

CITY OF DOWNEY

2010

Urban Water Management Plan



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**SECTION 1
PLAN PREPARATION**

1.1 BACKGROUND

Section 10617.

“Urban Water Supplier” means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers.

Section 10620.

(a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

(c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.

(d) (1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.

(2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.

This Urban Water Management Plan (Plan or UWMP) was prepared in accordance with the California Urban Water Management Planning Act (Act)¹ which was established in 1983. The Act requires every “Urban Water Supplier” to prepare and adopt a Plan, to periodically review its Plan at least once every five years and make any amendments or changes which are indicated by the review. An “Urban Water Supplier” is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more

¹ California Water Code Sections 10610 through 10656

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than 3,000 acre-feet of water annually. The City of Downey (City or Downey) is an urban water supplier and is required to prepare a Plan in accordance with the Act. The primary objective of the Act is to require urban water suppliers to evaluate the reliability of their water sources over a 20-year planning horizon to ensure adequate water supplies are available to meet existing and future water demands. Sections 10610 through 10656 of the California Water Code, also known as the Urban Water Management Planning Act, were enacted in 1983. The Act, originally known as Assembly Bill (AB) 797, is included in Appendix A.

There have been many amendments to the Act and some reorganization of the California Water Code sections pertaining to the Act since 2005. The amendments and changes follow:

- Senate Bill (SB) 1087 – Requires reporting of water use projections for lower income households
- AB 1376 – Requires the City to provide a minimum 60 day notice prior to a public hearing, to any city or county within which the City provides water supplies notifying that the City is reviewing its Plan and is considering changes
- AB 1420 – Conditions state funding on completion of the Plan
- SBX7-7 – Requires a 20 percent reduction in urban per capita water use by 2020 (see Appendix B).

Section 10621(a) of the California Water Code states, “Each water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero.” SBX7-7 extended the adoption date of the 2010 Plan to July 1, 2011 to accommodate the inclusion of the latest water conservation requirements. The City’s 2010 Plan is an update to the City’s 2005 Plan.

1.2 COORDINATION

1.2.1 COORDINATION WITH APPROPRIATE AGENCIES

Section 10620.

(d) (2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

The City is required to coordinate the preparation of its Plan with appropriate agencies in the area, including water suppliers that share a common source. Therefore, the City coordinated the preparation of its Plan with the City of Downey City Clerk, City of Bellflower, City of Santa Fe Springs, City of South Gate, County of Los Angeles, Bellflower Municipal Water System (BMWS), Golden State Water Company (GSWC), Central Basin Municipal Water District (CBMWD), and County Sanitation Districts of Los Angeles County (CSDLAC) (see Table 1-1). The City notified these agencies of the preparation of its 2010 Plan and invited them to participate in its development. Copies of the notification letters sent to these agencies are located in Appendix C. Table 1-1 summarizes the City's coordination with appropriate agencies regarding the preparation of the 2010 Plan.

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**Table 1-1 Coordination with Appropriate Agencies
(DWR Guidebook² Table 1)**

Table 1 Coordination with appropriate agencies							
Coordinating Agencies ^{1,2}	Participated in developing the plan	Commented on the draft	Attended public meetings	Was contacted for assistance	Was sent a copy of the draft plan	Was sent a notice of intention to adopt	Not involved / No information
City of Downey	X	X	X	X	X	X	
City of Bellflower					X	X	
City of South Gate					X	X	
City of Santa Fe Springs					X	X	
County of Los Angeles					X	X	
Bellflower Municipal Water System					X	X	
Golden State Water Company					X	X	
County Sanitation Districts of LAC				X	X	X	
Central Basin MWD				X	X	X	
Other							

¹ Indicate the specific name of the agency with which coordination or outreach occurred.
² Check at least one box in each row.

1.2.2 NOTIFICATION TO CITIES AND COUNTIES

Section 10621

(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notices pursuant to this subdivision.

The City encouraged the active involvement of the population within its service area prior to and during the preparation of the Plan. Pursuant to Section 6066 of the Government Code, the City published a notice of public hearing regarding the proposed adoption of the 2010 Plan in The Downey Patriot, a local newspaper, on December 22, 2011 and December 29, 2011. Copies of the notice of public hearing were also provided to the City Clerk's office and posted on the City's website as well as at the Downey City Library, Barbara J. Riley Community and Senior Center, and Downey City Hall. Additionally, a notice of public hearing and draft copies of the Plan were sent to the City of Bellflower, City of Santa Fe Springs, City of South Gate, County of Los Angeles, BMWS, GSWC, CBMWD, and CSDLAC for review and comment. To ensure

² State of California, Department of Water Resources (DWR), 2011. *Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan, Final*. March 2011.

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that the Plan was available for public review and comment, the City placed copies of the draft 2010 Plan at the City Clerk's Office, Department of Public Works counter, Downey City Library, and on the City's website. Copies of the notice of public hearing are provided in Appendix D.

1.2.3 PLAN DISTRIBUTION

Section 10635(b)

The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after submission of its urban water management plan.

The City will provide copies of its final Plan to the City of Downey City Clerk, City of Bellflower, City of Santa Fe Springs, City of South Gate, County of Los Angeles, BMWS, GSWC, CBMWD, and CSDLAC no later than 60 days after submission of its Plan to the State of California Department of Water Resources (DWR). A copy of the letter transmitting the 2010 Plan to each of these cities and county will be maintained in the City's files to document compliance with the Plan distribution requirement as provided in Section 10635(b) of the California Water Code identified above.

1.2.4 PUBLIC PARTICIPATION

Section 10642

Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

The City made the draft 2010 Plan available for public review at the City Clerk's office, Department of Public Works counter, Downey City Library, and on the City

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website. Public notification of the hearing, including the time, place, and location of the hearing as well as the availability of the draft Plan for public review, was made in The Downey Patriot, a local newspaper, pursuant to Section 6066 of the Government Code (see Appendix D). Notice of the time, place, and location of the public hearing was also provided to the City of Downey City Clerk, City of Bellflower, City of Santa Fe Springs, City of South Gate, County of Los Angeles, BMWS, GSWC, CBMWD, and CSDLAC (see Appendix D).

The notice of public hearing was published and the Plan distributed and made available for review to help encourage involvement of all elements of the City's population during development of the plan.

1.3 PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

1.3.1 SUBMITTAL OF AMENDED PLAN

Section 10621

c) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

If DWR requires significant changes to the 2010 Plan before it determines the Plan to be "complete," the City will submit an amendment or a revised Plan. The amendment or revised Plan will undergo adoption by the City Council prior to submittal to DWR if deemed necessary by the City.

1.3.2 PLAN ADOPTION

Section 10642

After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

The City held a public hearing on January 10, 2012. Following the public hearing, the City adopted the proposed Plan. A copy of the resolution adopting the Plan is provided in Appendix E.

