palms Park (Lakewood) (34)	May 93	20	L	0.003	4
Crawford Park (Downey) (35)	Jul 93	2.1	L	0.007	8
Humedo Nursery (Downey) (36)	Aug 93	11	O	0.006	6
105 Freeway at Lakewood (Downey) (37)	Sep 93	25	L	0.002	3
Shaw Industries Carpet Mill (Santa Fe Springs) (38)	Sep 93	--	I	0.212	237
Palms Elementary School (Lakewood) (39)	Sep 93	3.5	AF,L	0.013	15
Artesia High School (Lakewood) (40)	Sep 93	20.9	AF,L	0.034	38
West Middle School (Downey) (41)	Oct 93	19.5	AF,L	0.027	30
Circle Park (South Gate) (42)	Oct 93	4	L	0.018	20
Hollydale Park (South Gate) (43)	Nov 93	46	L	0.157	176
Robertson's Ready-Mix (Santa Fe Springs) (44)	Dec 93	--	I	0.004	5
710/105 Interchange (Paramount) (45)	Dec 93	18.5	L	0.0001	0.1
Downey/Contreras greenbelt (Paramount) (46)	Dec 93	0.1	L	0.001	1
Compton Golf Course (Paramount) (47)	Dec 93	13	L	0.026	29
Alondra Junior High School (Paramount) (48)	Dec 93	14	AF,L	0.019	21
Mokler Elementary School (Paramount) (49)	Dec 93	10	AF,L	0.012	13
Los Cerritos Elementary School (Paramount) (50)	Dec 93	8	AF,L	0.011	12
Wirtz Elementary School (Paramount) (51)	Dec 93	9	AF,L	0.012	14
Keppel Elementary School (Paramount) (52)	Dec 93	4	AF,L	0.005	6
Billy Lee Nursery (Paramount) (56)	Dec 93	2.5	O	0.009	10

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 13-14 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	0.00004	0.05
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	0.00002	0.02
Independence Park (Downey) (60)	Feb 94	10.4	L	0.017	19
Paramount Park (Paramount) (61)	Feb 94	9	L	0.025	28
Paramount High School (Paramount) (62)	Feb 94	19	AF,L	0.033	37
Rosecrans/Paramount medians (Paramount) (63)	Mar 94	0.2	L	0.002	2
Somerset medians (Paramount) (64)	Apr 94	0.9	L	0.011	13
Rio Hondo Golf Course (Downey) (65)	Apr 94	92.4	L	0.250	280
Zimmerman Park (Norwalk) (66)	Apr 94	9.5	L	0.019	21
Vista Verde Park (Norwalk) (67)	Apr 94	6.5	L	0.020	22
Gerdes Park (Norwalk) (68)	Apr 94	8.6	L	0.018	21
Clearwater Junior High School (Paramount) (69)	Apr 94	4	AF,L	0.033	36
Steam Engine Park (Paramount) (70)	Jun 94	0.6	L	0.002	2
5 Freeway at Shoemaker/Firestone (Norwalk) (71)	Jul 94	0.8	L	0	0
Spane Park (Paramount) (72)	Jul 94	5	L	0.011	13
Orange/Cortland Parkway (Paramount) (73)	Jul 94	1.3	L	0.003	4
Carpenter School (Downey) (74)	Aug 94	7.4	AF,L	0.013	15
John Anson Ford Park (Bell Gardens) (75)	Sep 94	45	L	0.060	65
Ramona Park (Norwalk) (76)	Oct 94	4.8	L	0.014	15
Alondra median (Paramount) (77)	Oct 94	0.6	L	0.014	15
Imperial/Wright Road medians (Lynwood) (78)	Oct 94	0.2	L	0.0002	0.2
Little Lake Park (Santa Fe Springs) (79)	Dec 94	18	L	0.048	54
John Anson Ford Golf Course (Bell Gardens) (80)	Feb 95	13.6	L	--	--
South Middle School (Downey) (81)	May 95	15.8	AF,L	0.020	22
Nuffer Elementary School (Norwalk) (82)	Jun 95	10.4	AF,L	0.012	14
Lampton Middle School (Norwalk) (83)	Jun 95	9.5	AF,L	0.011	12
Hargitt Middle School (Norwalk) (84)	Jul 95	9.5	AF,L	0.026	29
Norwalk Adult School (Norwalk) (85)	Jul 95	17.2	AF,L	0.019	22
John Glenn High School (Norwalk) (86)	Jul 95	38.8	AF,L	0.048	53
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	0.007	8
Morrison Elementary School (Norwalk) (89)	Sep 95	7.7	AF,L	0.010	11
D.D. Johnston Elementary School (Norwalk) (90)	Sep 95	8.9	AF,L	0.012	14
Corvallis Middle School (Norwalk) (91)	Sep 95	16.9	AF,L	0.017	19
Norwalk High School (Norwalk) (92)	Sep 95	35.1	AF,L	0.043	48
Heritage Park (Santa Fe Springs) (93)	Oct 95	9.2	L	0.011	13
Belloso Farm Nursery (Paramount) (94)	Oct 95	2.5	O	0	0
Robertson's Ready-Mix (Paramount) (95)	Nov 95	--	I	0.009	10
Los Nietos Park (Santa Fe Springs) (96)	Jan 96	11.2	L	0.026	29
Bell Gardens Soccer Field (Bell Gardens) (97)	Feb 96	2.6	AF	0.009	10
Jersey Ave. School/city athl. fields (S.F. Springs) (98)	Mar 96	8	AF	0.009	11
Bellflower Blvd. medians (Bellflower) (99)	Jul 96	0.3	L	0.002	2
Alta Produce (Paramount) (100)	Aug 96	4	AG	0.002	2
Belloso Farm Nursery (South Gate) (101)	Sep 96	2.5	O	0	0
Temple Park (Downey) (102)	Oct 96	1	L	0.002	2
Woodruff Avenue medians (Bellflower) (103)	Oct 96	0.8	L	0.006	7
Ham Park (Lynwood) (104)	Dec 96	10	L	0	0
Jauregui Nursery (Paramount) (105)	Dec 96	2	O	0.003	3
Heritage Corporate Center (Santa Fe Springs) (106)	Jan 97	29.9	L	0.027	31
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	0.006	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 11
SUMMARY OF FISCAL YEAR 13-14 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	2
McLane Mowers (Paramount) (111)	Mar 97	0.6	L	0	0
ABC Nursery (Paramount) (112)	Mar 97	16	O	0	0
L.A. County Vector Control Bldg. (S.F. Springs) (113)	Mar 97	3.8	L	0.004	5
Greenstone Warehouse (Santa Fe Springs) (114)	Apr 97	0.4	L	0.002	2
McNab Avenue medians (Bellflower) (115)	Jul 97	0.1	L	0.0003	0.3
Foster Road/Premier Ave. medians (Downey) (116)	Aug 97	0.1	L	0.0004	0.5
Palm Growers Nursery (Downey) (117)	Oct 97	7.3	O	0	0
Alondra Blvd medians @ SGR (Bellflower) (118)	Oct 97	0.1	L	0.0004	0.4
Maruichi American building (Santa Fe Springs) (119)	Oct 98	0.4	L	0.001	1
Norwalk Golf Course (Norwalk) (120)	Jan 99	8	L	0.012	13
Soco-Lynch Corp. building (Santa Fe Springs) (121)	Feb 99	1	L	0.002	2
MC&C building (Santa Fe Springs) (122)	Mar 99	0.7	L	0.010	12
Lakewood Blvd. medians (Paramount) (123)	Mar 99	0.2	L	0.002	2
Progress Park (Paramount) (124)	Mar 99	6.2	L	0.014	16
Garfield Avenue medians (Paramount) (125)	Apr 99	0.1	L	0.003	3
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	0.004	4
Metropolitan State Hospital (Norwalk) (129)	Sep 99	80	L	0	0
Moffit School (Norwalk) (130)	Sep 99	1.6	AF,L	0.010	12
Rio Hondo Channel (Downey) (131)	Nov 99	0.8	L	0.001	1
Simms Park (Bellflower) (132)	Dec 99	12.5	L	0.018	20
Foster Road Greenbelt (Norwalk) (133)	Mar 00	3.3	L	0.008	9
San Luis Street @ flood channel (Paramount) (134)	Apr 00	3	L	0.001	1
Jefferson School (Paramount) (135)	Jul 00	0.5	AF,L	0.003	3
Columbus High School (Downey) (136)	Aug 00	25	AF,L	0.018	20
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	0.156	175
Bellflower Storage (Bellflower) (140)	Jun 01	3	L	0.001	2
Railroad Beautification (Paramount) (141)	Jul 01	0.5	L	0.001	2
Rio Hondo Channel (Bell Gardens) (142)	Jul 01	0.3	L	0.003	4
CDM building (Santa Fe Springs) (143)	Oct 01	0.1	L	0.002	3
L.A. County Recorder's Office (Norwalk) (144)	Jan 02	2.7	L	0.010	11
Tays Cool Fuel (Paramount) (145)	Feb 02	0.2	L	0.002	2
L.A. River landscaping (South Gate) (146)	Mar 02	2.5	L	0.002	2
Lakewood-Adoree medians (Downey) (150)	Jul 02	3.4	L	0.040	45
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	0.3
L.A. County Library (Norwalk) (149)	Nov 02	0.9	L	0.003	4
Metro State/Wheelabrator (Norwalk) (129)	Jan 03	--	I	0.285	319
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	3
Steve Horn Way/Bellflower medians (Downey) (155)	Nov 03	0.3	L	0.014	16
Pro Growers Nursery (Norwalk) (156)	Sep 04	11.3	O	0.053	59
Kaiser Administration building (Downey) (157)	Oct 04	2.5	L	0.005	6
Downey Studios (Downey) (158)	Oct 04	1	L	0	0
Dills Park (Paramount) (159)	Jul 05	12.5	L	0.031	34
Hollydale Elementary (South Gate) (160)	Sep 05	3	AF,L	0.001	1
Malburg Generation Station (Vernon) (161)	Oct 05	--	I	0.790	885
Stuart and Gray medians (Downey) (162)	Dec 05	0.4	L	0.008	8
Woodruff and Maple medians (Bellflower) (163)	Mar 06	0.1	L	0.0002	0.3

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 11
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
CENTURY DISTRIBUTION SYSTEM
(PAGE 4 OF 4)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Sculpture Garden (Santa Fe Springs) (164)	May 06	0.6	L	0	0
Foster Road medians (Santa Fe Springs) (165)	Jul 06	1	L	0.014	16
Space Learning Center (Downey) (166)	Apr 08	10.5	L	0	0
Cornerstone Commerce Center (Downey) (167)	Jun 08	0.8	L	0.006	6
Mora Drive medians (Santa Fe Springs) (168)	Oct 08	0.1	L	0.007	8
Firestone Blvd. medians (Downey) (169)	Feb 09	0.1	L	0.001	1
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	0.058	65
Walgreens/Big Lots, 9018 Firestone (Downey) (172)	May 09	0.4	L	0.003	3
Pacific Alloy Casting (South Gate) (173)	Jul 09	--	I	0.018	20
MTA Bike Trail (Bellflower) (174)	Nov 09	0.1	L	0.009	10
Paramount Blvd. medians (Paramount) (175)	Mar 10		L	0.006	6
Los Amigos Golf Course (L.A. County) (176)	Aug 10	110	L	0.228	255
Atlantic Ave. medians (South Gate) (177)	Mar 11	16.3	L	0.006	7
Air Products & Chemicals (Santa Fe Springs) (178)	Nov 13	--	I	0.188	210
Firestone medians (South Gate) (179)	Mar 14		L	0.002	2
Walmart, 4651 Firestone Blvd. (South Gate) (180)	Apr 14		L	0.001	1
CVS Pharmacy, 4621 Firestone (South Gate) (181)	Apr 14		L	0.002	3
TOTALS		**1,520.3**		**3.681**	**4,124**

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:	7.40 MGD 8,293 AFY 15.6% FY decrease
FY13-14 O&M:	$453/AF
Water reused: (including recharge)	7.313 MGD 8,195 AFY 4.8% FY decrease 98.8% of production
Delivery systems:	2 190,100 ft. of pipe
No. of reuse sites:	202 2,198.0 acres

Two agencies, the Pomona Water Department (PWD) and the Walnut Valley Water District (WVWD), along with the Sanitation Districts' Spadra site, together used 3.391 MGD (3,799 AFY) or 45.8% of the plant's total production. This was a 4.8% 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 the 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. In FY 13-14, 3.923 MGD (4,396 AFY) was recharged into the groundwater and, for the first time in recent memory, none of the recycled water delivered was bypassed around the spreading grounds and lost to the ocean during storm episodes. Also, beginning in July 2013, recycled water delivered for recharge is being purchased by the WRD. 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 Order No. 91-100 for groundwater replenishment.

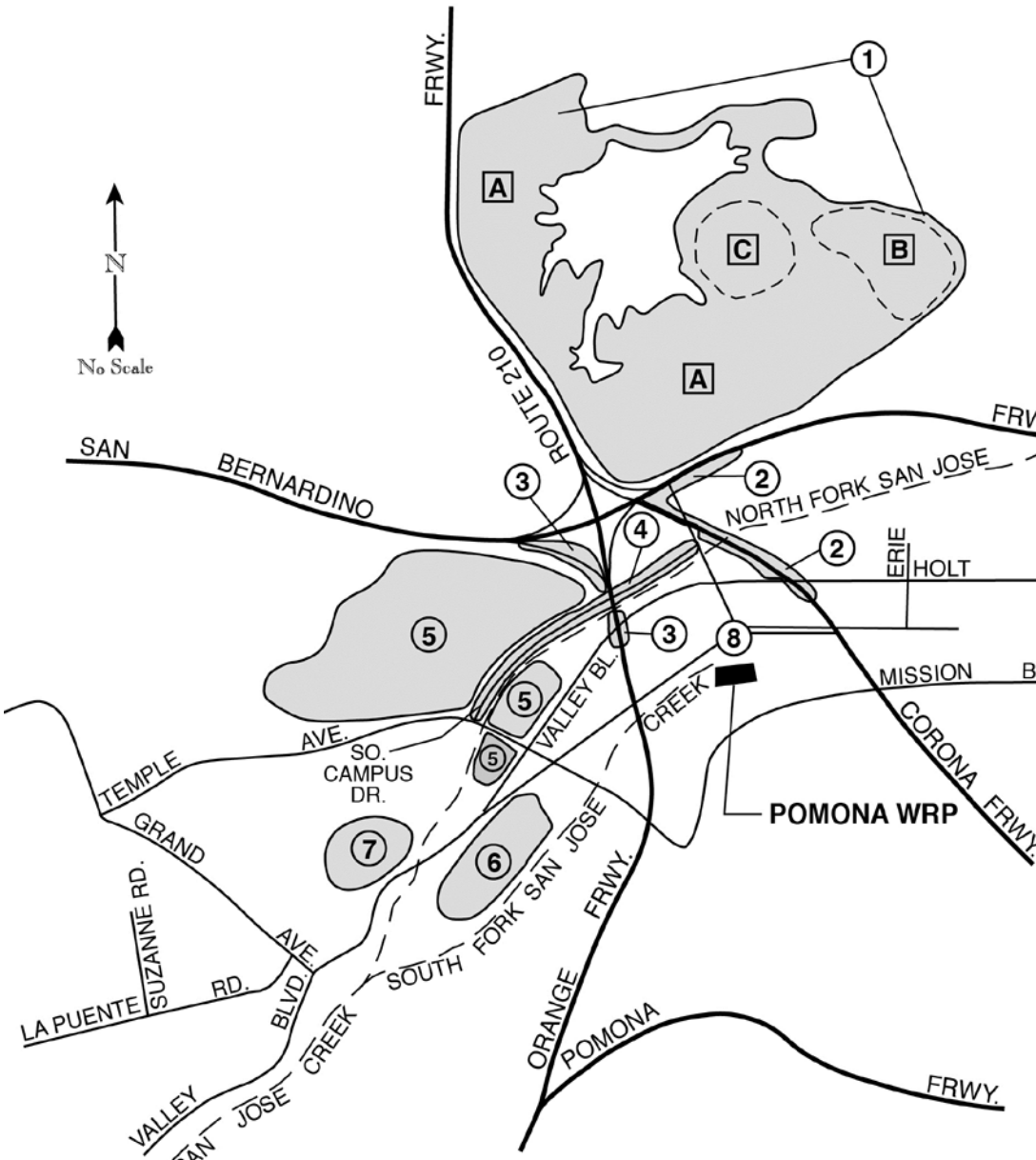
2.4.1 POMONA WATER DEPARTMENT

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 13-14, the PWD delivered 1.670 MGD (1,872 AFY), or 22.7% of the recycled water from the Pomona WRP though 37,000 feet of pipeline, to seven retail customers on 1,427 acres as shown on Figure 11. This was a 10.3% increase over the preceding fiscal year. Table 12 lists the users of the PWD system as of the end of FY 13-14. 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
8 ROBERTSON'S READY MIX

TABLE 12
SUMMARY OF FISCAL YEAR 13-14 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	0.775	870
Lanterman Hospital	Dec 73	100	AG	0	0
South Campus Drive Parkway	Dec 73	8	L	0.018	20
Route 57 and 10 Freeways	May 75	18	L	0.022	24
Bonelli Regional County Park	Apr 77	789	L	0.834	937
Route 71 and 10 Freeways	Apr 81	12	L	0.011	12
Spadra Landfill landscape	Jul 84	53	L	0.333	373
Spadra Landfill dust control	Jul 84	--	I	0.0004	0.4
Cal Poly LandLab	Nov 93	2.5	AG,L	0.016	18
Spadra Gas-to-Energy Plant	Dec 95	--	I	0.054	61
Robertson's Ready-Mix	Oct 09	--	I	0.008	9
TOTALS		**1,482.5**		**2.073**	**2,323**

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 13-14, the PWD sold the recycled water to its customers from its pressure system at a rate of $548.59/AF. This is 70% of its potable water rate of $783.70/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. (Note: Most of this gravity line has been replaced with a 24-inch cement-lined and coated steel pipe.) 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, while the Spadra Gas-to-Energy (SGE) Facility began using recycled water in its cooling towers in December 1995. These sites are shown on Figure 11 and are also listed in Table 12 along with the users of the PWD system.

During FY 13-14, 0.403 MGD (451 AFY), or 5.4% 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 6.4% increase over 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 (now) 24-inch steel 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 13-14. A narrative description of the layout of the WVWD recycled water distribution system is contained in Appendix G.

Four new sites were added to the WVWD distribution system in FY 13-14. In August 2013, the landscaping around the St. Lorenzo Church (747 Meadow Pass Road) was connected. In September 2013, the landscaping around the Lemon Valley LLC (20373 Valley Blvd.) and Foothill Transit (500 Brea Canyon Road) buildings was connected. In March 2014, Sukut Construction LLC began using recycled water for local construction. During FY 13-14, WVWD delivered 1.317 MGD (1,476 AFY), or 17.8% of the recycled water produced at the Pomona WRP, a decrease of 4.2% from the preceding fiscal year. WVWD received its recycled water directly from the Sanitation Districts and retailed it to its 189 customers (which irrigate approximately 715.4 acres) at 53% of its potable water rate of $1,224.04/AF, or $649.04/AF.

2.4.4 Water Replenishment District of Southern California

The remainder of recycled water produced by this plant and not delivered for direct reuse by the three distribution systems described above, is discharged into the south fork of San Jose Creek. San Jose Creek eventually joins with the San Gabriel River, and the effluent from the Pomona WRP is used to recharge the Central Basin aquifer. Beginning July 1, 2013, the revised contract for the sale of recycled water to WRD included deliveries from the Pomona WRP. In FY 13-14, 3.923 MGD (4,396 AFY) was used to replenish the groundwater supply, an 11.2% decrease from the preceding fiscal year and 53.0% of the plant's production.

FIGURE 12
WALNUT VALLEY WATER DISTRICT RECYCLED 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. Catellus
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
104. Parker Canyon Reservoir
105. Lemon Valley LLC
106. St. Lorenzo Church
107. Foothill Transit

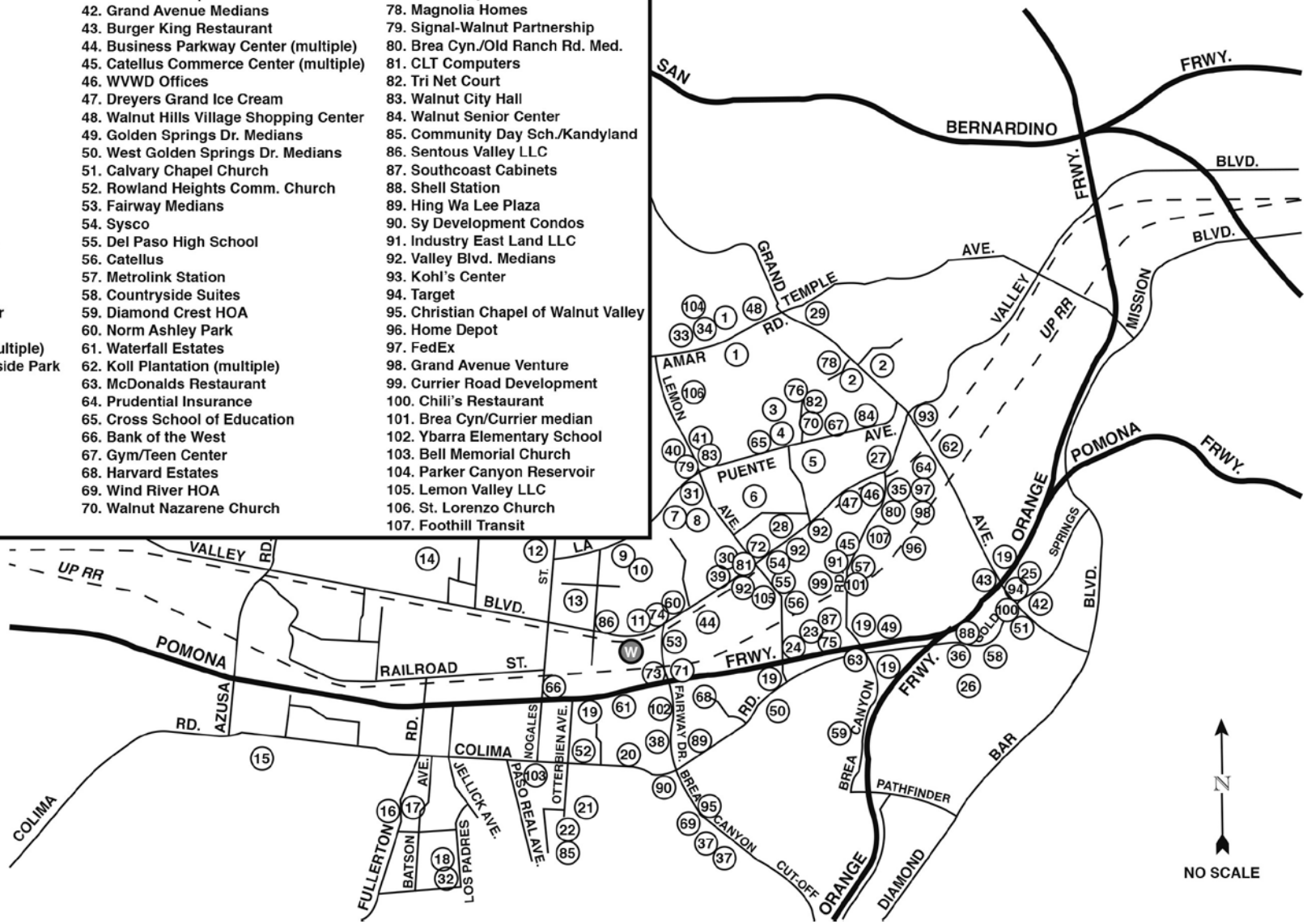


TABLE 13
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
WALNUT VALLEY WATER DISTRICT
(PAGE 1 OF 4)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Suzanne Park (Walnut)	Oct 80	12	L	0.018	21
Suzanne Middle School (Walnut)	May 86	4	AF,L	0.013	15
Walnut High School (Walnut)	May 86	15	AF,L	0.021	23
Vejar School (Walnut)	May 86	3	AF,L	0.011	12
Morris School (Walnut)	May 86	9	AF,L	0.009	11
Snow Creek Park (Walnut)	May 86	7	L	0.010	12
Snow Creek Landscape Maintenance Dist. (Walnut)	May 86	13.5	L	0.039	43
Lemon Creek Park (Walnut)	May 86	5	L	0.007	7
Friendship Park (West Covina)	May 86	6	L	0.007	8
Hollingworth School (West Covina)	May 86	3	AF,L	0.008	9
Lanesboro Park (West Covina)	May 86	2	L	0.006	6
Rincon Middle School (West Covina)	May 86	3	AF,L	0.016	18
Route 57 and 60 Freeways (Rowland Heights)	May 86	19.7	L	0.019	21
Rowland Heights Reg. Co. Park (Rowland Heights)	May 86	11	L	0.016	18
Rowland High School (Rowland Heights)	May 86	9	AF,L	0.017	19
Killian Elementary School (Rowland Heights)	May 86	3	AF,L	0.007	8
Walnut Elementary School (Walnut)	May 86	4	AF,L	0.003	4
WUSD Administrative Service Center (Walnut)	May 86	4	L	0.003	3
Walnut Ranch Park (Walnut)	Jun 86	26	L	0.019	22
Amar Road greenbelt (Walnut)	Jun 86	16	L	0.152	170
Diamond Bar Golf Course (Diamond Bar)	Jul 86	174	L,P	0.200	224
Walnut Ridge Landscape Maintenance Dist. (Walnut)	Mar 87	25.5	L	0.028	32
Morningside Park (Walnut)	Mar 87	4	L	0.006	7
Gateway Corporate Center (Diamond Bar)	Jun 87	45	L	0.055	61
20659 E. Valley Blvd. (Walnut)	May 88	7	O	0	0
Westhoff Elementary School (Walnut)	Sep 88	8	AF,L	0.006	7
Temple Avenue greenbelt (Walnut)	Jan 90	1	L	0.0001	0.1
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	6
WVWD reservoir (Diamond Bar)	May 92	1	L	0.004	4
First Chinese Baptist Church (Walnut)	Dec 92	0.3	L	0.002	2
Burger King restaurant (Diamond Bar)	Oct 93	0.2	L	0	0
Majestic Mgmt., 19850 E. Business Parkway (Walnut)	Nov 93	0.8	L	0.004	4
General Electric, 19705 E. Business Parkway (Walnut)	Nov 93	1.6	L	0.007	8
Rodeo Ridge Estates (Walnut)	Dec 93	6.3	L	0.004	4
Golden Springs Drive medians (Diamond Bar)	Jan 94	1.3	L	0.006	7
Walnut Hills Village Shopping Center (Walnut)	Mar 94	2.4	L	0.004	5
Brookside Equestrian Center (Walnut)	Aug 94	13.6	L	0.009	10
WVWD Office (Walnut)	Oct 94	0.2	L	0.001	1
Cattelus Development (Walnut)	Oct 94	18.9	L	0.012	13
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	0.004	4
Metrolink Station (Industry)	Nov 94	0.6	L	0.003	3
Del Paso High School (Walnut)	Jan 95	3	AF,L	0.004	5
Dow Corning, 20832 Currier Road (Walnut)	Jan 95	0.1	L	0.0002	0.2
Circuit City Headquarters, Currier/Lemon (Walnut)	Apr 95	1.1	L	0.008	8
Sysco Food Service, 20701 Currier Road (Walnut)	Apr 95	2.3	L	0.007	8
Tung Hsin Trading, 20420 E. Bus. Parkway (Walnut)	Apr 95	0.8	L	0.003	3
Amergence Tech. Inc., 20480 E. Bus. Parkway (Walnut)	Apr 95	0.9	L	0.003	3
Dura Freight Lines, 515-525 S. Lemon (Walnut)	Apr 95	0.5	L	0.001	2
S/W-S/E Corner Lemon/Business Parkway (Walnut)	Apr 95	0.2	L	0.005	5
Dura Freight Lines, 20275 Business Parkway (Walnut)	Apr 95	1.3	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 13
SUMMARY OF FISCAL YEAR 13-14 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	0.002	3
Dura Freight Lines, 20405 Bus. Parkway (Walnut)	Apr 95	1	L	0.002	2
Dura Freight Lines, 20595 E. Bus. Parkway (Walnut)	Apr 95	0.8	L	0.003	3
Dura Freight Lines, 20435-45 Bus. Parkway (Walnut)	Apr 95	0.7	L	0.002	2
820 Fairway Drive medians (Industry)	Jun 95	0.1	L	0.001	1
Spencer N Enterprises, Inc., 435 S. Lemon (Walnut)	Jun 95	0.5	L	0.001	2
General Electric, 19805 E Business Parkway (Walnut)	Jun 95	1.1	L	0.004	5
Menlo Logistics, 20002 E. Business Parkway (Walnut)	Jun 95	4	L	0.006	6
General Electric, 20005 E. Business Parkway (Walnut)	Jun 95	6.7	L	0.009	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	0.002	2
Fairway Business Center, 19700 Bus. Parkway (Walnut)	Nov 96	0.4	L	0.002	2
Rowland Heights Christian Church (Rowland Heights)	Feb 97	0.5	L	0.0003	0.3
Viewsonic, 510 Cheryl/455 Brea Canyon (Walnut)	Jul 97	1.8	L	0.012	13
Countryside Suites (Diamond Bar)	Mar 98	1.4	L	0.003	3
Diamond Crest Homeowners Assn. (Diamond Bar)	Oct 98	14	L	0.020	23
Norm Ashley Park (Walnut)	Nov 98	0.2	L	0.001	1
Play Hut, 368 Cheryl Lane (Walnut)	Nov 98	0.8	L	0.003	3
Waterfall Estates (Rowland Heights)	Dec 98	1.2	L	0.003	4
Calvary Chapel (Diamond Bar)	Apr 99	1	L	0.019	22
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	0.035	39
L.A. Fitness Inter., 20801 Golden Springs (Industry)	Sep 99	1.2	L	0.003	3
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	0.002	3
Nu-Health Products, 20875-85-95 Currier Rd. (Walnut)	Oct 99	0.1	L	0	0
Lemon Avenue medians (Industry)	Dec 99	0.1	L	0.0004	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	0.003	3
Markwins Inter. Corp., 22067 Ferraro (Industry)	Nov 00	1.9	L	0.004	5
Lee Wang LLC, 21901 Ferraro Parkway (Industry)	Nov 00	2	L	0.006	7
Sun Yin USA, 280 Maclin Court (Industry)	Nov 00	0.8	L	0.001	1
SL Investment Group LLC, 218 Maclin Ct. (Industry)	Nov 00	1.5	L	0.004	5
Morrow Meadows, 231 Benton Court (Industry)	Apr 01	0.9	L	0.003	4
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	0.0002	0.3
Gym/Teen Center (Walnut)	Sep 01	0.6	L	0.002	2
Yellow Box Corp., 19835 Walnut Drive (Walnut)	Dec 01	0.3	L	0.0005	1
Harvard Estates (Rowland Heights)	Dec 01	2	L	0.003	4
Walnut Nazarene Church (Walnut)	Feb 02	0.8	L	0.0004	0.5
Majestic Mgmt., 168-188 Brea Canyon Road (Walnut)	Apr 02	0.6	L	0.002	2
Synnex, 108-118 Brea Canyon Road (Walnut)	Apr 02	0.7	L	0.002	3
Port Logistics, 108-288 Mayo Drive (Walnut)	Apr 02	0.1	L	0.005	6
Holiday Inn Express (Walnut)	May 02	0.4	L	0.003	3
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 Drive (Industry)	Sep 02	0.6	L	0.002	3
Everbright Management, 1169 Fairway Drive (Industry)	Sep 02	0.2	L	0.001	1
Kelly Paper, 228 Brea Canyon Road (Walnut)	Sep 02	1.2	L	0.0005	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 13
SUMMARY OF FISCAL YEAR 13-14 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	0.002	2
Latter Days Saints Church (Walnut)	Oct 02	0.9	L	0.003	4
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	0.004	5
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	0.002	2
San Malone Enterprises, 19865 Harrison (Industry)	Aug 03	0.3	L	0.001	1
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	0.006	7
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	0.005	6
NP 21301 Ferraro Parkway, 21301 Ferraro (Industry)	Sep 03	0.8	L	0.004	4
568 TriNet Court (Walnut)	Oct 03	0.3	L	0.0003	0.4
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 Road (Walnut)	Dec 03	2.6	L	0.006	7
Young Hoon Cho, 1709 Nogales St. (Rowland Heights)	Mar 04	0.1	L	0.0002	0.2
Shell Station, 21103 Golden Springs Dr. (Diamond Bar)	Mar 04	0.1	L	0.0002	0.3
Ferraro/Grand East ramp (Industry)	Apr 04	3.8	L	0.007	8
Hing Wa Lee Plaza, 1569 Fairway Drive (Walnut)	May 04	0.1	L	0.0004	0.5
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	0.005	6
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	0.0003	0.3
Community Day School (Walnut)	Nov 04	0.1	AF,L	0.0002	0.2
Majestic Mgmt., 21438 Baker Parkway (Walnut)	Jan 05	0.1	L	0.001	1
Sy Develop. condos, 20118-20138 Colima (Walnut)	Jun 05	0.1	L	0.0001	0.1
N/E corner Cheryl Lane/Baker Parkway (Industry)	Aug 05	3.3	L	0.014	15
Jakk's Pacific, Inc. 21733-21749 Baker (Industry)	Aug 05	1.2	L	0.004	5
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	0
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	6
Charles Hailong Cui, 350 Cheryl Lane (Walnut)	Apr 06	0.7	L	0.006	6
Fairway median@ Brea Canyon (Walnut)	Jun 06	0.3	L	0.001	1
Grand Avenue Crossing (Industry)	Jul 06	18.5	L	0.038	42
22002 Valley Blvd. (Industry)	Jul 06	1.6	L	0.003	4
Christian Chapel of Walnut Valley (Walnut)	Aug 06	2.2	L	0.007	8
Target Store T-2179, 747 Grand Ave. (Walnut)	Sep 06	3.9	L	0.009	11
Leg Avenue, 19601 E. Walnut Drive (Walnut)	Oct 06	0.5	L	0.004	4
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	0.011	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 13-14 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)
FedEx Ground, 200 Old Ranch Road (Walnut)	May 07	28	L	0.011	13
Currier Road Devel. Inc., 20819 Currier Rd. (Walnut)	May 07	0.3	L	0.001	1
Williams-Sonoma, 21700 Baker Parkway (Industry)	Aug 07	2	L	0.004	4
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	3
Grand Avenue/Baker Parkway medians (Industry)	May 08	6.7	L	0.012	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	0.0002	0.2
Golden Springs Plaza, 20657 Golden Sprgs (Dia. Bar)	Aug 08	0.4	L	0.001	1
Chili's Restaurant, Golden Springs Dr. (Diamond Bar)	Sep 08	0.01	L	0.001	1
Majestic Management, 21808 Garcia Lane (Industry)	Sep 08	0.5	L	0.002	2
Majestic Management, 21858 Garcia Lane (Industry)	Sep 08	0.4	L	0.001	2
Majestic Management, 21912 Garcia Lane (Industry)	Sep 08	0.3	L	0.001	1
Majestic Management, 21760-21788 Garcia (Industry)	Sep 08	0.4	L	0.002	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	0.0001	0.2
Brea Canyon Road/Currier Road median (Walnut)	Feb 09	2	L	0.008	9
Cardinal Capital Partners, Currier/Lemon (Walnut)	Mar 09	2.5	L	0	0
Family Property Holdings, 20888 Amar Road (Walnut)	May 09	0.04	L	0.001	1
KW Global Inc., 293 Brea Canyon Drive (Walnut)	May 09	0.3	L	0.001	1
Light of America, Inc., 20722 Currier Road (Walnut)	Sep 09	0.1	L	0.0001	0.1
Ybarra Elementary School (Rowland Heights)	Sep 09	5.6	AF,L	0.008	9
Donald Miller, 19803 Valley (Walnut)	Sep 10	0.1	L	0.0002	0.2
Bell Memorial Church, 1747 Nogales (Rowland Hts.)	Dec 10	0.3	L	0.001	1
Majestic Realty, 179 S. Grand Ave. (Walnut)	Dec 11	2.5	L	0.005	5
WVWD Parker Canyon Reservoir (Walnut)	May 12	3.5	L	0.007	8
St. Lorenzo Church, 747 Meadow Pass Rd. (Walnut)	Aug 13	0.3	L	0.017	19
Lemon Valley LLC, 20373 Valley Blvd. (Walnut)	Sep 13	0.1	L	0.001	1
Foothill Transit, 500 Brea Canyon Road (Walnut)	Sep 13	0.2	L	0.001	2
Sukut Construction (Walnut)	Mar 14	--	I	0.007	8
TOTALS		**715.4**		**1.317**	**1,476**

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.