1.3.3 PLAN IMPLEMENTATION

Section 10643

An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

The City is committed to the implementation of its 2010 Plan in accordance with Section 10643 of the Act, including the water demand management measures (DMMs) (see Section 6) and water conservation requirements of SBX7-7 (see Section 3). The City continues to be committed to the concept of good water management practice and intends to expand its water conservation program as budgets and staffing allow. The City's water conservation program will periodically be re-evaluated and modified to institute additional methods or techniques as needs arise. The City reviewed implementation of its 2005 Plan and incorporated changes to create the 2010 Plan.

1.3.4 PLAN SUBMITTAL

Section 10644(a)

An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

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Copies of the Plan will be filed with DWR, the California State Library, County of Los Angeles, City of Downey City Clerk, City of Bellflower, City of Santa Fe Springs, City of South Gate, BMWS, GSWC, CBMWD, and CSDLAC within 30 days of adoption. Copies of the transmittal letters will be maintained in the City's Plan files.

1.3.5 PUBLIC REVIEW

Section 10645

Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

Within 30 days after submittal of the 2010 Plan to DWR, the City will make the Plan available for public review on the City website and at the Downey City Library and Public Works Department during normal business hours.

SECTION 2

SYSTEM DESCRIPTION

2.1 BACKGROUND

2.1.1 CITY OF DOWNEY

The City of Downey is located in an urbanized community approximately 12 miles southeast of downtown Los Angeles (Figures 2-1 and 2-2). The City was incorporated in 1956 as a general law city and became a charter city in 1964. The City of Downey is bounded by the San Gabriel River to the east, Telegraph Road to the north, the Rio Hondo River to the west, and Gardendale Street and Foster Road to the south.

The City of Downey encompasses approximately 12.8 square miles of land and its topography is relatively level. Ground surface elevations range from approximately 85 feet above mean sea level in the southerly portion to 140 feet in the northerly most portion of the City.

Based on the City's General Plan, land use within the City of Downey has been designated as follows: 61 percent residential, 3 percent office, 8 percent commercial, 7 percent industrial, 5 percent mixed use, 8 percent public (including schools), and 8 percent open space.

The City's water system currently serves a population of approximately 110,457 (or approximately 98.8 percent of the City of Downey) through approximately 22,600 service connections. The remaining portions of the City of Downey, including the area that lies east of the San Gabriel River, south of the Interstate-5 Freeway, and north of Cecilia Avenue, are currently served by other water purveyors.

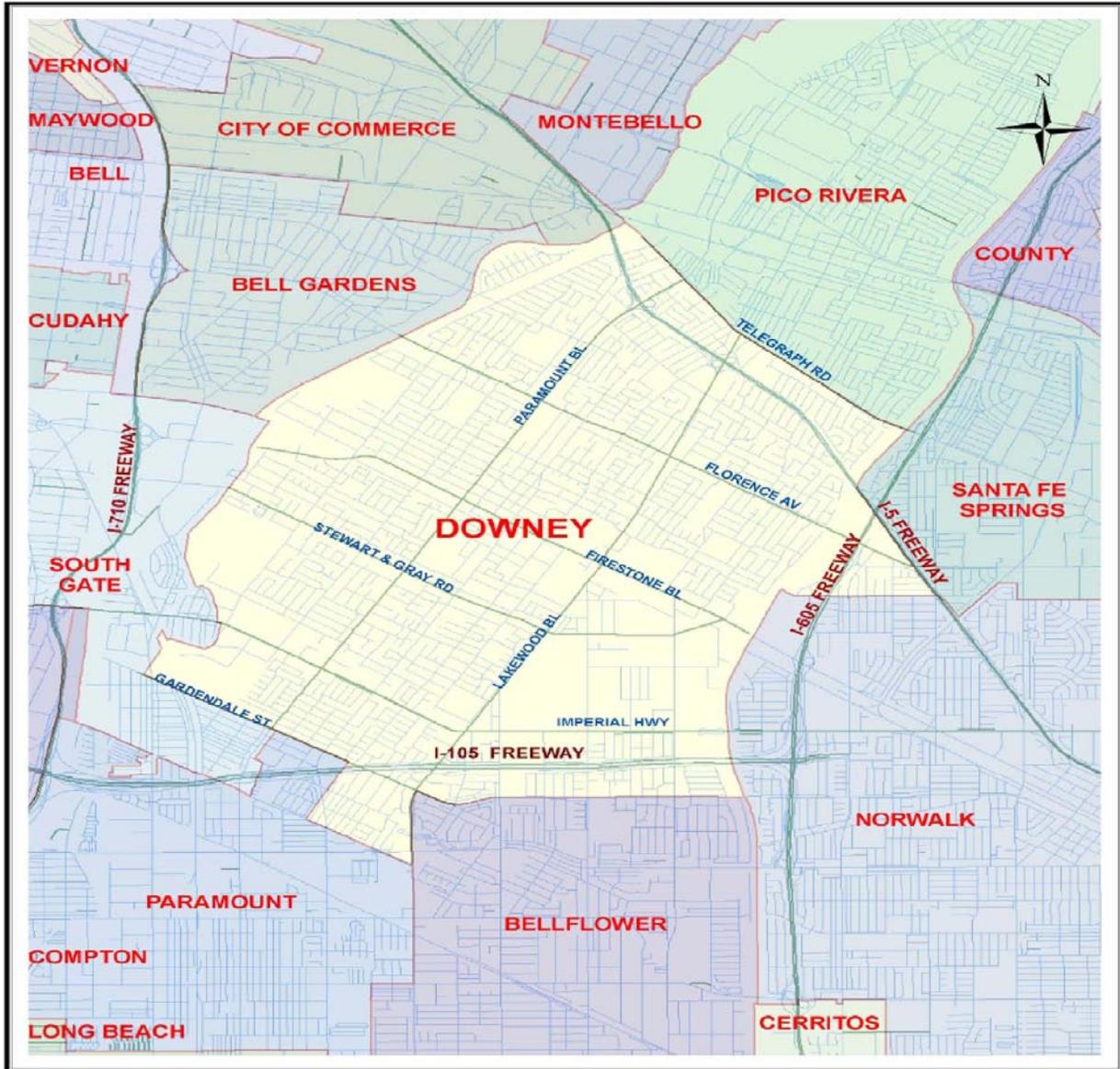
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Figure 2-1 City of Downey Regional Map



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Figure 2-2 City of Downey Location Map



2.1.2 WATER SYSTEM

The City overlies the Central Basin. Groundwater from the Central Basin is pumped from wells located within the City's boundaries and provides the City with its principal source of potable water.

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The groundwater available to the City is of good quality and is currently extracted and pumped directly into the water transmission and distribution systems without disinfection or treatment of any kind. As a result of the use of this high quality groundwater, the City enjoys one of the least expensive water rates in the area.

Until fiscal year (FY) 2000-01, the City purchased small amounts of treated imported water from CBMWD when needed to augment the City's annual potable water supplies. Beginning in FY 2000-01, groundwater became the sole source of drinking water for the City. Due to the high cost of the imported CBMWD water, the City intends to rely solely on its groundwater wells to meet the potable water demands of its customers into the future. However, the City will continue to maintain its imported water connections with CBMWD by paying readiness-to-serve and capacity charges to CBMWD in the event this water is ever needed for emergency purposes.

Emergency interconnections (See Section 2.1.2.4) with adjacent water agencies are also maintained and serve as supplemental sources of water in the event of an emergency.

The City also purchases recycled water from CBMWD and re-sells the recycled water to its customers at a discount of 15 percent from the current rate for domestic water to help promote this potable water conservation measure. Recycled water is presently used for irrigation of landscaping and in several park ponds within the City of Downey (See Section 2.1.2.7) and makes up approximately 4 percent of the City's overall water demand.

2.1.2.1 GROUNDWATER WELLS

There are a total of 31 wells in the City's water system of which 20 are active and available to produce groundwater. These 20 wells have a combined production capacity of approximately 53,200 acre-feet per year (AFY) (theoretical capacity based

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on continuous operations) and serve as the City's principle source of potable water. Of the remaining eleven wells, seven are abandoned (destroyed) and four are inactive. The four inactive wells have low production capacities and are considered to be susceptible to groundwater contamination as they are screened in shallow aquifers. The City plans to abandon (destroy) these four wells in accordance with DWR standards in the near future. Table 2-1 provides a summary of the City's 20 active wells and associated capacities. As previously expressed, each of the active wells pumps directly into the water transmission/distribution system without disinfection or treatment of any kind.

Table 2-1 Groundwater Production Wells

City Well No.	Operational Status	Capacity (gpm)^[2]	Capacity (AFY)^[3]	Well Depth (feet)	Casing Diameter (inches)
2	Active	1,940	3,129	674	16
4	Active	4,567	7,367	1,160	18
5	Active	720	1,161	520	12
7	Active	934	1,507	686	14
8	Active	1,800	2,903	592	16
9	Active	1,095	1,766	594	16
10 ^[1]	Active	1,700	2,742	650	16
11 ^[1]	Active	4,500	7,259	980	20
12	Active	1,800	2,903	444	16
14	Active	866	1,397	572	16
15	Active	1,262	2,036	878	16
16 ^[1]	Active	1,600	2,581	866	16
17	Active	868	1,400	454	16
18 ^[1]	Active	1,863	3,005	674	16
19	Active	1,015	1,637	551	16
23	Active	1,200	1,936	646	16
24 ^[1]	Active	1,759	2,837	544	16
25	Active	1,200	1,936	438	16
29	Active	1,100	1,774	642	16
30	Active	1,200	1,936	662	16
Active Capacity		32,989	53,211		

Notes:

[1] Equipped with Variable Frequency Drives (VFDs)

[2] gpm = gallons per minute

[3] Capacity is based on continuous operations

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The City's water system operates as a closed system within one pressure zone and there are no elevated storage tanks to control the hydraulic grade line. The number of wells that are operational at any given time is based on the system demand.

A 450 megahertz Ultra High Frequency radio system, with peer-to-peer technology, allows the wells to communicate with the central control unit and each other. The City also utilizes Supervisory Control and Data Acquisition (SCADA) software. The SCADA system utilizes a pressure transducer located at the Utilities Yard office to monitor system pressure. A predetermined pump/well sequence control strategy is used to stage pumps on/off based on a pressure-operating band. A system pressure of 60 to 70 pounds per square inch (psi) is desired. When the pressure drops below the pre-determined set point of 60 psi, an additional well is turned on. If the pressure returns to a pre-determined set point of 70 psi, the well is turned off. If the pressure continues to drop, one or more wells, based on the predetermined sequence, are turned on. Once pressure returns to 70 psi, wells are turned off in the reverse sequence of when they were turned on until the pressure remains steady between 60 and 70 psi.

In addition to the centralized pressure transducer located at the Utilities Yard, pressure transducers and associated wiring have also been installed by the City at each of the 20 active groundwater wells. SCADA logic was recently updated to allow such wells to operate based upon localized pressure readings at each well in the event communication with the Master Remote Terminal Unit and associated centralized pressure control is lost.

The wells can also be controlled from Mercoid switches at individual wells and respond to local pressure, by time clocks from the SCADA system or well sites, or manually from switches from the SCADA system or the well sites.

2.1.2.2 IMPORTED WATER MANAGEMENT

If necessary, groundwater can be supplemented with imported water delivered through CBMWD. CBMWD is a member agency of the Metropolitan Water District of Southern California (MWD) which supplies treated, imported water to CBMWD. There are a total of 27 MWD member agencies. MWD provides imported water to much of the southern California coastal plain, including portions of Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura Counties. The imported water originates from the State Water Project (SWP) in northern California and the Colorado River Aqueduct. Imported water delivered by MWD has been treated by MWD and is of good quality.

Imported water is actively managed by MWD through the activities described in its Plan, as well as its Integrated Resources Plan (IRP) and Water Surplus and Drought Management Plan (WSDM). MWD's rights to Colorado River water are governed by the provisions of the 1931 Seven-Party Agreement, 1964 U.S. Supreme Court Decree in *Arizona v. California*, and the present perfected rights possessed by certain Indian reservations and other users in California. SWP deliveries are determined by DWR based on the availability of the water (i.e., precipitation, snowpack of the present and past years) and the effect of SWP operations on biological resources. Estimates of deliveries are based on the amount of water in SWP storage reservoirs, a conservative projection of runoff for the remainder of the year, contractor requests, and SWP operational constraints. These estimates are updated periodically through the spring and summer. Both SWP and Colorado River Aqueduct water are subject to curtailment in dry years. MWD is working to improve the reliability of these sources.

2.1.2.3 PURCHASED WATER CONNECTIONS

The City maintains three connections with CBMWD, designated CENB-18, CENB-20, and CENB-21. Due to the high cost associated with water purchased from CBMWD, these connections are only utilized for emergencies in the event system

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demand exceeds the production capacity of the City's groundwater wells. Water purchased from CBMWD is delivered to the City through the MWD Lower Feeder, which runs through the middle of Downey in an east-west direction.

CENB-18 must be opened manually if system demand requires use of this connection. CENB-20 and CENB-21 are set to operate when system pressure decreases to predetermined minimum pressures of 38 and 40 psi, respectively, which are lower than the minimum system pressure of 60 psi established for the groundwater wells. Both of these connections are set to shut down when the system pressure increases to a predetermined maximum pressure of 65 psi. Due to the ease of the pressure-regulated operation, CENB-20 and CENB-21 are always turned on prior to CENB-18 when system demand exceeds the production capacity of the City's groundwater wells. Table 2-2 provides a summary of the City's imported water connections with CBMWD.

Table 2-2 Purchased Water Connections

Purchased Water Connection	Capacity (gpm)^[1]	Capacity (AFY)^[2]	Diameter (inches)	Operational Status
CENB-18	6,732	10,859	12	Emergency
CENB-20	8,976	14,478	20	Emergency
CENB-21	8,976	14,478	20	Emergency
Total	24,684	39,815		

Notes:

[1] gpm = gallons per minute

[2] Based on continuous operation

2.1.2.4 EMERGENCY INTERCONNECTIONS

The City maintains five emergency interconnections with adjacent water agencies. Two of the interconnections are equipped with two-way valves, which have the ability of providing water both to and from the City. Of the remaining three interconnections, one has the ability of providing water to the City and the other two are equipped with one-way valves which presently have the ability of providing City water to

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the corresponding agencies. The total capacity of the three emergency connections which are able to provide the City with water is approximately 8,000 gallons per minute.