2.5 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 13-14, Stages I & II (east side) produced 38.3 MGD (42,912 AFY) and Stage III (west side) produced 21.13 MGD (23,677 AFY), at O&M costs of $305/AF and $258/AF, respectively. The entire facility, therefore, produced a total of 59.43 MGD (66,589 AFY) of coagulated, filtered, disinfected tertiary recycled water (15.8% of the effluent produced in the JOS), an 11.5% decrease from the preceding fiscal year.

Recycled water quality from both the east and west sides of the plant for FY 13-14 is presented in Tables B-4 and B-5, respectively, of Appendix B. Of the total amount of recycled water produced, 45.430 MGD (50,901 AFY), or 76.4% of the plant's combined production, was actively reused, a 2.5% decrease from the preceding fiscal year.

SAN JOSE CREEK WRP FACTS	
Plant capacity:	100 MGD
Water produced:	59.43 MGD 66,589 AFY 11.5% FY decrease
FY13-14 O&M:	$305/AF (east) $258/AF (west)
Water reused:	45.430 MGD 50,901 AFY 2.5% FY decrease 76.4% of production
Delivery systems:	7 511,570 ft. of pipe
No. of reuse sites:	166 3,528.7 acres

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 166 sites (not including recharge) shown on 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 Order Nos. 91-100 and R4-2009-0048 for groundwater replenishment.

2.5.1 WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

The majority (86.4%) of recycled water actively used from the San Jose Creek WRP goes to recharge the Central Basin groundwater aquifer, which in FY 13-14 was 39.243 MGD (43,974 AFY), a 5.0% decrease from the preceding fiscal year and 66.0% of the recycled water produced by this plant. Of the total amount of recycled water delivered from the San Jose Creek WRP, 6.99 MGD (7,830 AFY), or 17.8%, went to the Rio Hondo Spreading Grounds and 32.26 MGD (36,144 AFY), or 82.2%, went to the San Gabriel Coastal Spreading Grounds. For the first time in recent memory, none of the recycled water delivered was bypassed around the spreading grounds and lost to the ocean during storm episodes. 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% of the total water recharged may be comprised of recycled water (with maximums of 60,000 AFY and 50% recycled water 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 average recycled water contribution of 35%. This permit modification was supported by California Department of Public Health (now the Division of Drinking Water, or DDW, under the State Water Resources

FIGURE 13
SAN JOSE CREEK WRP REUSE SITES

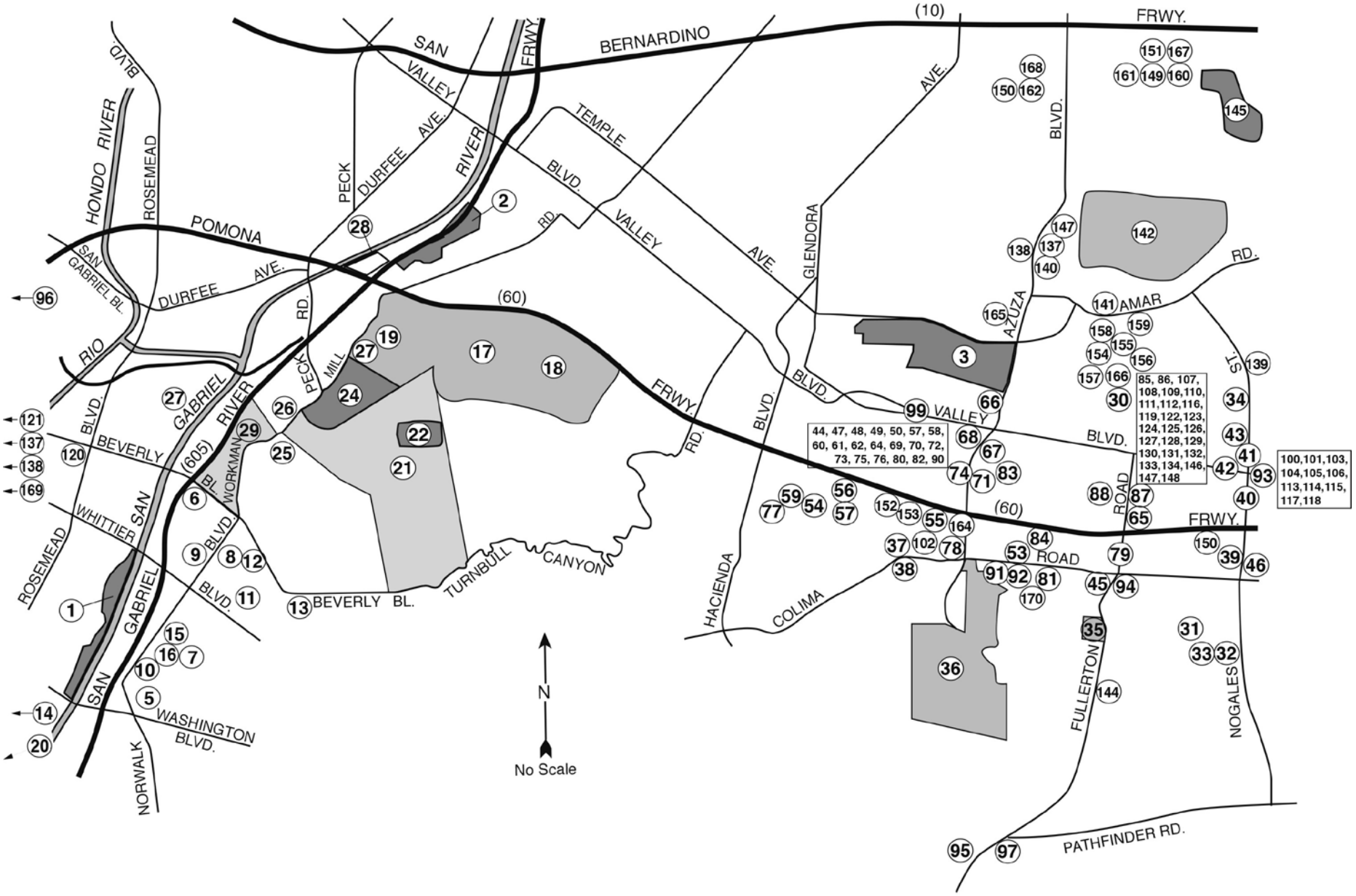


TABLE 14
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
SAN JOSE CREEK WRP
(PAGE 1 OF 4)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Water Replenishment District (1)	Jun 71	--	R	39.243	43,974
California Country Club (Industry) (2)	Jun 78	120	L,P	0.476	533
Industry Hills Recreation Area (Industry) (3)	Aug 83	600	L,P	0.964	1,080
Field, S/W corner Norwalk/Telegraph (S.F. Spgs.) (4)	Aug 94	5.2	L	0.015	17
Washington Elementary School (Whittier) (5)	Sep 94	5	AF,L	0.009	10
605 Freeway at Beverly (Whittier) (6)	Sep 94	30	L	0.030	34
Sorenson Elementary School (Whittier) (7)	Oct 94	4	AF,L	0.010	11
Palm Park West (Whittier) (8)	Nov 94	5	L	0.012	13
Orange Grove School (Whittier) (9)	Apr 95	6.6	AF,L	0.012	14
Katherine Edwards Middle School (Whittier) (10)	Sep 95	19	AF,L	0.029	32
Longfellow Elementary School (Whittier) (11)	Sep 95	4.5	AF,L	0.008	9
Walter Dexter Middle School (Whittier) (12)	Sep 95	15.5	AF,L	0.012	14
Founders Memorial Park (Whittier) (13)	Jan 96	4	L	0.022	24
Salt Lake Municipal Park (Huntington Park) (14)	Apr 96	20.9	L	0.007	8
Sorenson Park (Whittier) (15)	May 96	10.7	L	0.019	21
Sorenson Library (Whittier) (16)	May 96	0.4	L	0	0
Puente Hills Landfill irrigation (Industry) (17)	Nov 97	320	L	1.010	1,131
Puente Hills Landfill dust control (Industry) (18)	Nov 97	130	I	0.102	114
Puente Hills Gas-to-Energy Facility (Industry) (19)	Nov 97	--	I	0.604	677
Lugo Park (Cudahy) (20)	Apr 98	7	L	0.007	8
Rose Hills Memorial Park – upper area (Whittier) (21)	Jun 98	298	L	0.568	636
River Ridge Golf Course (Pico Rivera) (23)	Jul 02	21.3	L	0.036	40
Rio Hondo College (Whittier) (24)	Jun 03	85	AF,L	0.025	28
Mill Elementary School (Whittier) (25)	Jun 03	15	AF,L	0.008	9
Gateway Pointe (Whittier) (26)	Jan 05	8	L	0.023	26
Puente Hills Materials Recovery Facility (Industry) (27)	Feb 05	2.4	L	0.022	24
LA Sanchez Nursery (Industry) (28)	Apr 06	5	O	0.009	10
Rose Hills Memorial Park – lower area (Whittier) (29)	Aug 06	275	L	0.649	728
Sunshine Park (L.A. County) (30)	Jul 09 (May 86)	4	L	0.014	16
Rowland Elementary School (Rowland Hts.) (31)	Jul 09 (May 86)	3	AF,L	0.009	10
Southland Schools (Rowland Heights) (32)	Jul 09 (May 86)	4	AF,L	0.004	4
Farjardo Park (Rowland Heights) (33)	Jul 09 (May 86)	4	L	0.010	11
Nogales High School (L.A. County) (34)	Jul 09 (Jun 86)	11	AF,L	0.033	37
Queen of Heaven Cemetery (Rowland Hts.) (35)	Jul 09 (Jun 86)	35	L	0.072	81
Schabarum Regional County Park (L.A. Co.) (36)	Jul 09 (Sep 86)	233	L	0.115	129
Pepperbrook Park (Hacienda Heights) (37)	Jul 09	4.4	L	0.010	11
Countrywood Park (Hacienda Heights) (38)	Jul 09	5.4	L	0.012	13
Rowland Heights Golf Center (Rowland Heights) (39)	Jul 09	8	L	0.014	15
Medians at 755 Nogales (Industry) (40)	Jul 09	0.1	L	0.001	1
Nogales Med. Plaza, 4115-½ Nogales (W. Covina) (41)	Jul 09	0.1	L	0.006	7
Medians at 2654-½ Valley Blvd. (West Covina) (42)	Jul 09	0.2	L	0.0003	0.4
Bu Sha Temple, 4111 Nogales (West Covina) (43)	Jul 09	0.5	L	0.001	1
GMP Products, 788 Phillips (Industry) (44)	Jul 09	0.1	L	0.003	3
JJ Plaza, 18253 Colima Road (Rowland Heights) (45)	Jul 09	0.1	L	0.001	1
New World RTCI-LP, 18958 Daisetta (Row. Hts.) (46)	Jul 09	0.1	L	0.0001	0.1
Battery Technology, 16651 Johnson Dr. (Industry) (47)	Jul 09	0.1	L	0.0001	0.1
Super Max Corp., 16685 Johnson Dr. (Industry) (48)	Jul 09	0.1	L	0.001	1
Ancillary Provider 16664 Johnson Dr. (Industry) (49)	Jul 09	0.1	L	0.001	1
Ancillary Provider 16666 Johnson Dr. (Industry) (50)	Jul 09	0.2	L	0.001	1
Pan American, 16610 Gale Ave. (Industry) (51)	Jul 09	0.2	L	0.001	1
Blue Pacific, 1354 Marion Ct. (Industry) (52)	Jul 09	0.2	L	0.002	2
Romano's Macaroni Grill, 17603 Colima (R. Hts.) (53)	Jul 09	0.1	L	0.004	5
Acosta Growers, 16412 Wedgeworth (Industry) (54)	Jul 09	5	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 14
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
SAN JOSE CREEK WRP
(PAGE 2 OF 4)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Wedgeworth Elementary School (Hacienda Hts.) (55)	Aug 09	2.5	AF,L	0.005	5
Wilson High School (Hacienda Heights) (56)	Aug 09	18.3	AF,L	0.036	40
Bixby Elementary School (Hacienda Heights) (57)	Sep 09	6.1	AF,L	0.016	17
Jade Fashion, 1350 Bixby Dr. (Industry) (58)	Sep 09	0.1	L	0.001	1
Sunshine Growers, 16411 Wedgeworth (Industry) (59)	Sep 09	4	O	0.007	8
Seibon International, 1215 Bixby Dr. (Industry) (60)	Dec 09	0.1	L	0.001	2
Laido International, 16710-12 Johnson (Industry) (61)	Dec 09	0.1	L	0.001	1
Bolt Products, 16725 Johnson Dr. (Industry) (62)	Dec 09	0.1	L	0.001	1
Ily Enterprise, 783 Phillips (Industry) (63)	Jan 10	0.1	L	0.002	2
Superior Profiles, 1325 Bixby Dr. (Industry) (64)	Jan 10	0.2	L	0.001	1
60 Freeway, Countrywood & Fullerton (Industry) (65)	Jan 10	5	L	0.005	6
Camacho Strawberries (Industry) (66)	Jan 10	3	O	0	0
Harmoni International Spice, 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	0.003	4
So. Cal. Air Condition, 16950 Chestnut (Industry) (69)	Mar 10	2	L	0.002	2
USACD, 17101 Chestnut (Industry) (70)	Mar 10	0.3	L	0.001	2
Azusa Blvd. medians (Industry) (71)	Mar 10	0.2	L	0.0005	1
Acosta Growers, 17101 Chestnut (Industry) (72)	Mar 10	2.4	O	0	0
L.A. Co. ISD building, 16610 Chestnut (Industry) (73)	Apr 10	0.5	L	0.002	2
Azusa Property Co., 885 Azusa (Industry) (74)	Apr 10	0.2	L	0.001	2
Golden West Footwear, 16750 Chestnut (Industry) (75)	Apr 10	0.3	L	0.001	2
Teledyne Instruments, 16830 Chestnut (Industry) (76)	Apr 10	0.4	L	0.003	3
Medians, 18927 Daisetta St. (Rowland Heights) (77)	Apr 10	0.2	L	0.0004	0.4
Colima Road medians (L.A. County) (78)	Apr 10	0.1	L	0.001	1
Medians, 1442 Fullerton Road (Industry) (79)	Apr 10	0.3	L	0.0001	0.1
Teledyne Picco, 16800 Chestnut (Industry) (80)	May 10	0.4	L	0.001	1
Melody Tsai Nursery, 18002 Colima (Rowl. Hts.) (81)	May 10	1.3	O	0.001	1
East Group Prop., 16700 Chestnut (Industry) (82)	Jun 10	0.6	L	0.003	3
Deyce USA, 883 Azusa Ave. (Industry) (83)	Jun 10	0.1	L	0.001	1
New Age Kaleidoscope, 7 Colima Road (Industry) (84)	Jun 10	0.6	L	0.004	5
Min Maw Intl. Inc., 18350 San Jose Ave. (Industry) (85)	Jun 10	0.7	L	0.004	4
Hot Topic, 18305 San Jose Ave. (Industry) (86)	Jul 10	0.6	L	0.005	6
FedEx, 1081 Fullerton Road (Industry) (87)	Jul 10	0.6	L	0.004	5
Port Logistics Group, 18215 Rowland St. (Industry) (88)	Sep 10	0.6	L	0.004	4
New Age Kaleidoscope, 5 Stoner Creek (Industry) (89)	Oct 10	1.4	L	0.009	10
Perrin Manufacturing, 1020 Bixby Dr. (Industry) (90)	Oct 10	0.1	L	0.001	1
Centro Watt Operating, 17518A Colima (Industry) (91)	Oct 10	0.4	L	0.003	3
Centro Watt Operating, 17414 Colima (Industry) (92)	Oct 10	0.5	L	0.003	4
717 Nogales LLC, 717 Nogales St. (Industry) (93)	Oct 10	0.5	L	0.002	3
Walgreens, 18308 Colima Road (Industry) (94)	Dec 10	0.1	L	0.001	1
RWD Office, 3021 S. Fullerton Road (Industry) (95)	Dec 10	0.3	L	0.001	1
Pathfinder Park (Rowland Heights) (97)	May 11	29	L	0.031	35
USGVMWD site, 401 Nogales St. (Industry) (98)	May 11	0.5	L	0.001	2
Quest Nutrition, 18551 Arenth Ave. (Industry) (100)	May 11	0.7	L	0.004	4
717 Nogales LLC, 18961 Arenth Ave. (Industry) (101)	May 11	0.5	L	0.003	3
Kimco Realty, 17100 Colima Road (Industry) (102)	May 11	3	L	0.010	11
Acme Trading Group, 18501 Arenth (Industry) (103)	May 11	0.9	L	0.006	7
Hot Topic, 18501 San Jose Ave. (Industry) (104)	May 11	0.6	L	0.002	3
BMS Motorsports, Inc., 18701 Arenth (Industry) (105)	May 11	0.4	L	0.002	3
YHS Trading, 755 Epperson Dr. (Industry) (106)	Jul 11	0.1	L	0.002	2
TriVantage LLC, 745 Epperson Dr. (Industry) (107)	Jul 11	0.1	L	0.002	3
Siegfried & Parsifal Inc., 18689 Arenth (Industry) (108)	Aug 11	0.4	L	0.002	3
HT Window Fashions, 770 Epperson (Industry) (109)	Aug 11	0.1	L	0.002	2
HT Development, 780 Epperson Dr. (Industry) (110)	Aug 11	0.1	L	0.003	4
HD Technology, 738 Epperson Dr. (Industry) (111)	Aug 11	0.2	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 14
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
SAN JOSE CREEK WRP
(PAGE 3 OF 4)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Walnut Creek Energy Park, 911 Bixby (Industry) (99)	Aug 11	--	I	0.180	202
Guardian Life Insurance, 710 Epperson (Industry) (112)	Sep 11	0.2	L	0.004	4
Valor Communication, 18071 Arenth (Industry) (113)	Sep 11	0.1	L	0.004	4
K-1 Printing, 17989 Arenth Ave. (Industry) (114)	Oct 11	0.2	L	0.001	1
K-1 Printing, 17979 Arenth Ave. (Industry) (115)	Oct 11	0.2	L	0.001	1
Private Label PC Inc., 748 Epperson (Industry) (116)	Nov 11	0.2	L	0.001	1
Penske Truck Leasing, 18305 Arenth (Industry) (117)	Nov 11	0.6	L	0.002	3
Schurr High School (Montebello) (96)	Nov 11	11	AF,L	0.029	32
Commercial Cooling, 17855 Arenth (Industry) (118)	Dec 11	0.4	L	0.001	1
Forever Link, 18738 San Jose Ave. (Industry) (119)	Dec 11	0.4	L	0.003	3
Beverly Blvd. medians (Pico Rivera) (120)	Jan 12	1	L	0.002	2
Rio Hondo Park (Pico Rivera) (121)	Jan 12	8	L	0.040	44
Brook Furniture, 18960 San Jose Ave. (Industry) (122)	Jan 12	0.4	L	0.001	1
Twin Tiger Footwear, 18901 Railroad (Industry) (123)	Feb 12	0.4	L	0.001	2
CWCI Insulation, 18825 Railroad St. (Industry) (124)	Feb 12	0.2	L	0.001	1
Hot Topic, 18385 San Jose Ave. (Industry) (125)	Feb 12	0.8	L	0.005	5
Ko Amex, 18965 San Jose Ave. (Industry) (126)	Feb 12	0.5	L	0.002	2
Ferguson Fire, 18825 San Jose Ave. (Industry) (127)	Feb 12	0.3	L	0.002	2
MA Labs Inc., 18755 San Jose Ave. (Industry) (128)	Feb 12	0.4	L	0.002	3
Majestic Management, 18691 San Jose (Industry)(129)	Mar 12	0.3	L	0.003	3
Majestic Management, 18601 San Jose (Industry) (130)	Mar 12	0.6	L	0.004	4
Hot Topic, 18501 San Jose Ave. (Industry) (131)	Mar 12	0.6	L	0.002	3
Extra Express, 18591 San Jose Ave. (Industry) (132)	Mar 12	0.6	L	0.003	4
Shoe Magnate Inc., 18560 San Jose (Industry) (133)	Mar 12	0.4	L	0.001	2
Pinky Footware Shoes, 18600 San Jose (Industry) (134)	Mar 12	0.8	L	0.004	4
La Merced Elementary School (Montebello) (135)	Jun 12	10	AF,L	0.027	30
Montebello Gardens Elementary (Pico Rivera) (136)	Jun 12	1	AF,L	0.00001	0.01
Home Depot, 2320 Azusa Ave. (West Covina) (137)	Jul 12	0.2	L	0.001	1
The Heights Shopping Center (West Covina) (138)	Jul 12	12.5	L	0.029	32
Nogales Ave. medians (West Covina) (139)	Jul 12	0.6	L	0.002	3
Azusa Ave. medians (West Covina) (140)	Jul 12	3.1	L	0.009	10
Amar Road medians (West Covina) (141)	Jul 12	2.1	L	0.004	5
BKK Landfill (West Covina) (142)	Jul 12	220	L	0.140	157
South Hills Country Club (West Covina) (143)	Aug 12	100	L	0.285	319
Medians, 2357 Fullerton Road (L.A. County) (144)	Aug 12	0.4	L	0.001	1
McDonalds, 2623 Valley Blvd. (Industry) (145)	Sep 12	0.2	L	0.001	1
Whitewave Foods, 18275 Arenth Ave. (Industry) (146)	Oct 12	2.6	L	0.010	12
Big League Dreams (West Covina) (147)	Oct 12	21	AF,L	0.050	56
Pearl of the East, 18888 Labin Ct. (Industry) (148)	Feb 13	0.5	L	0.003	3
Walnut Creek Energy Park, 911 Bixby (Industry) (99)	Apr 13	0.3	L	0.002	2
J.M. Farming (Whittier) (22)	Apr 13	107	AG	0.081	90
Cortez Elementary School (West Covina) (149)	Aug 13	6.2	AF,L	0.015	17
Cameron Elementary School (West Covina) (150)	Aug 13	3.9	AF,L	0.010	12
Vine Elementary School (West Covina) (151)	Aug 13	3.8	AF,L	0.011	13
Countrywood Park I, (Rowland Heights) (152)	Nov 13	17	L	0.007	7
Countrywood Park II, (Rowland Heights) (153)	Nov 13	15	L	0.005	5
Shadow Oak Paseo A (West Covina) (154)	Jan 14	8.1	L	0.011	12
Shadow Oak Paseo B (West Covina) (155)	Jan 14	6.9	L	0.007	8
Shadow Oak Paseo C (West Covina) (156)	Jan 14	1.6	L	0.002	2
Shadow Oak Paseo D (West Covina) (157)	Jan 14	1.8	L	0.004	4
Shadow Oak Paseo F (West Covina) (158)	Jan 14	1.5	L	0.001	1
Shadow Oak Paseo G (West Covina) (159)	Jan 14	8.1	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 14
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
SAN JOSE CREEK WRP
(PAGE 4 OF 4)

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Hollencrest Middle School (West Covina) (160)	Jan 14	10.8	AF,L	0.011	12
Merced Elementary School (West Covina) (161)	Jan 14	7.6	AF,L	0.008	9
West Covina High School (West Covina) (162)	Jan 14	9.7	AF,L	0.013	15
Woodgrove Park (West Covina) (163)	Feb 14	10	L	0.008	9
Hacienda Heights Little League (Hacienda Hts.) (164)	Mar 14	4	AF	0.001	1
Rimgrove Park (West Covina) (165)	Jun 14	7.1	L	0.005	5
Shadow Park Center (West Covina) (166)	Jun 14	9.6	L	0.0003	0.3
TOTALS		**3,528.7**		**45.430**	**50,907**

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.

Control Board) staff and was adopted by the LARWQCB in April 2009 using a 5-year average and then readopted in May 2013 using a more versatile 10-year running average that is more closely aligned with the region's cyclical rainfall pattern. Assuming there is sufficient dilution water, these changes would allow approximately 5,000-10,000 AFY more 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 13,500 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. In addition, construction was completed in 2012 on an expansion of the City's pump station at San Jose Creek WRP East which included the replacement of the existing three pumps, addition of a fourth pump, installation of a larger surge tank, new control panels, and a new, separate power supply from SCE.

During FY 13-14, 0.961 MGD (1,080 AFY), or 1.6% of recycled water produced at this plant, was delivered through a total of 44,350 feet of pipeline and used at this site, a 7.4% increase over 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 13-14, RWD connected three new reuse sites to its distribution system: In November 2013, the landscaping around the Countrywood Park I and II housing developments was connected. In March 2014, the Hacienda Heights Little League field was connected.

During FY 13-14, RWD delivered 0.785 MGD (880 AFY), or 1.3% of the recycled water produced at the San Jose Creek WRP to 110 sites serving 913.4 acres listed in Table 14 and shown on Figure 13. This was an 82.2% increase over the preceding fiscal year. RWD purchased the recycled water from the City of Industry, retailing it at 58% of its potable rate of $1,219.68/AF (for "Zone I" elevation), or $701.32/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 13-14, 0.476 MGD (533 AFY), or 0.8% of recycled water produced at this plant, was delivered to this site, an increase of 15.9% over 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 13-14, 0.009 MGD (10 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 exactly the same as 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 $719.70/AF, a 42% discount from its corresponding potable water rate of $1,236.54/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 20 sites shown on 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 on Figure 10.

During FY 13-14, CBMWD delivered 0.323 MGD (362 AFY), or 0.5% of the recycled water produced at this plant, through 290,400 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 191 acres at the 20 sites. This represents a 13.1% increase over the preceding fiscal year. CBMWD has constructed the delivery facilities right up to the end users; however, the local retail water purveyors are the entities actually supplying the recycled water. No new sites were connected to the Rio Hondo recycled water distribution system during FY 13-14.

In FY 13-14, CBMWD wholesaled the recycled water to its customers, the retail water purveyors, on a monthly use, tiered rate schedule ($540 for the first 50 AF, and $492 for anything above 50 AF). This is between 47% and 52% of the rate of $1,038/AF it charges for Tier 1 non-interruptible potable water supplied by MWD, and between 42% and 45% of the rate of $1,180/AF it charges for Tier 2 supplies. Recycled water delivered outside of CBMWD's service area was subject to a $21-22/AF surcharge on each of the two tiers. Recycled water deliveries to the Malburg power plant in Vernon received an industrial use rate ($390 for the first 25 AF, $363 for the next 25 AF, $336 for the next 50 AF, and $309 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 on 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 (i.e., "stranded assets").

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 13-14, the Puente Hills/Rose Hills distribution system delivered 2.385 MGD (2,673 AFY), or 4.0% of the recycled water produced at this plant, through 8,900 feet of pipeline to six users on approximately 857 acres, an increase of 9.8% over 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. In April 2012, J.M. Farming returned to leased land at Rose Hills and began using recycled water for the irrigation of strawberries.

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 latter 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 on 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, terminating approximately 50 feet south of the main entrance of Rio Hondo College in a 10-inch service connection to the college.

During FY 13-14, the USGVMWD distribution system delivered 0.705 MGD (790 AFY), or 1.2% of the recycled water produced at this plant, through 11,020 feet of pipeline to four users on 383 acres, an increase of 10.8% over 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 $978.56/AF, or 79% of its corresponding potable water rate of $1,236.54/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.

2.5.9 Upper San Gabriel Valley Municipal Water District (Phase II-B Extension)

The City of Industry has long planned to extend its recycled water distribution system, since the demand at its 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, the City of Industry, Suburban Water Systems (SWS, which had purchased the City of West Covina's water system), the former BKK Landfill, RWD, and WVWD signed an MOU to develop a regional distribution system. A revised contract between the Sanitation Districts and City of Industry included additional quantities of recycled water was executed on September 27, 2000. The "Phase II-B Extension" off the City of Industry transmission line was developed by USGVMWD to serve SWS, BKK Landfill and, perhaps in the future, WVWD.

USGVMWD's distribution system was built 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 Industry'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. As part of this package, a new reservoir was completed in December 2011. The second package pipeline was completed in August 2011 and continues north along Azusa Avenue to the South Hills Country Club.

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 was completed in winter 2012, with deliveries of recycled water beginning in July 2012. In FY 13-14, SWS connected 15 new reuse sites to its distribution system: In August 2013, Cortez, Cameron, and Vine Elementary schools were connected. In January 2014, the landscaping along Shadow Oak Paseos A (Stacey Ct./Sonya Ct.), B (Sylvia St./Rebecca St./Lindsey Ct.), C (Kimberly Dr.), D (Veronica Ave.), F (Rachel Ave.), and G (Woodgrove/Amar to Art), Merced Elementary School, Hollencrest Middle School, and West Covina High School were connected. In February 2014, Woodgrove Park was connected. In June 2014, Rimgrove Park and Shadow Park Center were connected.

During FY 13-14, the USGVMWD distribution system delivered 0.632 MGD (708 AFY), or 1.1% of the recycled water produced at this plant, through 71,360 feet of pipeline to 23 users on 459.3 acres. SWS, the retail purveyor for this system, resold the recycled water to its customers at its tariff rates of $882.09/AF to $948.74/AF (depending on pressure zone), or 85% of its corresponding potable water rates of $1,037.60/AF to $1,116.44/AF.

2.6 Whittier Narrows WRP

This treatment facility, located at 301 North Rosemead Boulevard, El Monte, CA 91733, was completed in 1962 as the first of the Sanitation Districts' activated sludge plants, with a design capacity of 15 MGD. Of the 8.60 MGD (9,639 AFY) of coagulated, filtered, disinfected tertiary recycled water produced during FY 13-14 (2.3% of the effluent produced in the JOS) at an O&M cost of $452/AF, 8.487 MGD (9,510 AFY) was actively reused. The amount of recycled water produced was an 11.3% increase over the preceding fiscal year, while the amount reused was an 11.6% increase.

Recycled water quality for FY 13-14 is presented in Table B-6 of Appendix B. Recycled water from this plant is used at eighteen 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 Order Nos. 91-100 and R4-2009-0048 for groundwater replenishment (see Section 2.5.1 for a discussion on the amended groundwater recharge permit).

WHITTIER NARROWS WRP FACTS	
Plant capacity:	15 MGD
Water produced:	8.60 MGD 9,639 AFY 11.3% FY increase
FY13-14 O&M:	$452/AF
Water reused:	8.487 MGD 9,510 AFY 11.6% FY increase 98.7% of production
Delivery systems:	1 18,900 ft. of pipe
No. of reuse sites:	18 969.2 acres

2.6.1 Water Replenishment District of Southern California

The majority (81.5%) of recycled water actively used from this plant went to recharge the Central Basin aquifer. In FY 13-14, 6.918 MGD (7,753 AFY) was used to replenish the groundwater supply, a 12.8% increase over the preceding fiscal year and 80.4% of the plant's production.

Of the total amount of recycled water delivered from the Whittier Narrows WRP to recharge the Central Basin aquifer, 5.481 MGD (6,141 AFY), or 79.2%, went to the Rio Hondo Spreading Grounds and 0.696 MGD (1,611 AFY), or 20.8%, went to the San Gabriel Coastal Spreading Grounds. For the first time in recent memory, none of the recycled water delivered was bypassed around the spreading grounds and lost to the ocean. 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.

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

This project (designated Phase II-A by USGVMWD) began deliveries of recycled water to the Los Angeles County Department of Parks and Recreation's (LACDPR's) Whittier Narrows Recreation Area, adjacent to the Whittier Narrows WRP, in September 2006, followed by South El Monte High School in July 2007 and the Whittier Narrows Golf Course in December 2009. The $9 million project was constructed with the help of a $2.1 million Prop. 50 grant from the SWRCB, utilizing the plant's existing chlorine contact tanks that are no longer needed for effluent disinfection following conversion to UV disinfection. Construction of 14,467 linear feet of pipeline for the "Rosemead Extension" began in the fall of 2009, with completion coming at the end of 2010, with retrofits and connections completed in early 2012.

During FY 13-14, the USGVMWD distribution system delivered 1.569 MGD (1,758 AFY) through 18,900 feet of pipeline for use at 18 sites on 969.2 acres. This was 18.2% of the recycled water produced at this plant and a 6.8% increase over the preceding fiscal year. No new sites were added to the system during FY 13-14.

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 $773/AF, or 63% of its corresponding potable water rate of $1,236.54/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 was charged a contract rate of $921.10/AF, 74% of the potable water rate. All of the other users were charged their recycled water tariff rate of $978.56/AF, 79% of the potable water rate.

FIGURE 14
WHITTIER NARROWS WRP REUSE SITES

1. Whittier Narrows Recreation Area
2. South El Monte High School
3. Whittier Narrows Golf Course
4. Sanchez Elementary/Temple Middle Schools
5. Loma Elementary School
6. Jess Gonzales Sports Park
7. Garvey Medians
8. Walnut Grove Medians
9. Rush Street Medians
10. SCE Campus
11. WalMart
12. Panda restaurant Group
13. Sunshine Nursery
14. Rice Elementary School
15. Willard Elementary School
16. University of the West
17. Zapopan Park
18. Garvey Medians

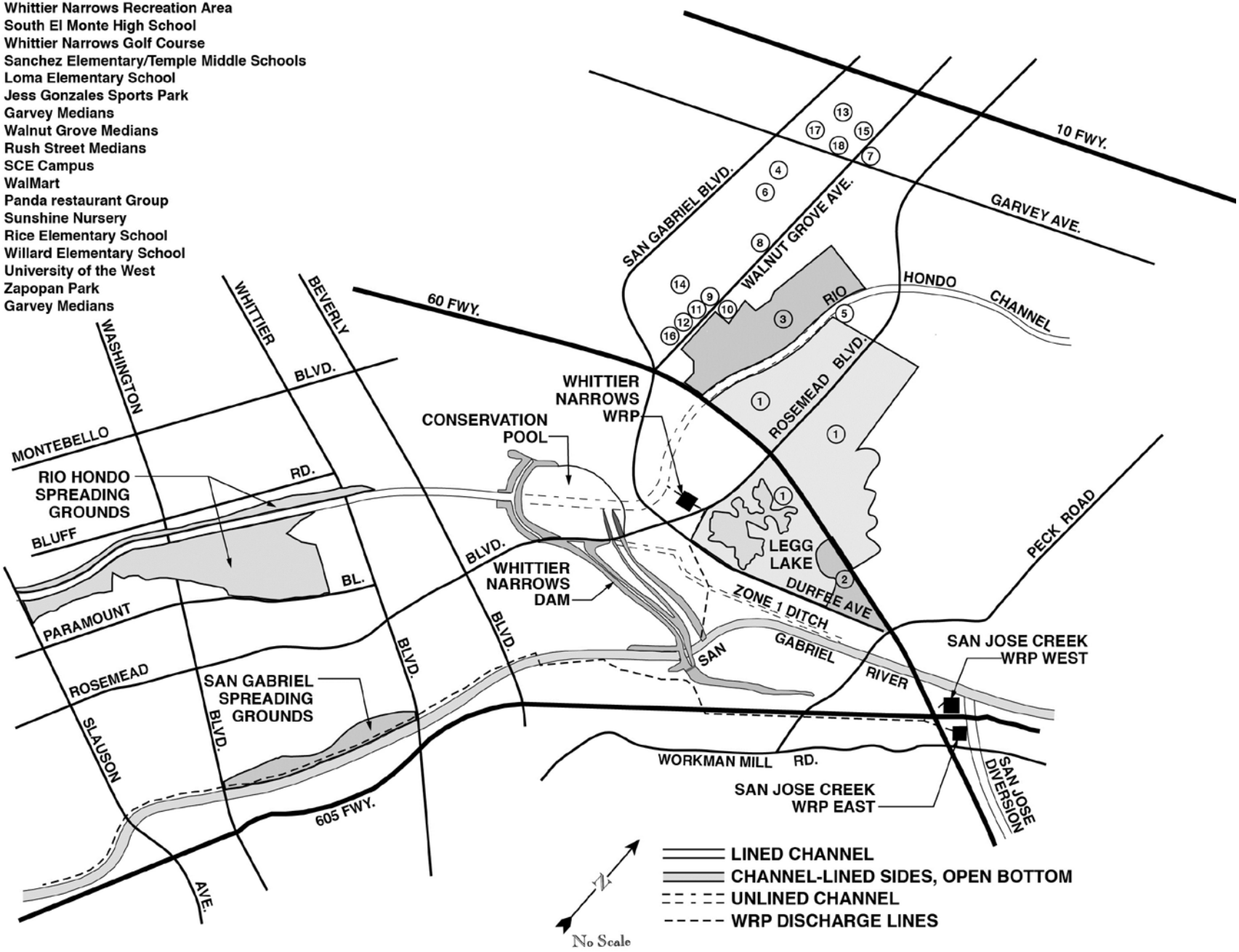


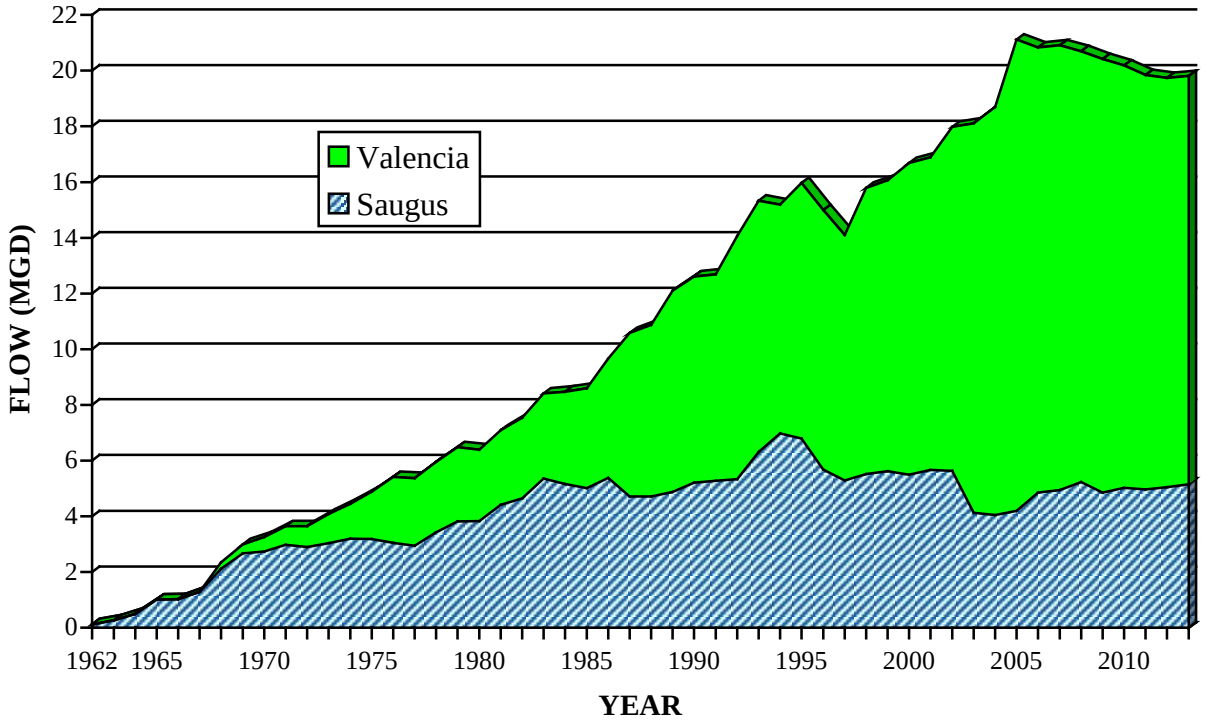
TABLE 15
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
WHITTIER NARROWS WRP