Four of the interconnections are presently in standby mode, with valves on either side of each interconnection closed. In addition, two (Bellflower-Somerset and Santa Fe Springs) of these interconnections lack working meters. Meters would have to be installed prior to use of the Bellflower-Somerset or Santa Fe Springs standby interconnections. Operations personnel from both the City and the respective agency would be required to arrive at the location to open the respective valves and flush the systems prior to full operation of any standby interconnection. The fifth interconnection is set to open and provide water to Bellflower Municipal Water System should pressures in their system drop below a predetermined pressure. This connection is maintained for emergency purposes for Bellflower Municipal Water System and is rarely activated. Table 2-3 provides a summary of the City’s emergency interconnections.

Table 2-3 Emergency Interconnections

Agency	Capacity (gpm)^[2]	Capacity (AFY)	Diameter (inches)	Operational Status
Bellflower-Somerset Mutual Water Co.	2,000	3,226	8	One-way, no meter, standby (Bellflower Somerset to City)
City of Santa Fe Springs	4,000	6,452	12	Two-way, no meter, standby
City of South Gate	2,000	3,226	8	Two-way, metered, standby
Golden State Water Co.	1,000	1,613	6	One-way, metered, standby (City to Golden State Water)
Bellflower Municipal Water System	750	1,210	4	One-way, metered, automatic (City to Bellflower Municipal)
Total (to City)^[1]	8,000	12,904		

Notes:

[1] Present capacity of emergency interconnections (metered and non-metered) to the City only

[2] gpm = gallons per minute

2.1.2.5 TRANSMISSION AND DISTRIBUTION SYSTEM

The City has approximately 22,600 service connections located throughout the City’s service area. All groundwater wells, purchased water connections, and

emergency interconnections pump directly into the City's water transmission/distribution system to be delivered throughout the City's service area. The system consists of large (12 to 24-inch) ductile iron transmission mains along the City's major arterials: Paramount Boulevard, Lakewood Boulevard, Woodruff Avenue, Imperial Highway, Stewart and Gray Road, Firestone Boulevard, and Telegraph Road. These transmission mains act as conduits for moving large volumes of water throughout the City's service area into distribution mains (4 to 10-inch) for delivery to the City's customers. The transmission/distribution system contains approximately 270 miles of intersecting, looped piping. The piping is primarily composed of ductile iron or cast iron (98 percent), and ranges in diameter from 4 to 24 inches with the majority (92 percent) of the piping in the 4 to 8 inch range.

2.1.2.6 WATER STORAGE AND BOOSTER PUMP STATIONS

A circular, 165-foot (diameter) by 30-foot (height), 5 million gallon (MG), pre-stressed concrete reservoir is located at the City Utilities Yard. This reservoir, which was used in the past to help balance system pressure and as a surge tank, has not been used for over twenty years due to the installation of the computerized SCADA system that controls the operation of the wells.

The reservoir is equipped with a booster station. The booster station consists of two, 2,000 gallon per minute (gpm), vertical, turbine pumps capable of transferring water back into the transmission/distribution system through a 20-inch cast iron transmission main running from the booster station down Stewart and Gray Road. This booster station has been out of service since the reservoir was taken out of service.

The City recently rehabilitated the reservoir booster pumps, valves, and other appurtenances allowing for quick reinstatement of this water supply facility should it ever be needed in an effort to increase the reliability of the City's water system.

2.1.2.7 RECYCLED WATER SUPPLY AND DISTRIBUTION

The City receives its recycled water supply from CBMWD as part of the Central Basin Recycled Water Project (CBRWP). CBMWD purchases and resells tertiary-treated recycled water produced at CSDLAC's Los Coyotes and San Jose Creek Water Reclamation Plants (WRPs). Recycled water received by the City is generated from CSDLAC's Los Coyotes WRP.

2.2 SERVICE AREA PHYSICAL DESCRIPTION

Section 10631.

A plan shall be adopted in accordance with this chapter and shall do the following:

a) Describe the service area of the supplier; including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

2.2.1 SERVICE AREA

The City of Downey is located in an urbanized community approximately 12 miles southeast of downtown Los Angeles (Figure 2-1). The City of Downey is bounded by the San Gabriel River to the east, Telegraph Road to the north, the Rio Hondo to the west, and Gardendale Street and Foster Road to the south (Figure 2-2).

The City of Downey contains approximately 12.8 square miles of land and its topography is relatively level. Its elevations range from approximately 85 feet above sea level in the southern portion to 140 feet in the northern-most portion. The average elevation is 113 feet above sea level.

Based on the City's General Plan, land use within the City of Downey has been designated as follows: 61 percent residential, 3 percent office, 8 percent commercial, 7

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percent industrial, 5 percent mixed use, 8 percent public (including schools), and 8 percent open space.

The City's water system serves a population of approximately 110,457 (or approximately 98.8 percent of the City of Downey) through about 22,600 service connections. The remaining portions of the City of Downey, including the area that lies east of the San Gabriel River, south of the Interstate-5 Freeway, and north of Cecilia Avenue, are currently served by other water purveyors.

2.2.2 CLIMATE

The City has a typical southern California climate comprised of warm-dry summers, and wet-cool winters. Historical average annual rainfall is approximately 14.3 inches per year as shown in Table 2-4. Table 2-5 provides average monthly rainfall, average monthly temperature and monthly evapotranspiration. Although changes in climatic conditions would have an impact on the City's water system, the projected water supplies and demands for the City will be based on average year, single dry year, and multiple-dry year data.

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Table 2-4 Historical Rainfall

Water Year	Rainfall (inches)	Water Year	Rainfall (inches)	Water Year	Rainfall (inches)	Water Year	Rainfall (inches)
1925-26	12.63	1950-51	8.27	1975-76	9.55	2000-01	15.60
1926-27	17.33	1951-52	24.68	1976-77	11.23	2001-02	2.80
1927-28	12.12	1952-53	10.53	1977-78	33.85	2002-03	16.93
1928-29	11.48	1953-54	12.33	1978-79	18.68	2003-04	9.37
1929-30	10.84	1954-55	11.84	1979-80	28.29	2004-05	24.86
1930-31	10.15	1955-56	13.97	1980-81	8.74	2005-06	11.36
1931-32	14.37	1956-57	9.89	1981-82	13.41	2006-07	2.85
1932-33	10.02	1957-58	24.65	1982-83	30.30	2007-08	17.11
1933-34	11.10	1958-59	6.68	1983-84	11.96	2008-09	9.49
1934-35	21.94	1959-60	9.84	1984-85	11.96	2009-10	13.02
1935-36	9.65	1960-61	4.30	1985-86	19.47		
1936-37	22.11	1961-62	18.46	1986-87	6.49		
1937-38	21.75	1962-63	10.90	1987-88	11.47		
1938-39	18.69	1963-64	6.86	1988-89	7.82		
1939-40	12.81	1964-65	13.27	1989-90	7.87		
1940-41	34.21	1965-66	17.02	1990-91	12.22		
1941-42	14.66	1966-67	17.78	1991-92	16.07		
1942-43	17.91	1967-68	11.46	1992-93	26.55		
1943-44	17.89	1968-69	22.33	1993-94	9.26		
1944-45	11.25	1969-70	7.52	1994-95	26.82		
1945-46	10.31	1970-71	11.45	1995-96	10.68		
1946-47	15.24	1971-72	6.40	1996-97	13.95		
1947-48	8.62	1972-73	18.57	1997-98	32.72		
1948-49	9.04	1973-74	14.51	1998-99	7.29		
1949-50	10.14	1974-75	15.01	1999-00	9.21		
85-Year Average				14.28			