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Water Replenishment District	Aug 62	--	R	6.918	7,753
Whittier Narrows Recreation Area	Sep 06	568	L	0.813	913
South El Monte High School	Aug 07	16.1	AF, L	0.069	78
Whittier Narrows Golf Course	Dec 09	260	L	0.522	586
Sanchez Elementary/Temple Middle School	Aug 11	12.8	AF, L	0.006	7
Loma Elementary School	Aug 11	1.9	AF, L	0.004	4
Jess Gonzales Sports Park	Oct 11	4	L	0.012	14
Southern California Edison corporate offices	Oct 11	53	L	0.066	74
Eldridge Rice Elementary School	Oct 11	8.3	AF, L	0.013	15
Garvey Ave. medians	Dec 11	0.1	L	0.003	3
Walnut Grove Ave. medians	Dec 11	0.1	L	0.002	2
Rush St. medians	Dec 11	0.1	L	0.001	1
Sunshine Nursery, 8448 Dorothy St.	Dec 11	4.6	L	0.005	5
WalMart, 1827 Walnut Grove Ave.	Dec 11	17.7	L	0.013	15
Panda Restaurant Group, 1683 Walnut Grove Ave.	Dec 11	8.9	L	0.015	17
Willard Elementary School	Jan 12	6	AF, L	0.003	3
University of the West, 1409 Walnut Grove Ave.	Feb 12	0.4	L	0.004	4
Zapopan Park	Apr 12	7	L	0.014	15
Garvey Blvd. medians	Apr 12	0.2	L	0.0003	0.4
TOTALS		**969.2**		**8.487**	**9,510**

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.

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 combined design capacity of 28.1 MGD (31,487 AFY). During FY 13-14, these plants produced 19.56 MGD (21,913 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 2013. 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 0.290 MGD (326 AFY), or 1.5% of the total amount of recycled water produced in the SCVJSS, being delivered from the Valencia WRP during FY 13-14. This was an 11.3% increase over the preceding fiscal year.

FIGURE 15
SANTA CLARITA VALLEY JOINT SEWERAGE SYSTEM RECYCLED WATER PRODUCTION
1962-2013



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 13-14, the plant produced an average of 14.25 MGD (15,968 AFY) of recycled water, a 4.0% decrease from the preceding fiscal year. The FY 13-14 O&M cost to produce this water was approximately $748/AF, which includes solids processing for both the Saugus and Valencia WRPs. Recycled water quality for FY 13-14 is presented in Table B-7 of Appendix B.

Use of recycled water from this facility is permitted under LARWQCB Order Nos. 87-48 and 97-072. During FY 13-14, 0.290 MGD (326 AF), or 2.0% of the recycled water produced was actively reused, an 11.3% increase over the preceding year.

VALENCIA WRP FACTS	
Plant capacity:	21.6 MGD
Water produced:	14.25 MGD 15,968 AFY 4.0% FY decrease
FY13-14 O&M:	$748/AF
Water reused:	0.290 MGD 326 AFY 2.0% of production 11.3% FY increase
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 on Figure 16 and listed in Table 16.

During FY 13-14, 0.290 MGD (326 AF), or 2.0% of the recycled water produced at the Valencia WRP was delivered through 16,490 feet of pipeline, an 11.3% increase over the preceding fiscal year. The reason for this increase was the repair of a faulty meter at the storage reservoir serving the golf course in October 2013.

Valencia Water Company, the retail purveyor for this system, purchased the recycled water from CLWA for $512.70/AF and resold it at its tariff rate of $592.41/AF, or 92% of its corresponding potable water rate of $640.77/AF.

SAUGUS WRP FACTS	
Plant capacity:	6.5 MGD
Water produced:	5.31 MGD 5,945 AFY 4.7% FY increase
FY13-14 O&M:	$593/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 13-14, the plant produced an average of 5.31 MGD (5,945 AFY) of recycled water, which was a 4.7% increase over the preceding fiscal year, at an O&M cost of $593/AF. Recycled water quality for FY 13-14 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 13-14.

FIGURE 16
CASTAIC LAKE WATER AGENCY
RECYCLED WATER DISTRIBUTION SYSTEM

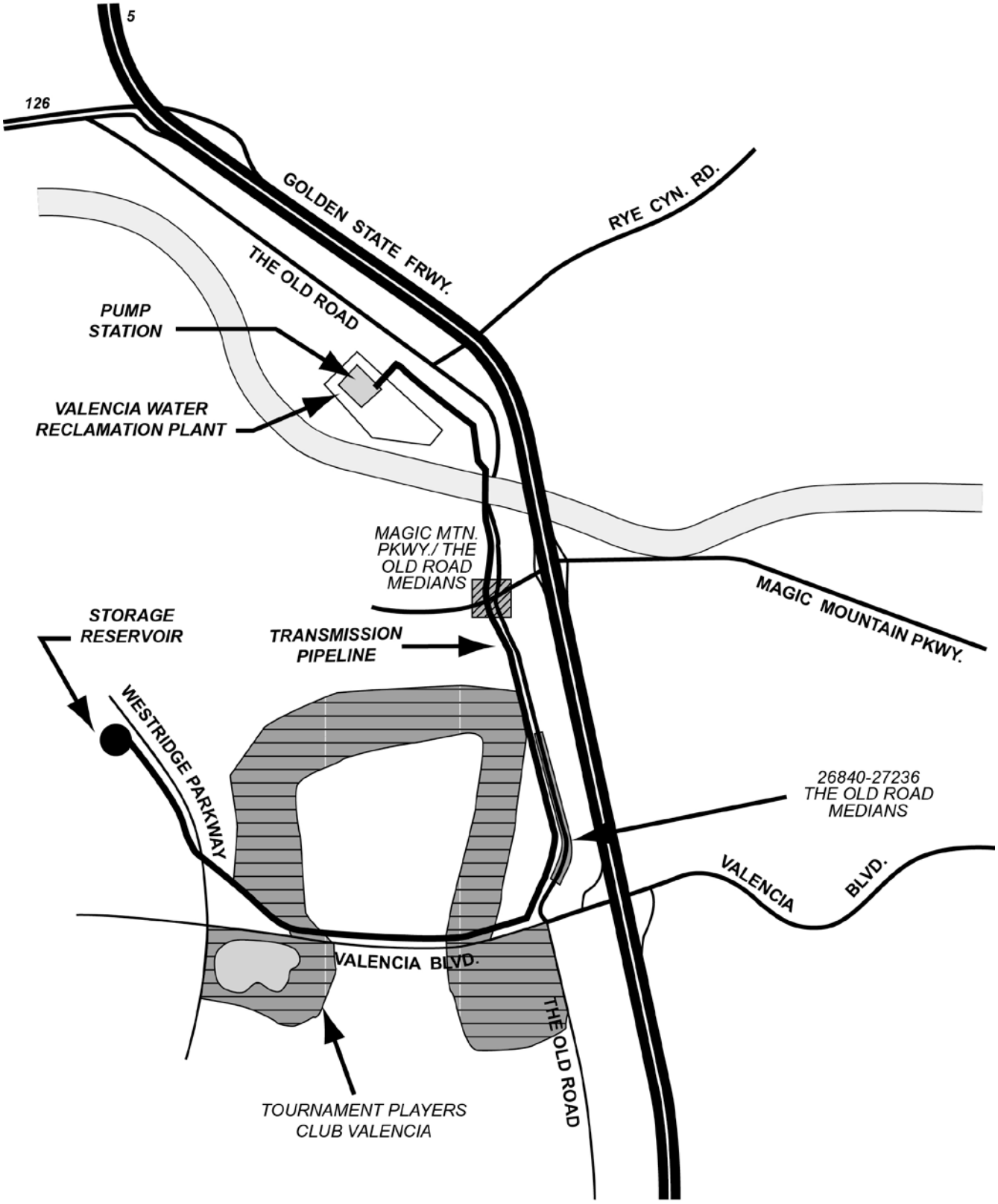


TABLE 16
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
VALENCIA WRP

Reuse Site (City)	Start-up Date	Acreage	Type of Use	Usage (MGD)	Usage (AFY)
Tournament Players Club at Valencia	Aug 03	120	L	0.240	269
The Old Road medians, (26840-27236 The Old Road)	Aug 03	5.8	L	0.034	38
The Old Road/Magic Mountain Parkway medians	Nov 10	2.8	L	0.016	18
TOTALS		**128.6**		**0.290**	**326**

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. Historically, both WRPs produced secondary effluent by means of oxidation ponds, but have since upgraded treatment to replace the oxidation ponds with an activated sludge and nitrification-denitrification secondary treatment process, and include tertiary filtration and chlorination disinfection. The plant upgrades were completed in December 2011 at the Palmdale WRP and July 2012 at the Lancaster WRP. Both plants use anaerobic digesters and drying beds for solids processing. During FY 13-14 the two WRPs treated a combined 22.60 MGD of wastewater to produce 22.13 MGD (24,794 AFY) of effluent available for reuse, a decrease of 3.5% from the preceding fiscal year. Figure 17 illustrates the growth of influent flows at the Lancaster and Palmdale WRPs from 1960 through the end of 2013. 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. For the Antelope Valley plants, influent has proven to be a more accurate gauge of plant flows because the actual amount of effluent from the oxidation ponds had been extremely variable from month to month, as water is either lost by evaporation/percolation or gained by rainfall. Even though both WRPs have been converted to activated sludge secondary treatment followed by tertiary filtration and their effluent flows are now much more accurate, influent flow will continue to be used as a long-term gauge due to the availability of accurate historical data. During FY 13-14, 17.35 MGD (19,452 AFY), or 78.5% of the recycled water produced, was actively reused, a 6.0% decrease from the preceding fiscal year. The difference between production and reuse flows would be the effect of evaporation from the recycled water storage reservoirs and change in storage, and not discharge to a waterway. Reuse flows from both WRPs are presented in Table 17.

FIGURE 17
ANTELOPE VALLEY WRPS INFLUENT FLOW
1960-2013

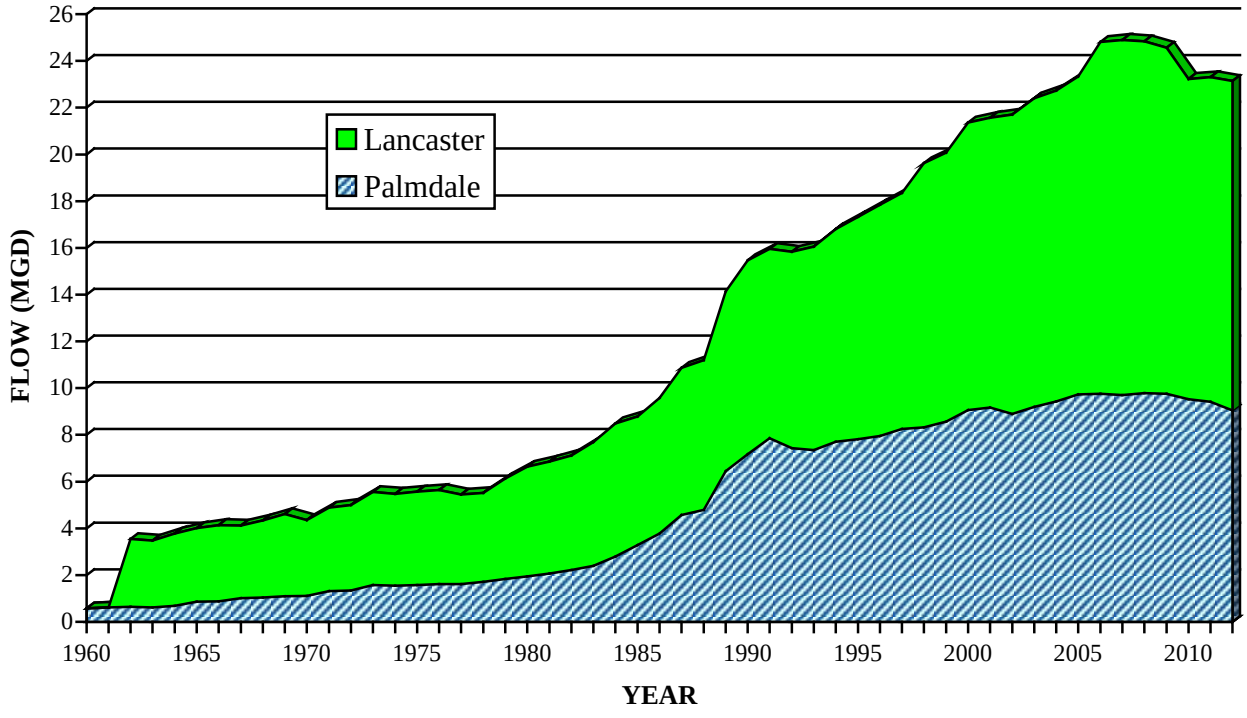


TABLE 17
SUMMARY OF FISCAL YEAR 13-14 RECYCLED WATER USAGE
LANCASTER AND PALMDALE WRPs

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	0.186	208
Piute Ponds (Lancaster)	May 81	400	E	4.289	4,806
Harrington Farms Pistachio Orchard (Palmdale)	Apr 85	23	AG	0.048	54
Tree Farm (Palmdale)	Feb 89	28	O	0	0
Antelope Valley Farms (Palmdale)	Mar 02	2,034	AG	7.402	8,294
Eastern Agricultural Site (Lancaster)	Dec 06	1,955	AG	5.405	6,057
Public Works Dept. sewer flushing (Lancaster)	Jan 09	--	I	0.001	1
Public Works Dept. street sweeping (Lancaster)	Feb 09	--	I	0.0003	0.4
Public Works Dept. dust control (Lancaster)	Sep 10	--	I	0	0
CIMIS Weather Station (Palmdale)	Oct 12	1	L	0.003	3
McAdam Park (Palmdale)	Oct 12	15	L	0.071	79
Tree Barriers (Palmdale)	Jan 13	4	AG	0.042	47
Lancaster City Park (Lancaster)	Mar 14	36	L	0.018	20
Kettering Solar Facility construction (Lancaster)	Mar 14	--	I	0.002	2
Lancaster Solar 1&2 construction (Lancaster)	Apr 14	--	I	0.007	8
Downtown Gateway construction (Lancaster)	May 14	--	I	0.00001	0.02
Lancaster pump station installation (Lancaster)	May 14	--	I	0.001	1
TOTALS		**5,118**		**17.474**	**19,581**

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.

4.1 LANCASTER WRP

LANCASTER WRP FACTS	
Plant capacity:	18 MGD
Water produced	13.63 MGD 15,268 AFY 6.2% FY decrease
FY13-14 O&M:	$620/AF
Water reused:	9.91 MGD 11,103 AFY 72.7% of production 12.5% FY decrease
Delivery systems:	5
No. of reuse sites:	6 3,011 acres

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 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 with a capacity of 18 MGD, after which the AVTTP and MBR facilities were taken off-line.

This plant produced an average of 13.63 MGD (15,268 AFY) of recycled water in FY 13-14, or a 6.2% decrease from the preceding fiscal year. The FY 13-14 O&M cost to produce tertiary effluent was approximately $620/AF (including solids processing). During FY 13-14, 7.566 MGD (8,478 AFY), or 66.8% of the plant's production, was actively reused on 3,011 acres at four fixed sites and several hauled uses shown on Figure 18 and presented in Table 17.