Source: County of Los Angeles, Department of Public Works – City of Downey Fire Department, Station 107D

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Table 2-5 Climate

	Jan	Feb	Mar	Apr	May	Jun
Evapotranspiration (in.)^[1]	1.65	2.15	3.59	4.77	5.12	5.71
Average Rainfall (in.)^[2]	2.99	3.45	2.26	1.04	0.18	0.06
Average Temperature (F)^[3]	58.6	60.0	61.7	65.3	68.2	72.3
Maximum Average Temperature (F)^[3]	64.4	65.0	66.4	69.9	74.1	76.8
Minimum Average Temperature (F)^[3]	54.9	56.1	57.3	61.2	63.8	67.2

	Jul	Aug	Sep	Oct	Nov	Dec	Total
Evapotranspiration (in.)^[1]	5.93	5.91	4.39	3.22	2.18	1.68	46.3
Average Rainfall (in.)^[2]	0.02	0.07	0.22	0.44	1.33	2.22	14.28
Average Temperature (F)^[3]	76.4	77.4	75.8	70.4	63.4	59.0	67.0
Maximum Average Temperature (F)^[3]	79.9	80.7	82.4	75.0	66.4	62.2	68.0
Minimum Average Temperature (F)^[3]	72.2	74.4	69.8	66.9	59.5	54.7	66.0

Notes:

[1] Evapotranspiration data from California Irrigation Management Information System (Long Beach Station)

[2] Rainfall data from County of Los Angeles, Department of Public Works – City of Downey Fire Department, Station 107D

[3] Temperature data from Western Regional Climate Center and National Oceanic and Atmospheric Administration (Montebello Station)

2.3 SERVICE AREA POPULATION

Section 10631.

A plan shall be adopted in accordance with this chapter and shall do the following:

a) Describe the service area of the supplier; including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

2.3.1 POPULATION

Present and projected populations served water by the City are provided in Table 2-6. Population estimates for 2010 are based upon data collected from the US Census Bureau and the State of California Department of Finance (DOF). Population projections through FY 2029-30 were developed based upon projected percent increases in the City's population, as determined by the Southern California Association of Governments (SCAG). The SCAG data incorporates demographic trends, existing

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land use, general plan land use policies, and input and projections from the DOF and US Census Bureau.

Table 2-6 Service Area Population – Current and Projected
(DWR Guidebook Table 2)

Table 2 Population – current and projected							
	2010	2015	2020	2025	2030	2035 - optional	Data source ²
Service area population¹	110,457	113,606	116,872	118,960	121,084	--	US Census, DOF, SCAG
¹ Service area population is defined as the population served by the City's water supply and distribution system, i.e., 98.8 percent of the total population of the City of Downey. ² DOF = California Department of Finance. SCAG = Southern California Association of Governments.							

2.3.2 OTHER DEMOGRAPHIC FACTORS

There are no other demographic factors affecting the City's water management planning.

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SECTION 3 SYSTEM DEMANDS

3.1 WATER DEMANDS

3.1.1 PAST, CURRENT, AND PROJECTED WATER DEMAND

Section 10631(e)

(1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:

- (A) Single-family residential.*
- (B) Multifamily.*
- (C) Commercial.*
- (D) Industrial.*
- (E) Institutional and governmental.*
- (F) Landscape.*
- (G) Sales to other agencies.*
- (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.*
- (I) Agricultural*

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

The City's water supply sources include groundwater pumped from the Central Basin, connections with CBMWD for delivery of treated water imported from the Colorado River and the State Water Project, and recycled water. The City's main source of water is groundwater pumped from the Central Basin. The City provides water service to the following water use sectors:

- Residential (Single-Family and Multi-Family)
- Commercial
- Industrial
- Government/Institutional
- Landscape Irrigation.

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Table 3-1 and Table 3-2 show the past and current water use, among water use sectors, within the City’s service area. Projected water use is calculated based on the urban per capita water use target developed per SBX7-7 (see Section 3.2 below) and population projections. Based on these projections, the City anticipates it will be able to meet future water demands.

Table 3-1 Water Deliveries – Actual, 2005
(DWR Guidebook Table 3)

Table 3					
Water deliveries – actual, 2005					
	2005				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	18,637	9,516			9,516
Multi-family	1,935	3,376			3,376
Commercial	1,249	1,820			1,820
Industrial	39	1,007			1,007
Institutional/governmental	241	679			679
Landscape	111	179			179
Agriculture					0
Fire hydrant/service/construction	301	83			83
Operation and maintenance			0	33	33
Total	22,514	16,660	0	33	16,693

Units are in acre-feet per year.

Table 3-2 Water Deliveries – Actual, 2010
(DWR Guidebook Table 4)

Table 4					
Water deliveries – actual, 2010					
	2010				
	Metered		Not metered		Total
Water use sectors	# of accounts	Volume	# of accounts	Volume	Volume
Single family	18,663	8,493			8,493
Multi-family	1,940	3,248			3,248
Commercial	1,252	1,819			1,819
Industrial	39	964			964
Institutional/governmental	241	611			611
Landscape	111	234			234
Agriculture					0
Fire hydrant/service/construction	302	21			21
Operation and maintenance			0	29	29
Total	22,548	15,390	0	29	15,419

Units are in acre-feet per year.

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3.2 BASELINES AND TARGETS

Section 10608.20 (e)

An urban retail water supplier shall include in its urban water management plan required pursuant to Part 2.6 (commencing with Section 10610) due in 2010 the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the basis for determining those estimates, including references to supporting data.

Methodologies for calculating baseline and compliance urban per capita water use consistent with the Water Conservation Act of 2009 (SBX7-7) were published by DWR in its October 2010 guidance document.³ DWR's guidance document was used by the City to determine the required water use parameters which are discussed below.

The City is a member of the Los Angeles Gateway Region Integrated Regional Water Management Joint Powers Authority (Gateway Authority). The Gateway Authority prepared a Regional Water Conservation Alliance Report in June 2011 which included regional baselines and targets. The regional 2015 and 2020 targets calculated by the Gateway Authority were 110.7 gallons per capita day and 105.4 gallons per capita day, respectively. Although the City participated in the Regional Alliance, the City has developed its baselines and targets independently, as described below.

3.2.1 BASELINE DAILY PER CAPITA WATER USE

Baseline Daily Per Capita Water Use is defined as the average water use, expressed in gallons per capita per day (GPCD), for a continuous, multi-year baseline period. There are two different baseline periods for calculating Baseline Daily Per Capita Water Use, as follows (CWC Sections 10608.20 and 10608.22):

³ California Department of Water Resources, Division of Statewide Integrated Water Management, Water Use and Efficiency Branch. *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use*. October 1, 2010.

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- *The first baseline period is a continuous 10 to 15-year period, and is used to calculate Baseline Daily Per Capita Water Use per CWC Section 10608.20. The first baseline period is determined as follows:*
 - *If recycled water makes up less than 10 percent of 2008 retail water delivery, use a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.*
 - *If recycled water makes up 10 percent or more of 2008 retail water delivery, use a continuous 10 to 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.*

The City's recycled water use is less than 10 percent of its FY 2007-08 retail water delivery as shown in Table 3-3. (Note: The City's water use data are reported on a fiscal year basis. Therefore, fiscal year 2007-08 data is used instead of calendar year 2008, as stated in the CWC.) Consequently, the first baseline period for the City consists of a continuous 10-year period, FY 1999-00 to FY 2008-09, between the 15-year range allotted (FY 1995-96 and FY 2009-10) (see Table 3-3).

Table 3-3 Base Period Ranges
(DWR Guidebook Table 13)

Table 13			
Base period ranges			
Base	Parameter	Value	Units
10- to 15-year base period	2008 total water deliveries	18,402	<i>acre-feet</i>
	2008 total volume of delivered recycled water	742	<i>acre-feet</i>
	2008 recycled water as a percent of total deliveries	4%	percent
	Number of years in base period ¹	10	years
	Year beginning base period range	1999-00	
	Year ending base period range ²	2008-09	
5-year base period	Number of years in base period	5	years
	Year beginning base period range	2003-04	
	Year ending base period range ³	2007-08	

Units are in acre-feet per year.

¹ *If the 2008 recycled water percent is less than 10 percent, then the first base period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first base period is a continuous 10- to 15-year period.*

² *The ending year must be between December 31, 2004 and December 31, 2010.*

³ *The ending year must be between December 31, 2007 and December 31, 2010.*

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- *The second baseline period is a continuous 5-year period, and is used to determine whether the 2020 per capita water use target meets the legislation's minimum water use reduction per CWC Section 10608.22. The continuous 5-year period shall end no earlier than December 31, 2007, and no later than December 31, 2010.*

Since the City's water use data are reported on a fiscal year basis, the second baseline period consists of a continuous 5-year period, FY 2003-04 to FY 2007-08, between the 7-year range allotted (FY 2003-04 and FY 2009-10).

Unless the urban water retailer's 5-year Baseline Daily Per Capita Water Use, as calculated above per CWC Section 10608.12(b)(3), is 100 GPCD or less, Baseline Daily Per Capita Water Use must be calculated for both baseline periods, See Section 3.2.4.

The calculation of the Baseline Daily Per Capita Water Use entails the following four steps:

- Step 1 Calculate gross water use for each year in the baseline period using Methodology 1 in DWR's guidance document. According to Methodology 1, gross water use is a measure of water supplied to the distribution system over 12 months and adjusted for changes in distribution system storage and deliveries to other water suppliers that pass through the distribution system. Recycled water deliveries are to be excluded from the calculation of gross water use. Water delivered through the distribution system for agricultural use may be deducted from the calculation of gross water use. Under certain conditions, industrial process water use also may be deducted from gross water use.*

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The City's groundwater production and amount of imported water purchased from CBMWD between FY 1995-96 and FY 2009-10 are shown in Table 3-4.

Table 3-4 Historical Potable Water Demands

Fiscal Year	Groundwater Production (Acre-Feet)	Purchased Water (Acre-Feet)	Total Potable Water Demand (Acre-Feet)	Total Potable Water Demand (MGD)
1995-96	16,788	1	16,789	15.0
1996-97	16,914	2	16,916	15.1
1997-98	15,069	20	15,089	13.5
1998-99	16,045	0	16,045	14.3
1999-00	17,340	18	17,358	15.5
2000-01	17,645	1	17,646	15.8
2001-02	17,642	0	17,642	15.7
2002-03	16,976	0	16,976	15.2
2003-04	18,237	0	18,237	16.3
2004-05	16,955	0	16,955	15.1
2005-06	17,434	0	17,434	15.6
2006-07	18,490	0	18,490	16.5
2007-08	17,660	0	17,660	15.8
2008-09	17,221	0	17,221	15.4
2009-10	16,209	0	16,209	14.5

The calculated gross water use, based on recorded groundwater production and purchased water use, excluding recycled water, for each year in the first baseline period (10-year) is shown in Table 3-5.

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Table 3-5 Base Daily Per Capita Water Use – 10 to 15-Year Range
(DWR Guidebook Table 14)

Table 14				
Base daily per capita water use — 10- to 15-year range				
Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1	2000	106,073	15.5	146.1
Year 2	2001	106,511	15.8	147.9
Year 3	2002	106,950	15.7	147.3
Year 4	2003	107,388	15.2	141.1
Year 5	2004	107,827	16.3	151.0
Year 6	2005	108,265	15.1	139.8
Year 7	2006	108,703	15.6	143.2
Year 8	2007	109,142	16.5	151.2
Year 9	2008	109,580	15.8	143.9
Year 10	2009	110,019	15.4	139.7
Year 11				
Year 12				
Year 13				
Year 14				
Year 15				
Base Daily Per Capita Water Use¹				145.1

¹ Add the values in the column and divide by the number of rows.

Step 2 Estimate service area population for each year in the baseline period using Methodology 2 in DWR’s guidance document. To obtain an accurate estimate of GPCD, water suppliers must estimate population of the areas that they actually serve, which may or may not coincide with either their jurisdictional boundaries or with the boundaries of cities. According to Methodology 2, data published by the California Department of Finance (DOF) or the U.S. Census Bureau must serve as the foundational building block for population estimates. In some instances, data published by these two sources may be directly applicable. In other instances, additional refinements may be necessary. For example, to account for distribution areas that do not match city boundaries, customers with private sources of supply, or other unique local circumstances, water suppliers may have to supplement the above sources of data with additional local data sources such as county assessor data, building permits data, and traffic analysis zone data. These refinements are acceptable as long as they are consistently applied

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over time, and as long as they build upon population data sources of the DOF or the U.S Census Bureau.

The City's service area population for each year in the first baseline period (10-year) is based on US Census Bureau data (see Table 3-5).

Step 3 Calculate daily per capita water use for each year in the baseline period. Divide gross water use (determined in Step 1) by service area population (determined in Step 2).