4.1.1 PIUTE PONDS

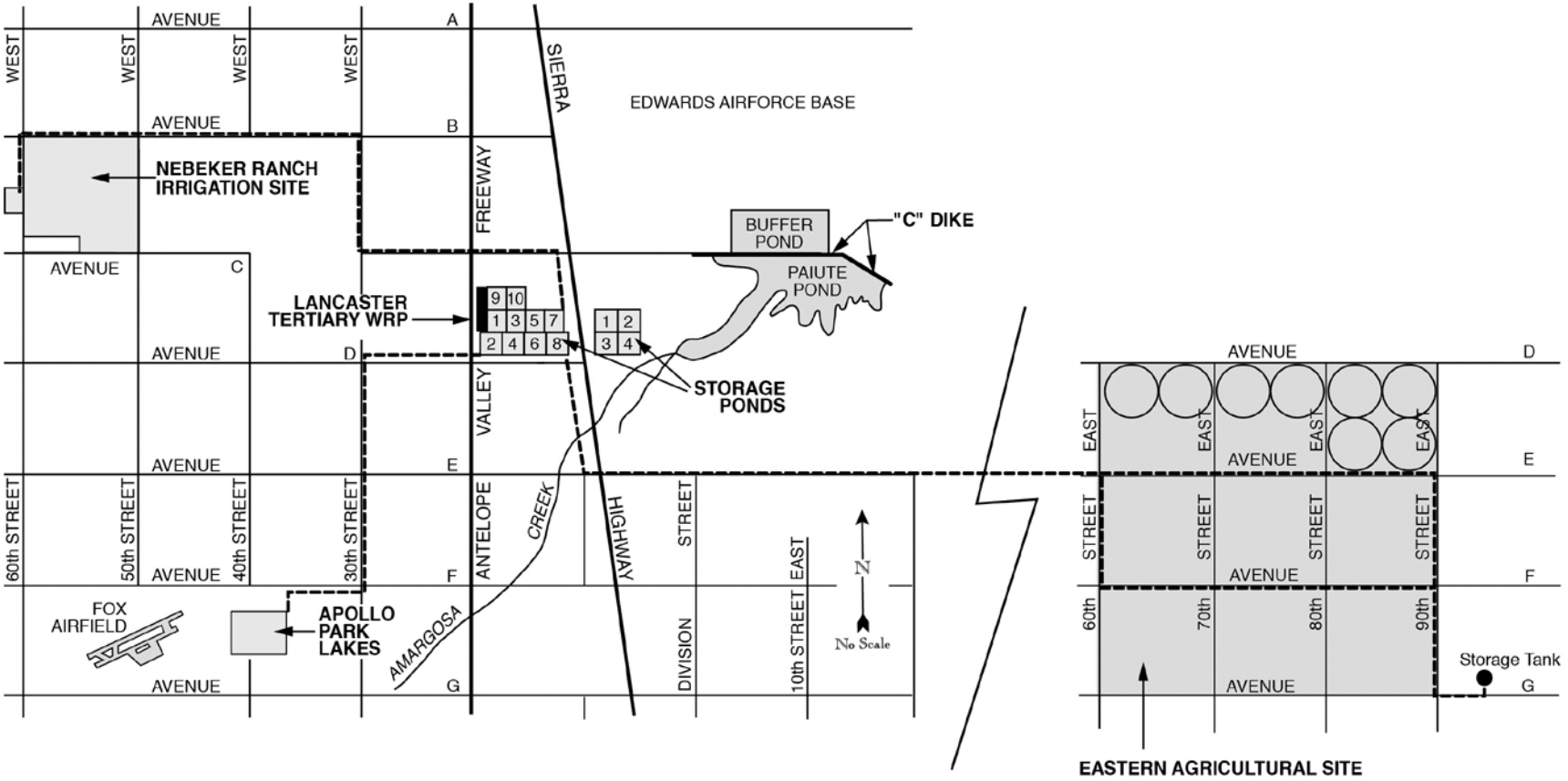
The initial discharge point for disposal of effluent from the Lancaster WRP had been to Amargosa Creek that then flowed onto Rosamond Dry Lake. In order to prevent flooding of the dry lakebed (which is located within the boundaries of Edwards Air Force Base), a 1-⅓ mile long dike was constructed in 1960 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 and allow Air Force officers to use this area for duck-hunting.

In FY 13-14, 4.289 MGD (4,806 AFY) was delivered to Piute Ponds, a decrease of 8.2% from the preceding fiscal year (and a 40.0% decrease since FY10-11), due to the diversion of recycled water for other direct, beneficial uses. This reuse constitutes 31.5% of the recycled water produced at this facility.

4.1.2 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 was 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 AVTTP was placed in operation in June 1969 with a capacity of 0.6 MGD. Recycled water from the AVTTP was delivered

FIGURE 18
LANCASTER WATER RECLAMATION PLANT FACILITIES



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. 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. Following the upgrade of the Lancaster WRP to tertiary treatment the AVTTP has been taken out of service and decommissioned, with recycled water produced by the Lancaster plant being delivered for use at Apollo Park instead. It is expected that the AVTTP will eventually be dismantled.

In FY 13-14, 0.186 MGD (208 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, a decrease of 13.5% from the preceding fiscal year. This reuse constitutes 1.4% of the recycled water produced at this plant.

4.1.3 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). This plant expansion was completed in July 2012. Additionally, since demand for recycled water is seasonal and weather dependent, approximately 4,000 AF of storage ponds were constructed.

There has been an increased interest in the recycled water produced by the 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 were 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 had been 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. However, tertiary recycled water from the newly upgraded Lancaster WRP has been delivered since the start-up of the new facilities, and the MBR plant has been decommissioned. During FY 13-14, 5.405 MGD (6,057 AFY) of recycled water was used at this site for the irrigation of 1,955 acres of fodder crops, such as alfalfa, Sudan grass, and a combination of barley, oats, and wheat, through 18 center pivots (115 acres were left fallow during this year). Reuse at this site constitutes 39.7% of the recycled water produced at this plant and a decrease of 2.4% from the preceding fiscal year.

4.1.4 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, constructed an extension of this distribution pipeline, which was completed in early 2014. 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 13-14, a total of 0.029 MGD (32 AFY) was delivered through 29,800 feet of pipeline, a 1500% increase over the

preceding fiscal year. Tertiary treated recycled water was used for a number of non-irrigation uses, such street sweeping of 2,125 curb-miles of roadways and parking lots, sewer flushing, and dust control and grading at four construction sites. The four construction sites were added in March, April, and May 2014, and Lancaster City Park was connected in March 2014. The City has an existing storage reservoir to serve their planned system and a booster pump station is under construction.

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, although with only a capacity of 12 MGD through the filters. Additional filters can be added in the future as influent flow to this plant increases.

This plant produced an average of 8.50 MGD (9,525 AFY) of recycled water in FY 13-14, or a 1.3% increase over the preceding fiscal year. The O&M cost to produce this water was approximately $889/AF (including solids processing).

During FY 13-14, 7.566 MGD (8,478 AFY), or 89.0% of the plant's production, was actively reused on 2,069 acres at five sites. Most of the 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 7.3% increase in reuse over the preceding fiscal year. The area receiving recycled water is shown on Figure 19. The reuse sites are listed in Table 16 along with the reuse flows from the Lancaster WRP.

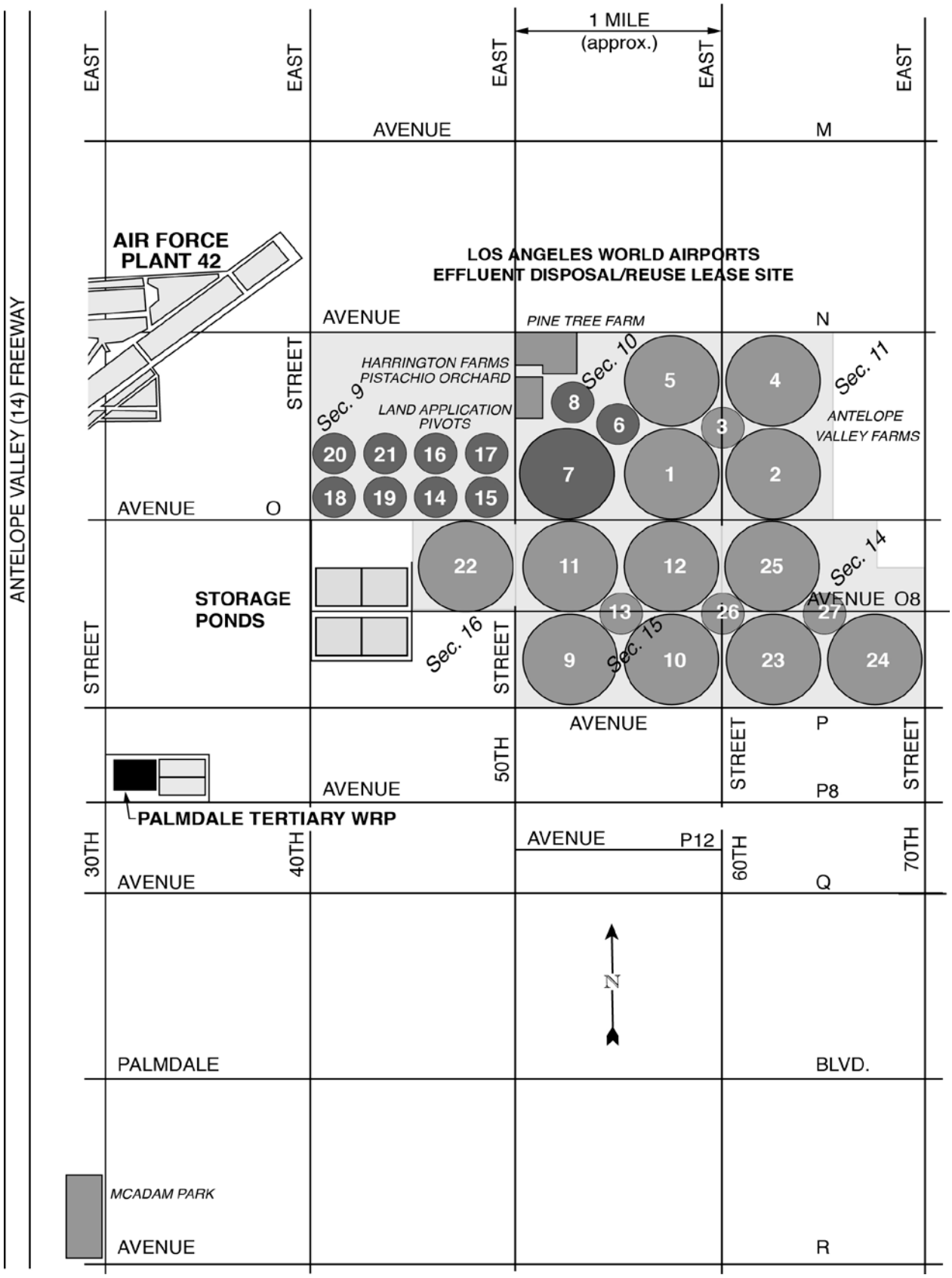
PALMDALE WRP FACTS	
Plant capacity:	12 MGD
Water produced:	8.50 MGD 9,525 AFY 1.3% FY increase
FY13-14 O&M:	$889/AF
Water reused:	7.566 MGD 8,478 AFY 7.3% FY increase 89.0% of production
Delivery systems:	1
No. of reuse sites:	3 2,069 acres

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 had been 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 this land to farmers until the airport could be built, reselling the recycled water to these farmers and spreading the excess on uncultivated land. However, LAWA was unable to find tenants to buy the recycled water, so 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. These documents provide an integrated solution for meeting the revised WDRs established in 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

FIGURE 19
PALMDALE WATER RECLAMATION PLANT FACILITIES



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 of the recycled water 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 and is used to irrigate 23 acres of the Pistachio Orchard (previously planted and maintained by LAWA) and a 46-acre Sanitation Districts-operated tree farm (formerly operated by Tree Mover). Both the Pistachio Orchard and Tree Farm are leased from the Sanitation Districts by Harrington Farms. In addition, recycled water is being used to irrigate an acre of landscaping around a CIMIS weather station and four acres of tree barriers. These sites used a cumulative 0.093 MGD (104 AFY) during FY 13-14.

As part of the FMP implementation, 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 13-14, 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 13-14, this 2,000-acre site used 7.402 MGD (8,294 AFY), or 87.1% of the recycled water produced by the Palmdale WRP to grow livestock feed (oats and alfalfa). This was a 5.9% increase over the preceding fiscal year.

4.2.2 CITY OF PALMDALE

The Palmdale Recycled Water Authority (PWRA) was created in 2012 through an agreement between the City of Palmdale and the Palmdale Water District (see details in Section 5.8.2). As part of this project, the City of Palmdale installed a temporary pump station that began delivering recycled water to McAdam Park in October 2012, using 0.071 MGD (79 AFY) in FY 13-14.

5. FUTURE WATER RECYCLING PROJECTS

A number of recycled water distribution projects throughout the Sanitation Districts' service area are in various stages of development to make use of up to an estimated 83,670 AFY of the remaining recycled water currently produced but not yet beneficially reused, with the possibility of another 16,600 AFY of effluent from JWPCP receiving additional treatment prior to reuse. These projects are listed in Table 18 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.

Compounding this is the fact that, for the first time in history, the estimated future demands on the Sanitation Districts' recycled water supply exceeds the remaining unused quantities (74,225 AFY). In the case of the Antelope Valley, this will require the transition from Sanitation Districts' sponsored agricultural operations to urban applications. And while there is currently a lack of competition for recycled water from the Valencia and Saugus WRPs, the San Jose Creek WRP appears to be headed towards oversubscription. At some point, it may be required to increase recycled water flows (e.g., sewer diversions, flow equalization) if some of the proposed recycled water projects are to be fully developed.

TABLE 18
SUMMARY OF FUTURE WATER RECYCLING PROJECTS

Project Name	Recycled Water Source	Quantity (AFY)	Anticipated Completion
Long Beach Water Dept. (recommended projects)	Long Beach WRP	4,510	TBD
Alamitos Barrier Expansion	Long Beach WRP	3,800	Spring 2015
City of Lakewood	Los Coyotes WRP	160	TBD
Walnut Valley Water District	Pomona WRP	4,550	TBD
City of Pomona Master Plan (recommended projects)	Pomona WRP	1,500	2030
Groundwater Reliability Improvement Program	San Jose Creek WRP	21,000	TBD
USGVMWD groundwater recharge project	San Jose Creek WRP	10,000	2017
La Puente Valley County Water District	San Jose Creek WRP	280	TBD
Southeast Water Reliability Project	San Jose Creek WRP	1,000	TBD
CBMWD East Los Angeles Expansion	San Jose Creek WRP	1,500	TBD
CBMWD La Mirada Extension	San Jose Creek WRP	1,200	TBD
CBMWD Montebello Hills Specific Plan	San Jose Creek WRP	185	TBD
City of Arcadia	Whittier Narrows WRP	740	TBD
West Basin Municipal Water District	JWPCP	16,600	2020-25
Castaic Lake Water Agency	Valencia/Saugus WRPs	17,400	2024
Newhall Ranch Development	Valencia WRP	9,545	2015-
County Waterworks – Backbone System	Palmdale/Lancaster WRPs	4,300	TBD
City of Palmdale	Palmdale/Lancaster WRPs	2,000	Spring 2018
TOTAL		100,270	

TBD = to be determined

In addition to the listed projects, 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.

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 five being recommended for implementation (a sixth recommended project has already been completed):

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 (customer no longer interested).

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 would serve 488 AFY to TOPKO and Montenay Pacific Power Corp. Sub-project 9C would serve 797 AFY to Nation Gypsum and BP West Coast Products. Sub-project 9D would serve 628 AFY for industrial uses at THUMS Long Beach and TOPKO. The four sub-projects would use 6- to 20-inch pipelines and are projected to have a capital cost of $32.9 million.

LBWD currently does not plan on implementing the above projects in the foreseeable future.

5.1.2 Alamitos Barrier Expansion

Following the successful operation of the LVLAWTF and injection of advanced treated recycled water into the Alamitos Barrier at 50%, WRD is proceeding with expanding the use of recycled water to 100% of the injection supply. On January 18, 2013, ground was broken on the expansion of the LVLAWTF to its ultimate capacity of 8,800 AFY. Because of downstream sewer capacity issues, WRD had to design the expansion to reduce their waste streams treating and recovering backwash from the microfiltration and operating a third-pass of their RO processes to further concentrate brine reject water. Construction of this project was completed by the end of 2014 with full start-up of the expanded facilities expected in spring 2015. As of now, enough recycled water is expected to be available from the Long Beach WRP; however, increased use by LBWD may require that tertiary effluent from the Los Coyotes WRP be obtained. In the new contract between the Sanitation Districts and WRD that went into effect on July 1, 2013, 10,000 AFY of recycled water from the Los Coyotes WRP can be made available for this project, if necessary.

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, no implementation schedule was set as funding had been unavailable. With the passage of Proposition 1 in November 2014, city staff will be reevaluating the economics of this project.

5.2.2 Additional CBMWD Expansion Projects

CBMWD is currently looking into expansion projects in the Cities of Lynwood, South Gate, Bell Gardens, Pico Rivera, Commerce and Downey. And while the CBMWD's distribution system is interconnected between the San Jose Creek and Los Coyotes WRPs, recycled water in these areas would most likely be supplied from the latter facility. These projects are in the conceptual stages and will be looked into in closer detail by CBMWD.

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. All but a very short portion of the gravity line between the Pomona WRP and the Spadra site has already been replaced with 24-inch cement-lined and coated steel pipe. WVWD and the Sanitation Districts are also investigating the construction of a 1 to 3 million gallon storage reservoir at or near the Spadra site to serve both agencies and make use of Pomona WRP recycled water that is currently discharged to the river. According to staff of WVWD, both of these capital improvement projects are necessary to increase WVWD's use of recycled water from the Pomona WRP. In mid-2013, WVWD had its soil consultant begin evaluating the suitability of a 7-acre parcel along Valley Boulevard at the Spadra site as the location for the proposed

storage tank. The "Intermediate Pad" was found to be the most suitable, and is located completely within Sanitation Districts' property. Once an agreement is in place between WVWD and the Sanitation Districts for an easement, joint use, etc., WVWD can put out an RFP for design and construction.

In December 2011, WVWD finalized an updated master plan for the future orderly expansion of its recycled water distribution system by up to an estimated 1,974 AFY through build-out in the year 2020. This Master Plan detailed the potential for expansion, which would consist of adding 167,000 feet of 6- to 20-inch pipeline, nine pump stations, and three reservoirs (a fourth one in the Master Plan has already been constructed) to the recycled water distribution system. Completion of this $33 million system expansion would be conducted in phases corresponding to the six pressure zones being served. The overall plan is contingent upon WVWD Board approval and the construction of the aforementioned storage reservoir at the Spadra site, 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 2.5.9.

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 yielding 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 is constructing 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 is concurrently upgrading Cal Poly's irrigation water lift station 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 spring 2015, 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, along with 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 (JPA) was formed by the three agencies to proceed with the project.

However, despite initial progress, the USGVMWD Board of Directors voted in March 2011 to remove their agency from the JPA 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 State Water Project supplies with locally supplied recycled water. USGVMWD is finalizing design of the Indirect Reuse Replenishment Project (IRRP) that will deliver up to 10,000 acre-feet per year of highly treated recycled water for recharge of the groundwater basin. The Upper District is in the process of completing the efforts to permit the spreading of this water for recharge at the Santa Fe Dam spreading grounds operated by the LACDPW in conjunction with the Army Corps of Engineers. This project will include a pump station located at the Sanitation Districts' San Jose Creek WRP as well as a 9-mile transmission pipeline adjacent to

the San Gabriel River. Construction is expected to break ground in 2017, with capacity planned to increase to about 15,000 AFY per year by 2035.

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) that was expected to begin in late 2013.