The calculated daily per capita water use for each year in the first baseline period (10-year) is shown in Table 3-5.

Step 4 Calculate Baseline Daily Per Capita Water Use. Calculate average per capita water use by summing the values calculated in Step 3 and dividing by the number of years in the baseline period. The result is Baseline Daily Per Capita Water Use for the selected baseline period.

The average per capita water use calculated for a continuous 10-year baseline period (first baseline period) is shown in Table 3-5.

This average per capita water use, also known as Baseline Daily Per Capita Water Use, for the City was determined to be **145.1 GPCD**, based on the highest value calculated for a continuous 10-year period (first baseline period) between FY 1995-96 and FY 2009-10 (see Table 3-5).

3.2.2 URBAN WATER USE TARGET

Section 10608.20 (b)

An urban retail water supplier shall adopt one of the following methods for determining its urban water use target pursuant to subdivision (a):

(1) Eighty percent of the urban retail water supplier's baseline per capita daily water use.

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- (2) *The per capita daily water use that is estimated using the sum of the following performance standards:*
 - (A) *For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2016 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.*
 - (B) *For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.*
 - (C) *For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.*
- (3) *Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.*
- (4) *A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following:*
 - (A) *Consider climatic differences within the state.*
 - (B) *Consider population density differences within the state.*
 - (C) *Provide flexibility to communities and regions in meeting the targets.*
 - (D) *Consider different levels of per capita water use according to plant water needs in different regions.*
 - (E) *Consider different levels of commercial, industrial, and institutional water use in different regions of the state.*
 - (F) *Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.*

The Urban Water Use Target is determined using one of the following methods:

Method 1: Eighty percent of the urban retail water supplier's Baseline Daily Per Capita Water Use.

Using this method, the Urban Water Use Target for the City was calculated as 116.1 GPCD, based on the City's Baseline Daily Per Capita Water Use of 145.1 GPCD.

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Method 2: Estimate using the sum of the specified three performance standards.

Although this method was reviewed, this method was not considered due to insufficient data.

Method 3: Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's 20x2020 Water Conservation Plan.⁴

Based on the 20x2020 Water Conservation Plan, the City's service area lies in DWR Hydrologic Region 4 (South Coast), with an established Baseline Daily Per Capita Water Use of 180 GPCD and a Target Per Capita Daily Water Use of 149 GPCD. Using this method, the Urban Water Use Target for the City was calculated as 142 GPCD.

Method 4: Water Savings.

Although this method was reviewed, this method was not considered due to insufficient data.

The City's Urban Water Use Target was determined to be 142 GPCD for 2020, based on Method 3 above (note: this value is required to meet the legislation's minimum water use reduction requirement discussed in Section 3.2.4 below).

3.2.3 COMPLIANCE DAILY PER CAPITA WATER USE

Compliance Daily Per Capita Water Use is defined as the Gross Water Use in GPCD during the final year of the reporting period. The Compliance Daily Per Capita

⁴ California Department of Water Resources, State Water Resources Control Board, California Bay-Delta Authority, California Energy Commission, California Department of Public Health, California Public Utilities Commission, and California Air Resources Board. *20x2020 Water Conservation Plan*. February 2010.

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Water Use will be reported in the City's 2015 Plan (interim compliance) and 2020 Plan (final compliance).

3.2.4 MINIMUM WATER USE REDUCTION REQUIREMENT

Section 10608.22

Notwithstanding the method adopted by an urban retail water supplier pursuant to Section 10608.20, an urban retail water supplier's per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph (3) of subdivision (b) of Section 10608.12. This section does not apply to an urban retail water supplier with a base daily per capita water use at or below 100 gallons per capita per day.

The following calculation was made because the 5-year Baseline Daily Per Capita Water Use per CWC Section 10608.12(b)(3) is greater than 100 GPCD. The calculation is used to determine whether the water supplier's 2015 and 2020 per capita water use targets meet the legislation's minimum water use reduction requirement per CWC Section 10608.22. The calculation entails three steps:

Step 1: Calculate Baseline Daily Per Capita Water Use using a continuous 5-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

This value was calculated as 145.8 GPCD (see Table 3-6).

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Table 3-6 Base Daily Per Capita Water Use – 5-Year Range
(DWR Guidebook Table 15)

Table 15				
Base daily per capita water use — 5-year range				
Base period year		Distribution System Population	Daily system gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Calendar Year			
Year 1	2004	107,827	16.3	151.0
Year 2	2005	108,265	15.1	139.8
Year 3	2006	108,703	15.6	143.2
Year 4	2007	109,142	16.5	151.2
Year 5	2008	109,580	15.8	143.9
Base Daily Per Capita Water Use¹				145.8

¹ Add the values in the column and divid by the number of rows.

Step 2: Multiply the result from Step 1 by 0.95. The 2020 per capita water use target cannot exceed this value (unless the water supplier’s five-year Baseline Per Capita Water Use is 100 GPCD or less). If the 2020 target is greater than this value, reduce the target to this value.

This value was calculated as 138.5 GPCD. The City’s 2020 Urban Water Use Target using Method 3 in Section 3.2.2 was determined to be 142 GPCD, which is higher than the value calculated in this step. Therefore, the City’s 2020 Urban Water Use Target was reduced to 138.5 GPCD.

Step 3: Set the 2015 target to the mid-point between the 10 or 15-year Baseline Daily Per Capita Water Use (Section 3.2.1) and the 2020 target determined in Step 2 above.

The City’s 2015 Interim Urban Water Use Target is therefore set at 141.8 GPCD.

Therefore, in order to meet the legislation’s minimum water use reduction requirement per CWC Section 10608.22, the City’s 2020 Urban Water Use Target was reduced to **138.5 GPCD** and the 2015 Interim Urban Water Use Target was set at **141.8 GPCD**.

3.2.5 PROJECTED WATER DEMANDS

Undeveloped residentially zoned land in the City of Downey is almost non-existent. In an effort to help meet SCAG Residential Housing Needs Assessment recommendations for Downey, the City's housing element and zoning ordinances were recently updated to allow for Second Unit Development of single family residential parcels greater than 7,500 square feet in size. Such developments would require installation of separate service lines and meters for each unit resulting in a modest increase in the number of single family residential accounts over the next 20 years as identified in Tables 3-8 through 3-9. Modest increases in commercial accounts are also anticipated as a result of the City's redevelopment of the Downtown and Tierra Luna project areas. Little to no increases in industrial and institutional accounts are anticipated over the next 20 years and potable water usage for landscape irrigation at parks and in street medians is likely to decrease somewhat as the City's recycled water system is expanded.

The City's projected water demands (see Table 3-7) were calculated based on the urban per capita water use target developed per SBX7-7 (see Section 3.2 above) and population projections (see Section 2.3.1, Table 2-6). Using this methodology results in conservatively high projected water demands as the City anticipates reducing its water use beyond its urban water use targets. The projected water use and the number of service connections by customer type estimated to FY 2029-30 are shown in Tables 3-8 through 3-10.