5.4.2 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.

5.4.3 Southeast Water Reliability Project

The Southeast Water Reliability Project is the planned CBMWD system expansion that will complete the loop of the Rio Hondo (Torres) and Century (Ibbetson) systems for flow reliability, system pressure, and to aid in chlorination. The ultimate capacity for the combined, looped systems is projected to be 15,000 AFY. As envisioned, this will consist of approximately 11.4 miles of 30-inch cement-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. Construction on the first phase from Pico Rivera to the Montebello Golf Course was completed in the fall of 2011 and several sites have already been connected using approximately 400-500 AFY of the 1,000 AFY of identified demand. 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.

CBMWD is beginning to revisit the possibility of constructing a recycled water storage reservoir at its Rio Hondo pump station that would provide daily operational storage. Construction on the tank had been put on hold due to financial considerations, but is now potentially eligible for future grant funding through Proposition 1 that was approved in November 2014. The site of the storage tank may be relocated to take advantage of elevation for gravity feed of the system. CBMWD will need to complete some planning for this project to proceed.

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 draft report produced in mid-2012.

5.4.4 East Los Angeles Recycled Water System Expansion

Representatives of the City and County of Los Angeles area have expressed their dissatisfaction with the condition of Evergreen Cemetery (i.e., dried vegetation, poor upkeep). City staff members have been sending letters to State regulators regarding this issue and looking into potential solutions. In addition to seeking possible solutions from the State, the City of Los Angeles is encouraging LADWP and CBMWD to build a recycled water transmission pipeline to bring recycled water to the cemetery and other nearby sites in the area.

LADWP has a master plan to build recycled water piping throughout the city. Their timeline shows them building the final phase of their recycled pipeline project by the year 2020. The City identified Central Basin as the closest recycled water supplier in their area. If Central Basin's infrastructure could be extended, it may prove cheaper and take many years less to build. The City and their associates are currently looking into grant funding possibilities. CBMWD has prepared a feasibility study and preliminary design report for the project with an initial estimated annual demand of 1,500 AFY. CBMWD is currently reviewing the draft Water Recycling Funding Program Guidelines for Proposition 1 funding.

5.4.5 City of La Mirada Extension

CBMWD has continued to look 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.

5.4.6 Montebello Hills Specific Plan Project

The Montebello Hills Specific Plan Project is a new 488 acre residential living development of approximately 1,200 to 1,400 dwelling units in the City of Montebello. The project will require a new recycled water pipeline and pump station to be constructed. The pipeline will extend from the CBMWD existing Southeast Water Reliability Project (SWRP) pipeline within Lincoln Avenue heading north within Montebello Boulevard to the project area. Recycled water usage for this project has been estimated to be 185 acre-feet (AF) per year. This project is currently in the environmental review stages. Public hearings were originally scheduled for January of this year; however, they have not yet taken place. The developer will be keeping staff up to date on their progress with the EIR. CBMWD has also met with the water purveyor, San Gabriel Valley Water, and the City of Montebello regarding this project and will continue to coordinate efforts as the project moves forward.

The developer and the CBMWD have been working to establish an agreement to reimburse CBMWD for staff time working on this project. The "Scope of Work" under this contract is for CBMWD to obtain a preliminary engineering review of infrastructure needs and to perform a feasibility study for the pipeline and pump station associated with this project. A report will be generated for the use of both CBMWD and the developer. The developer informed CBMWD that they might have a design consultant available to work on the design of the pipeline and pump station and that they might consider including the design on behalf of the District as part of their overall project. Details on obtaining a design will be worked out after it is determined if the project is feasible to construct. CBMWD will be responsible for constructing the pipeline and pump station for the project and is also looking to obtain grant funding for this project.

5.5 WHITTIER NARROWS WRP

5.5.1 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, and 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 outlined the expansion of its recycled water system deliveries to a potential of 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 20 MGD. Their study of the options found that both their pump station at the City of Los Angeles' Hyperion treatment plant, which supplies its effluent for recycling and its distribution system would require extensive expansion in order to accommodate the additional flows from its El Segundo water recycling facility to serve reuse sites in the Carson and Palos Verdes areas. One option, which could prove more cost effective, would be to supply 20% of WBMWD's 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 in route to a specific user or group of recycled water sites. Currently, plans for a major expansion of demands in the Carson and Harbor Area are being re-evaluated by WBMWD, along with the feasibility of a new treatment plant at the JWPCP. According to the Master Plan's recommended CIP, 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 an updated 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 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 for the purchase and sale of recycled water to support the updated Master Plan, which is anticipated to be completed in 2016. In 2014, CLWA, along with the local purveyor Valencia Water Company, received LARWQCB approval to expand its recycled water system at the Entrada Development for landscape irrigation and to construct a recycled water fill station near CLWA's recycled water tank site for non-irrigation use.

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 booster pump station, several thousand feet of pipelines and a 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. In June 2011, the Mitigated Negative Declaration/Environmental Assessment (MND/EA) was completed and USEPA issued a Finding of No Significant Impact for this project. In July 2011, CLWA approved the resolution adopting the MND/EA and approving the Mitigation Monitoring and Reporting Program, and a Notice of Determination was filed with the Los Angeles County Office of Clerk/Recorder and with the California State Clearinghouse. CLWA anticipates the construction of the project to be completed in 2024.

5.7.2 Newhall Ranch Development

The Newhall Land and Farming Company, a major landowner in the Santa Clarita Valley, has plans for a 12,000 acre residential/commercial development known as Newhall Ranch. A new sanitation district, the Newhall Ranch County Sanitation District, has been formed and is a part of the Sanitation Districts of Los Angeles County. Construction of a Newhall Ranch Water Reclamation Plant is planned to serve the sewer needs of Newhall Ranch, along with a portion of Newhall Ranch's estimated 9,545 AFY of recycled water demand.[8] During the initial development of this project, the recycled water demand is expected to be supplied by the Sanitation Districts' Valencia WRP, which may continue supplying recycled water even after full implementation of the construction and occupation. The earliest predicted occupation of Newhall Ranch homes is 2016; however, recycled water may be needed for grading activities planned for 2015.

5.8 Lancaster and Palmdale WRPs

5.8.1 Antelope Valley Regional Recycled Water Distribution Project

Sanitation Districts' staff continues to work with the cities of Lancaster and Palmdale and Los Angeles County Waterworks District 40, Antelope Valley, (Waterworks) to develop a regional "backbone" recycled water distribution system for municipal and industrial users. The proposed North Los Angeles/Kern County Regional

8 "Valencia Water Company Reclaimed Water Master Plan for Newhall Ranch", Dexter Wilson Engineering, Inc., January 2006.

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 portions, with the Division Street Corridor and its extensions to Columbia Way and to City Park already having been constructed and partially 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 the extension of the Division Street Corridor (described above). The Columbia Way lateral would serve the proposed Palmdale Hybrid Power Plant (PHPP), a 570-megawatt electric generating facility. 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, as well as a storage tank at the Waterworks' tank site. This segment of the backbone system has been designed and is planned for completion 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 and purchased by Summit Power Group LLC in May 2012. Once initiated, construction of the PHPP is estimated to take about 30 months. 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).

5.8.2 Palmdale Recycled Water Authority (PRWA)

The PRWA was created in 2012 through an agreement between the City of Palmdale and the Palmdale Water District to jointly study, promote, develop, distribute, construct, install, finance, use, and manage recycled water resources created by the Sanitation Districts' Palmdale and Lancaster WRPs for any and all reasonable and beneficial uses, including irrigation and recharge, and to finance the acquisition and construction or installation of recycled water facilities, recharge facilities and irrigation systems. The City of Palmdale will allocate all of its contractual recycled water rights to the PRWA.

The City of Palmdale has a contract with the Sanitation Districts for the purchase of up to 2,000 AFY of recycled water from the Palmdale and Lancaster WRPs. The PWRA is planning Phase 2 of its recycled water distribution project, which would install 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, and Domenic Massari. These parks are expected to use approximately 1,000 to 1,200 AFY. The PWRA 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 PWRA 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 PWRA has installed a temporary pump station that began delivering recycled water to McAdam Park in October 2012. The PWRA is also working on implementing a truck filling station for street sweeping using recycled water. The entire project is expected to be completed in the spring of 2018.

5.9 Conceptual Water Recycling Projects

The most recent statewide water crisis that began in 2006 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"). 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 13-14, JWPCP provided primary and secondary treatment to approximately 263.69 MGD (296,287 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 was performed, funded with a $330,000 grant from the USBR to demonstrate the technology. Pilot scale testing concluded in June 2012 and a final report was submitted to the USBR in September 2012. MWD has restarted discussions involving the construction of a demonstration plant at JWPCP.

5.9.2 Downey/Cerritos Advanced Treatment Plant for Recharge

The cities of Downey and Cerritos had begun a joint investigation of 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 be significantly revised. No significant progress has been made on this project to date.

5.9.3 Scalping Plants

The Sanitation Districts have been contacted regarding scalping plants in both the JOS and SCV systems. An evaluation of these proposals is currently underway. In general, there are several obstacles to overcome, including technical, financial, 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 was has already been contracted for at these downstream WRPs.

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
CDPH	California Department of Public Health (formerly Health Services)
CDM	Camp/Dresser/McKee
CEQA	California Environmental Quality Act
CLWA	Castaic Lake Water Agency
COD	chemical oxygen demand
CTR	California Toxics Rule
DDW	State Division of Drinking Water (formerly CDPH)
DIP	ductile iron pipe
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
IRRP	Indirect Reuse Replenishment Project
JOS	Joint Outfall System
JPA	Joint Powers Authority
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
LMD	Landscape Maintenance District
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
MND/EA	Mitigated Negative Declaration/Environmental Assessment
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
PRWA	Palmdale Recycled Water Authority
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 Division of Drinking Water, or DDW) 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 LARWQCB 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 LARWQCB 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 (now DDW) 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 LARWQCB adopts a general reuse permit allowing for the use of recycled water for non-irrigation purposes.
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.

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.
July 2009	Deliveries of recycled water from the San Jose Creek WRP begin to RWD through the City of Industry distribution system.
June 2010	The Sanitation Districts and California County Club sign a new agreement for the sale of 525 AFY of recycled water from the San Jose Creek WRP.
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 LARWQCB's new, region-wide non-irrigation reuse permit.
December 2011	The Palmdale WRP conversion to tertiary treatment is completed.
May 2012	The landscaping around the Parker Canyon Storage Reservoir was connected to the WVWD distribution system, becoming the Sanitation Districts' 700th recycled water customer.
July 2012	The Lancaster WRP conversion to tertiary treatment is completed.
July 2012	USGVMWD completes it Phase II-B recycled water distribution system in the Suburban Water Systems service area and begins serving reuse sites in the City of West Covina.
October 2012	The City of Palmdale completes the first portion of its planned recycled water distribution system and begins deliveries to McAdam Park.
May 2013	LARWQCB revises the 1991 Montebello Forebay recharge permit allow for compliance with the recycled water contribution of 35% on a running 10-year average.
June 2013	For the first time, the Sanitation Districts' recycled water program exceeds 100,000 AFY in beneficial reuse in any fiscal year period.
July 2013	The new contract for the sale of recycled water to WRD goes into effect. This contract includes recycled water produced at the San Jose Creek, Whittier Narrows and Pomona WRPs delivered for groundwater recharge.
March 2014	The City of Lancaster connects the first of its planned recycled water users and begins deliveries to McAdam Park.
April 2014	LARWQCB increases the allowable recycled water contribution in the Montebello Forebay to 45% based on a running 10-year average.
June 2014	For the second fiscal year in a row, the Sanitation Districts' recycled water program exceeds 100,000 AFY in beneficial reuse.

APPENDIX B

RECYCLED WATER QUALITY FROM SANITATION DISTRICTS' TERTIARY WRPS

TABLE B-1
LONG BEACH WATER RECLAMATION PLANT
RECYCLED WATER QUALITY, FY 2013-14

Constituent	Units	Mean	Maximum	Minimum
pH		7.40	7.7	6.5
Turbidity	NTU	0.70	1.80	0.49
Total Coliform	org./100 ml	<1	8	<1
Fecal Coliform	org./100 ml	<1	1	<1
Temperature	deg. F	78.2	86.0	72.0
Suspended Solids	mg/L	<2.5	2.8	<2.5
Settleable Solids	ml/L	<0.1	<0.1	<0.1
Total Dissolved Solids	mg/L	607	684	562
Total COD	mg/L	<25.2	43.7	<25.0
Total BOD	mg/L	<3.0	3.9	<3.0
Ammonia Nitrogen	mg/L	0.961	2.36	0.497
Organic Nitrogen	mg/L	1.66	2.47	0.744
Nitrate Nitrogen	mg/L	6.68	8.46	4.09
Nitrite Nitrogen	mg/L	0.218	0.557	0.049
Fluoride	mg/L	0.657	0.694	0.623
Boron	mg/L	0.30	0.34	0.27
Cyanide	µg/L	<5.0	<5.0	<5.0
Chloride	mg/L	122	150	111
Sulfate	mg/L	111	151	85.6
Total Hardness	mg/L	181	237	144
Total Alkalinity	mg/L	182	213	167
Antimony	µg/L	0.53	0.58	0.41
Arsenic	µg/L	2.33	2.98	1.96
Barium	µg/L	57.2	78.8	48.8
Beryllium	µg/L	<0.25	<0.25	<0.25
Cadmium	µg/L	<0.20	<0.20	<0.20
Total Chromium	µg/L	0.27	0.35	0.17
Hexavalent Chromium	µg/L	<0.17	<0.3	<0.03
Copper	µg/L	2.16	2.95	1.59
Lead	µg/L	0.10	0.21	0.06
Mercury	µg/L	0.00109	0.0013	0.00096
Nickel	µg/L	1.20	1.48	1.06
Selenium	µg/L	0.32	0.33	0.29
Silver	µg/L	<0.20	<0.20	<0.20
Thallium	µg/L	<0.25	<0.25	<0.25
Zinc	µg/L	32.8	39.1	24.2
Detergents (MBAS)	mg/L	<0.10	<0.10	<0.10
Oil and Grease	mg/L	<4.6	<4.8	<4.5
Conductivity	µmhos/cm	1021	1220	797

TABLE B-2
LOS COYOTES WATER RECLAMATION PLANT
RECYCLED WATER QUALITY, FY 2013-14

Constituent	Units	Mean	Maximum	Minimum
pH		7.29	7.6	7.0
Turbidity	NTU	0.64	1.14	0.42
Total Coliform	org./100 ml	<1	7	<1
Fecal Coliform	org./100 ml	<1	1	<1
Temperature	deg. F	79.5	86.0	73.0
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	790	856	740
Total COD	mg/L	<25.9	35.5	<25
Total BOD	mg/L	<3.0	4.3	<3.0
Ammonia Nitrogen	mg/L	1.493	2.60	0.825
Organic Nitrogen	mg/L	0.809	1.23	0.488
Nitrate Nitrogen	mg/L	6.16	7.18	4.92
Nitrite Nitrogen	mg/L	0.051	0.100	0.030
Fluoride	mg/L	0.489	0.513	0.474
Boron	mg/L	0.38	0.41	0.35
Cyanide	mg/L	<2.82	<5.0	1.22
Chloride	mg/L	176	180	168
Sulfate	mg/L	175	227	160
Total Hardness	mg/L	261	293	246
Total Alkalinity	mg/L	201	229	177
Antimony	µg/L	2.39	3.06	1.28
Arsenic	µg/L	1.08	1.52	0.89
Barium	µg/L	52.5	59.1	46.3
Beryllium	µg/L	<0.25	<0.25	<0.25
Cadmium	µg/L	<0.20	<0.20	<0.20
Total Chromium	µg/L	0.61	0.85	0.36
Hexavalent Chromium	µg/L	<0.17	<0.30	0.03
Copper	µg/L	1.82	2.25	1.28
Lead	µg/L	0.16	<0.25	0.08
Mercury	µg/L	0.0016	0.0019	0.0011
Nickel	µg/L	3.73	3.90	3.44
Selenium	µg/L	0.42	0.48	0.37
Silver	µg/L	<0.20	<0.20	<0.20
Sodium	mg/L	200	206	194
Thallium	µg/L	<0.20	<0.25	0.035
Zinc	µg/L	35.7	39.3	25.8
Detergents (MBAS)	mg/L	<0.10	<0.10	<0.10
Oil and Grease	mg/L	<4.5	<4.8	<4.2
Conductivity	µmhos/cm	1393	1600	1190

TABLE B-3
POMONA WATER RECLAMATION PLANT
RECYCLED WATER QUALITY, FY 2013-14

Constituent	Units	Mean	Maximum	Minimum
pH		7.32	7.6	6.7
Turbidity	NTU	0.53	0.90	0.30
Total Coliform	org./100 ml	<1	26	<1
Fecal Coliform	org./100 ml	<1	3	<1
Temperature	deg. F	78.4	87.5	70.9
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	579	606	550
Total COD	mg/L	<25.6	42.3	<25.0
Total BOD	mg/L	<3.0	<3.0	<3.0
Total Organic Carbon	mg/L	6.56	7.66	5.92
Ammonia Nitrogen	mg/L	1.826	3.02	0.933
Organic Nitrogen	mg/L	0.769	1.20	0.250
Nitrate Nitrogen	mg/L	7.02	9.39	4.77
Nitrite Nitrogen	mg/L	0.195	0.368	0.063
Fluoride	mg/L	0.341	0.405	0.305
Boron	mg/L	0.25	0.27	0.21
Cyanide	µg/L	1.6	2.1	1.0
Chloride	mg/L	138	144	128
Sulfate	mg/L	82.9	99.7	68.5
Total Alkalinity	mg/L	165	225	149
Total Hardness	mg/L	220	300	202
Calcium	mg/L	70.3	79.1	64.0
Magnesium	mg/L	14.5	15.0	13.9
Antimony	µg/L	0.42	0.54	0.32
Arsenic	µg/L	1.10	1.23	0.96
Barium	µg/L	42.3	44.6	39.0
Beryllium	µg/L	<0.25	<0.25	<0.25
Cadmium	µg/L	0.093	<0.20	0.040
Total Chromium	µg/L	0.98	1.09	0.90
Hexavalent Chromium	µg/L	0.71	<0.30	0.05
Copper	µg/L	4.60	5.32	3.98
Iron	µg/L	28.8	34.8	26.0
Lead	µg/L	0.35	0.45	0.28
Manganese	µg/L	4.69	6.50	3.66
Mercury	µg/L	0.0014	0.0016	0.0012
Nickel	µg/L	1.38	1.70	1.10
Potassium	mg/L	15.0	15.6	14.6
Selenium	µg/L	0.47	0.58	0.39
Silver	µg/L	<0.12	<0.20	0.03
Sodium	mg/L	109	123	98.4
Thallium	µg/L	<0.25	<0.25	<0.25
Zinc	µg/L	61.5	64.8	59.2
Detergents (MBAS)	mg/L	<0.10	<0.10	<0.10
Oil and Grease	mg/L	<4.6	<5.0	<4.3
Conductivity	µmhos/cm	983	1090	851

TABLE B-4
SAN JOSE CREEK WATER RECLAMATION PLANT EAST
RECYCLED WATER QUALITY, FY 2013-14

Constituent	Units	Mean	Maximum	Minimum
pH		7.13	7.5	6.7
Turbidity	NTU	0.62	1.57	0.35
Total Coliform	org./100 ml	<1	2	<1
Fecal Coliform	org./100 ml	<1	1	<1
Temperature	deg. F	80.1	88	72
Suspended Solids	mg/L	<2.5	3.7	<2.5
Settleable Solids	ml/L	<0.1	<0.1	<0.1
Total Dissolved Solids	mg/L	638	694	598
Total COD	mg/L	<26.0	34.6	<25.0
Total BOD	mg/L	<3	<3	<3
Total Organic Carbon	mg/L	6.36	6.91	5.83
Ammonia Nitrogen	mg/L	1.144	2.70	0.655
Organic Nitrogen	mg/L	<1.17	1.73	<0.200
Nitrate Nitrogen	mg/L	4.73	6.40	3.58
Nitrite Nitrogen	mg/L	<0.073	0.197	<0.030
Fluoride	mg/L	0.521	0.557	0.464
Boron	mg/L	0.28	0.31	0.26
Cyanide	µg/L	<4.15	<5.00	1.60
Chloride	mg/L	147	158	134
Sulfate	mg/L	126	139	105
Total Alkalinity	mg/L	170	201	154
Total Hardness	mg/L	223	354	155
Calcium	mg/L	67.8	73.1	62.7
Magnesium	mg/L	20.7	30.3	18.0
Antimony	µg/L	0.60	0.70	0.56
Arsenic	µg/L	1.39	1.74	1.12
Barium	µg/L	78.4	82.4	74.2
Beryllium	µg/L	<0.25	<0.25	<0.25
Cadmium	µg/L	<0.153	<0.20	0.041
Total Chromium	µg/L	0.86	1.18	0.64
Hexavalent Chromium	µg/L	<0.15	<0.30	0.04
Copper	µg/L	4.20	6.16	3.15
Iron	mg/L	0.050	0.064	0.039
Lead	µg/L	0.36	0.72	0.19
Manganese	µg/L	8.67	13.6	1.51
Mercury	µg/L	0.00114	0.0016	0.00022
Nickel	µg/L	2.62	3.92	1.94
Potassium	mg/L	18.2	19.6	17.1
Selenium	µg/L	0.55	0.76	0.26
Silver	µg/L	<0.20	<0.20	<0.20
Sodium	mg/L	128	135	120
Thallium	µg/L	<0.25	<0.25	<0.25
Zinc	µg/L	54.2	73.8	42.5
Detergents (MBAS)	mg/L	<0.10	<0.10	<0.10
Oil and Grease	mg/L	<4.4	<4.9	<4.2
Conductivity	µmhos/cm	1065	1240	912

TABLE B-5
SAN JOSE CREEK WATER RECLAMATION PLANT WEST
RECYCLED WATER QUALITY, FY 2013-14

Constituent	Units	Mean	Maximum	Minimum
pH		7.16	7.50	6.6
Turbidity	NTU	0.66	1.40	0.41
Total Coliform	org./100 ml	<1	42	<1
Fecal Coliform	org./100 ml	<1	<1	<1
Temperature	deg. F	79.4	87	71
Suspended Solids	mg/L	<2.5	4.4	<2.5
Settleable Solids	ml/L	<0.1	<0.1	<0.1
Total Dissolved Solids	mg/L	538	568	498
Total COD	mg/L	<25.5	44.4	<25
Total BOD	mg/L	<3	4.4	<3
Total Organic Carbon	mg/L	5.14	6.33	4.60
Ammonia Nitrogen	mg/L	0.963	2.3	0.637
Organic Nitrogen	mg/L	0.841	1.88	0.268
Nitrate Nitrogen	mg/L	7.11	8.66	5.13
Nitrite Nitrogen	mg/L	<0.048	0.144	<0.030
Fluoride	mg/L	0.721	0.796	0.550
Boron	mg/L	0.31	0.34	0.26
Cyanide	mg/L	<4.09	<5.00	1.36
Chloride	mg/L	111	119	101
Sulfate	mg/L	95.9	104	85.7
Total Alkalinity	mg/L	162	177	134
Total Hardness	mg/L	204	238	184
Calcium	mg/L	60.7	64.0	57.4
Magnesium	mg/L	16.0	16.6	15.1
Antimony	µg/L	0.60	0.78	0.49
Arsenic	µg/L	1.24	1.56	0.92
Barium	µg/L	36.1	38.1	27.5
Beryllium	µg/L	<0.25	<0.25	<0.25
Cadmium	µg/L	0.053	0.060	0.044
Total Chromium	µg/L	1.14	1.54	0.79
Hexavalent Chromium	µg/L	<0.22	0.39	0.07
Copper	µg/L	5.55	6.76	3.97
Iron	mg/L	0.032	0.034	0.029
Lead	µg/L	0.27	0.36	0.23
Manganese	µg/L	5.31	8.36	3.16
Mercury	µg/L	0.00096	0.0015	0.00059
Nickel	µg/L	1.29	1.43	1.08
Potassium	mg/L	15.0	15.5	14.3
Selenium	µg/L	0.34	0.52	0.24
Silver	µg/L	<0.20	<0.20	<0.20
Sodium	mg/L	104.4	111	99.3
Thallium	µg/L	<0.25	<0.25	<0.25
Zinc	µg/L	57.9	63.7	52.1
Detergents (MBAS)	mg/L	<0.10	<0.10	<0.10
Oil and Grease	mg/L	<4.3	<4.5	<4.2
Conductivity	µmhos/cm	909	1070	797

TABLE B-6
WHITTIER NARROWS WATER RECLAMATION PLANT
RECYCLED WATER QUALITY, FY 2013-14

Constituent	Units	Mean	Maximum	Minimum
pH		7.39	7.6	7.2
Turbidity	NTU	0.37	0.70	0.24
Total Coliform	org./100 ml	<1	27	<1
Fecal Coliform	org./100 ml	<1	1	<1
Temperature	deg. F	79.0	85.0	72.4
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	584	620	540
Total COD	mg/L	<25.2	34.7	<25.0
Total BOD	mg/L	<3.0	5.6	<3.0
Total Organic Carbon	mg/L	5.54	6.84	4.77
Ammonia Nitrogen	mg/L	<0.351	1.0	<0.100
Organic Nitrogen	mg/L	0.577	1.07	0.200
Nitrate Nitrogen	mg/L	7.34	8.73	6.25
Nitrite Nitrogen	mg/L	0.088	0.205	<0.030
Fluoride	mg/L	0.730	0.835	0.626
Boron	mg/L	0.26	0.28	0.22
Cyanide	µg/L	<5.00	<5.00	<5.00
Chloride	mg/L	112	117	104
Sulfate	mg/L	111	125	98.9
Total Alkalinity	mg/L	163	189	147
Total Hardness	mg/L	209	252	188
Calcium	mg/L	62.2	67.2	57.2
Magnesium	mg/L	17.6	19.3	16.4
Antimony	µg/L	0.72	0.88	0.53
Arsenic	µg/L	1.14	1.20	1.03
Barium	µg/L	39.4	50.8	23.7
Beryllium	µg/L	<0.25	<0.25	<0.25
Cadmium	µg/L	<0.26	1.4	0.04
Total Chromium	µg/L	1.41	4.86	0.91
Hexavalent Chromium	µg/L	<0.22	0.31	0.08
Copper	µg/L	4.05	5.13	3.13
Iron	µg/L	35.1	52.7	28.2
Lead	µg/L	0.31	1.50	0.16
Manganese	µg/L	1.86	2.13	1.50
Mercury	µg/L	0.00111	0.0016	0.00051
Nickel	µg/L	9.83	20.3	5.82
Potassium	mg/L	14.1	14.5	13.6
Selenium	µg/L	0.48	0.54	0.39
Silver	µg/L	<0.20	<0.20	<0.20
Sodium	mg/L	121	136	114
Thallium	µg/L	<0.25	<0.25	<0.25
Zinc	µg/L	59.9	133.0	46.9
Detergents (MBAS)	mg/L	<0.10	0.10	<0.10
Oil and Grease	mg/L	<4.6	<5.0	<4.4
Conductivity	µmhos/cm	950	1110	714

TABLE B-7
VALENCIA WATER RECLAMATION PLANT
RECYCLED WATER QUALITY, FY 2013-14

Constituent	Units	Mean	Maximum	Minimum
pH		7.40	7.7	6.8
Turbidity	NTU	0.47	0.80	0.30
Total Coliform	org./100 ml	<1	1	<1
Fecal Coliform	org./100 ml	<1	<1	<1
Temperature	deg. F	79.0	85.4	73.4
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	688	781	633
Total COD	mg/L	<25.0	28.1	<25.0
Total BOD	mg/L	<3.2	6.1	<3.0
Ammonia Nitrogen	mg/L	0.959	1.30	0.747
Organic Nitrogen	mg/L	1.078	2.04	0.687
Nitrate Nitrogen	mg/L	2.71	3.65	2.21
Nitrite Nitrogen	mg/L	<0.031	0.036	<0.030
Fluoride	mg/L	0.356	0.422	0.324
Boron	mg/L	0.50	0.58	0.42
Cyanide	µg/L	3.56	4.32	2.84
Chloride	mg/L	130	135	122
Sulfate	mg/L	179	226	152
Total Alkalinity	mg/L	175	224	151
Total Hardness	mg/L	244	390	209
Antimony	µg/L	0.49	0.50	0.48
Arsenic	µg/L	0.59	0.87	0.46
Barium	µg/L	7.18	8.88	6.10
Beryllium	µg/L	<0.25	<0.25	<0.25
Cadmium	µg/L	<0.20	<0.20	<0.20
Total Chromium	µg/L	0.29	0.42	0.23
Hexavalent Chromium	µg/L	<0.17	<0.30	0.04
Copper	µg/L	2.07	2.25	1.71
Iron	µg/L	87.5	260	43.5
Lead	µg/L	0.06	0.08	0.05
Mercury	µg/L	0.00057	0.0011	0.00019
Nickel	µg/L	2.73	2.95	2.56
Selenium	µg/L	0.36	0.59	0.24
Silver	µg/L	<0.20	<0.20	<0.20
Thallium	µg/L	<0.25	<0.25	<0.25
Zinc	µg/L	23.3	24.2	21.5
Detergents (MBAS)	mg/L	<0.10	<0.10	<0.10
Oil and Grease	mg/L	<4.8	<5.1	<4.5
Conductivity	µmhos/cm	1105	1310	944

TABLE B-8
SAUGUS WATER RECLAMATION PLANT
RECYCLED WATER QUALITY, FY 2013-14

Constituent	Units	Mean	Maximum	Minimum
pH		7.44	7.7	7.1
Turbidity	NTU	0.74	1.30	0.42
Total Coliform	org./100 ml	<1	59	<1
Fecal Coliform	org./100 ml	<1	1	<1
Temperature	deg. F	77.7	85.4	71.4
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	566	650	508
Total COD	mg/L	<25.7	32.9	<25.0
Total BOD	mg/L	<3.1	6.6	<3.0
Ammonia Nitrogen	mg/L	1.222	3.69	0.900
Organic Nitrogen	mg/L	1.383	2.96	0.785
Nitrate Nitrogen	mg/L	5.05	5.71	4.20
Nitrite Nitrogen	mg/L	<0.037	0.047	<0.030
Fluoride	mg/L	0.218	0.257	0.200
Boron	mg/L	0.50	0.57	0.40
Cyanide	mg/L	<2.57	<5.00	1.23
Chloride	mg/L	126	135	112
Sulfate	mg/L	105	153	89.9
Total Alkalinity	mg/L	152	187	129
Total Hardness	mg/L	178	261	150
Antimony	µg/L	0.44	0.53	0.33
Arsenic	µg/L	1.21	1.76	0.77
Barium	µg/L	31.6	39.6	28.2
Beryllium	µg/L	<0.25	<0.25	<0.25
Cadmium	µg/L	0.115	<0.20	0.042
Total Chromium	µg/L	0.31	0.37	0.28
Hexavalent Chromium	µg/L	<0.17	<0.30	0.03
Copper	µg/L	8.30	9.28	7.20
Iron	µg/L	31.8	88.5	12.5
Lead	µg/L	0.16	0.18	0.13
Mercury	µg/L	0.00067	0.00086	0.00022
Nickel	µg/L	1.33	1.89	1.08
Selenium	µg/L	0.45	0.62	0.28
Silver	µg/L	<0.20	<0.20	<0.20
Thallium	µg/L	<0.25	<0.25	<0.25
Zinc	µg/L	58.0	59.8	55.4
Detergents (MBAS)	mg/L	<0.10	<0.10	<0.10
Oil and Grease	mg/L	<4.4	<4.5	<4.4
Conductivity	µmhos/cm	930	1070	758

TABLE B-9
LANCASTER WATER RECLAMATION PLANT
RECYCLED WATER QUALITY, FY 2013-14

Constituent	Units	Mean	Maximum	Minimum
pH		7.41	7.9	6.6
Turbidity	NTU	0.63	1.60	0.35
Total Coliform	org./100 ml	<1	2	<1
Temperature	deg. F	72.2	84.7	59.5
Suspended Solids	mg/L	<2.5	<2.5	<2.5
Total Dissolved Solids	mg/L	464	522	424
Total COD	mg/L	<25.0	<25.0	<25.0
Total BOD	mg/L	<3.0	<3.0	<3.0
Total Organic Carbon	mg/L	5.10	5.46	4.66
Ammonia Nitrogen	mg/L	2.23	4.24	1.29
Nitrate Nitrogen	mg/L	7.65	8.89	5.55
Nitrite Nitrogen	mg/L	<0.047	0.064	<0.030
Cyanide	mg/L	0.0032	<0.005	0.0011
Chloride	mg/L	132	172	112
Sulfate	mg/L	69.4	78.8	63.3
Total Alkalinity	mg/L	117	133	983
Total Hardness	mg/L	109	121	94
Calcium	mg/L	35.5	42.9	30.4
Magnesium	mg/L	8.3	11	6.5
Antimony	µg/L	0.55	0.55	0.54
Arsenic	µg/L	0.83	0.99	0.67
Barium	µg/L	13.2	15.0	11.3
Beryllium	µg/L	<0.25	<0.25	<0.25
Cadmium	µg/L	<0.20	<0.20	<0.20
Total Chromium	µg/L	0.82	0.99	0.65
Hexavalent Chromium	µg/L	0.05	0.05	0.05
Copper	µg/L	1.40	1.70	1.09
Iron	mg/L	0.08	0.09	0.06
Lead	µg/L	0.06	0.07	0.04
Manganese	µg/L	20.6	28.2	13.0
Mercury	µg/L	<0.04	<0.04	<0.04
Nickel	µg/L	1.34	1.44	1.24
Potassium	mg/L	14.1	14.6	13.6
Selenium	µg/L	0.36	0.47	0.25
Silver	µg/L	<0.20	<0.20	<0.20
Sodium	mg/L	124	150	107
Thallium	µg/L	<0.25	<0.25	<0.25
Zinc	µg/L	93.0	135	50.9
Detergents (MBAS)	mg/L	<0.10	<0.10	<0.10
Conductivity	µmhos/cm	757	888	692

TABLE B-10
PALMDALE WATER RECLAMATION PLANT
RECYCLED WATER QUALITY, FY 2013-14

Constituent	Units	Mean	Maximum	Minimum
pH		7.20	7.6	6.9
Turbidity	NTU	0.61	4.98	0.30
Total Coliform	org./100 ml	<1	2	<1
Temperature	deg. F	73.4	84.7	62.6
Suspended Solids	mg/L	<2.5	<2.5	<2.5
Total Dissolved Solids	mg/L	479	518	456
Total COD	mg/L	<25.6	30.8	<25.0
Total BOD	mg/L	<3.0	<3.0	<3.0
Total Organic Carbon	mg/L	5.27	5.45	4.88
Ammonia Nitrogen	mg/L	2.37	6.48	1.56
Nitrate Nitrogen	mg/L	3.23	8.46	1.95
Nitrite Nitrogen	mg/L	<0.060	0.146	<0.030
Cyanide	mg/L	<0.0050	<0.0050	<0.0050
Chloride	mg/L	134	155	113
Sulfate	mg/L	73.6	77.6	69.0
Calcium	mg/L	36.4	38.7	33.8
Magnesium	mg/L	9.3	12.5	6.5
Antimony	µg/L	0.37	0.39	0.35
Arsenic	µg/L	0.55	0.68	0.42
Beryllium	µg/L	<0.25	<0.25	<0.25
Cadmium	µg/L	<0.20	<0.20	<0.20
Total Chromium	µg/L	0.97	1.27	0.66
Hexavalent Chromium	µg/L	<0.05	<0.05	<0.05
Copper	µg/L	2.00	2.14	1.86
Lead	µg/L	0.06	0.07	0.05
Mercury	µg/L	0.00084	0.00086	0.00082
Nickel	µg/L	0.98	1.21	0.74
Selenium	µg/L	0.26	0.30	0.21
Silver	µg/L	<0.20	<0.20	<0.20
Sodium	mg/L	121	125	118
Thallium	µg/L	<0.25	<0.25	<0.25
Zinc	µg/L	76.7	85.1	68.3
Detergents (MBAS)	mg/L	<0.10	<0.10	<0.10

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.

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-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-lined and coated steel, while 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 serve 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.

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 cement-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 cement-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-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-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-lined and coated 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 di-eccentric 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-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 and 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.

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-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-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 and 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-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 continues 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.

For the Rosemead Extension, 3,633 feet of 12-inch line runs west from the Golf Course along Garvey Avenue between River Avenue and Earle Avenue, with two, short 6-inch laterals running north on Willard Avenue and Earle Avenue (761 and 822 feet, respectively). A 6,393 foot, 8-inch line tees off of the 12-inch line on Garvey and runs south on Walnut Grove Avenue to a point just north of Cameta Drive. From this 8-inch line, a 180 foot, 4-inch lateral branches off to the west at Gravalia Avenue, a 1,440 foot, 6-inch lateral branches off to the east on Klingerman Street, and a 1,258 foot, 6-inch line branches off to the west on Rush Street.

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.