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Table 3-7 Projected Water Demands

Fiscal Year	Projected Population ^[1]	Urban Water Use Target (GPCD) ^[2]	Projected Water Demand (AF) ^{[3] [4]}
2014-15	113,606	141.8	18,048
2019-20	116,872	138.5	18,135
2024-25	118,960	138.5	18,459
2029-30	121,084	138.5	18,789

Notes:

[1] Projected service area population, See Section 2.3.1, Table 2-6

[2] See Section 3.2 for urban water use target; GPCD = gallons per capita per day

[3] Projected water demands based on total groundwater produced and purchased water

[4] (Projected population) x (Urban Water Use Target)

Table 3-8 Water Deliveries – Projected, 2015
(DWR Guidebook Table 5)

Table 5 Water deliveries — projected, 2015					
Water use sectors	2015				Total Volume
	Metered		Not metered		
	# of accounts	Volume	# of accounts	Volume	
Single family	18,688	9,188			9,188
Multi-family	1,945	3,514			3,514
Commercial	1,287	1,969			1,969
Industrial	39	964			964
Institutional/governmental	241	611			611
Landscape	116	253			253
Agriculture					0
Fire hydrant/service/construction	322	28			28
Operation and maintenance			0	30	30
Total	22,638	16,527	0	30	16,557

Units are in acre-feet per year.

Table 3-9 Water Deliveries – Projected, 2020
(DWR Guidebook Table 6)

Table 6 Water deliveries — projected, 2020					
Water use sectors	2020				Total Volume
	Metered		Not metered		
	# of accounts	Volume	# of accounts	Volume	
Single family	18,713	9,208			9,208
Multi-family	1,950	3,521			3,521
Commercial	1,322	1,972			1,972
Industrial	39	964			964
Institutional/governmental	241	611			611
Landscape	121	253			253
Agriculture					0
Fire hydrant/service/construction	342	28			28
Operation and maintenance			0	30	30
Total	22,728	16,557	0	30	16,587

Units are in acre-feet per year.

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Table 3-10 Water Deliveries – Projected, 2025 and 2030
(DWR Guidebook Table 7)

Table 7						
Water deliveries — projected 2025, 2030, and 2035						
Water use sectors	2025		2030		2035 - optional	
	metered		metered		metered	
	# of accounts	Volume	# of accounts	Volume	# of accounts	Volume
Single family	18,738	9,359	18,763	9,540	--	--
Multi-family	1,955	3,579	1,960	3,648	--	--
Commercial	1,357	2,005	1,392	2,044	--	--
Industrial	39	964	39	964	--	--
Institutional/governmental	241	611	241	611	--	--
Landscape	126	257	131	262	--	--
Agriculture					--	--
Fire hydrant/service/construction	362	28	382	29	--	--
Total (Metered)	22,818	16,803	22,908	17,098	0	0
Operation and maintenance (Not metered)	0	31	0	31		

Units are in acre-feet per year.

The City does not have a practice of selling water to other agencies. However, the City can provide water for emergency purposes through four of its five emergency interconnections with adjacent water agencies (see Section 2.1.2.4, Table 2-3) if necessary. As these interconnections are maintained for emergency purposes only and are rarely if ever used, the City’s projected water sales to other agencies are considered to be zero as provided in Table 3-11.

Table 3-11 Sales to Other Water Agencies

(DWR Guidebook Table 9)

Table 9							
Sales to other water agencies							
Water distributed	2005	2010	2015	2020	2025	2030	2035 - opt
Bellflower-Somerset Mutual Water Co. (emergency use)	0	0	0	0	0	0	--
City of Santa Fe Springs (emergency use)	0	0	0	0	0	0	--
City of South Gate (emergency use)	0	0	0	0	0	0	--
Golden State Water Co. (emergency use)	0	0	0	0	0	0	--
Bellflower Municipal Water System (emergency use)	0	0	0	0	0	0	--
Total	0						

Units are in acre-feet per year.

The City’s past, current, and projected recycled water use and unaccounted for system losses are shown in Table 3-12.

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Table 3-12 Additional Water Uses and Losses
(DWR Guidebook Table 10)

Table 10 Additional water uses and losses							
Water use ¹	2005	2010	2015	2020	2025	2030	2035 -opt
Saline barriers	0	0	0	0	0	0	--
Groundwater recharge	0	0	0	0	0	0	--
Conjunctive use	0	0	0	0	0	0	--
Raw water	0	0	0	0	0	0	--
Recycled water	617	742	787	841	905	927	--
System losses	261	790	704	707	720	733	--
Other (define)	0	0	0	0	0	0	--
Total	878	1,532	1,491	1,548	1,625	1,660	

Units are in acre-feet per year.
¹ Any water accounted for in Tables 3 through 7 are not included in this table.

13. The City's past, current, and projected total water use is summarized in Table 3-

Table 3-13 Total Water Use
(DWR Guidebook Table 11)

Table 11 Total water use							
Water Use	2005	2010	2015	2020	2025	2030	2035 - opt
Total water deliveries (from Tables 3 to 7)	16,694	15,419	16,557	16,587	16,834	17,129	--
Sales to other water agencies (from Table 9)	0	0	0	0	0	0	--
Additional water uses and losses (from Table 10)	878	1,532	1,491	1,548	1,625	1,660	--
Total	17,572	16,951	18,048	18,135	18,459	18,789	0

Units are in acre-feet per year.

3.2.6 PROJECTED WATER DEMAND FOR LOWER INCOME HOUSEHOLDS

Section 10631.1(a)

The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

Based on information from the City's 2008 Housing Element and the US Census, City staff has indicated that approximately 37 percent of the City's total current (as of 2010) occupied households are classified as lower income households. Based on a 37 percent use factor of total residential water demands, the projected water demand for

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lower income households is about 4,880 acre-feet per year by FY 2029-30, as shown in Table 3-14.

Table 3-14 Low-Income Projected Water Demands
(DWR Guidebook Table 8)

Table 8 Low-income projected water demands					
Low Income Water Demands ¹	2015	2020	2025	2030	2035 - opt
Single-family residential	3,400	3,407	3,463	3,530	
Multi-family residential	1,300	1,303	1,324	1,350	
Total	4,700	4,710	4,787	4,880	

Units are in acre-feet per year.
¹ Provide demands either as directly estimated values or as a percent of demand.

3.2.7 PROGRESS REPORT

10608.40.

Urban water retail suppliers shall report to the department on their progress in meeting their urban water use targets as part of their urban water management plans submitted pursuant to Section 10631. The data shall be reported using a standardized form developed pursuant to Section 10608.52.

The City will report to DWR in future Plans on its progress in meeting its urban water use targets, using a standardized form to be developed by DWR, when the form becomes available.

3.3 WHOLESALE WATER DEMAND PROJECTIONS

Section 10631(k)

Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).

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The City does not rely upon a wholesale agency for its water supply. However, it does maintain three imported water connections with CBMWD (see Table 2-2) for emergency purposes. Therefore, the City does not project using any imported water from CBMWD, as provided in Table 3-15, unless an emergency arises which requires its use. The City notified CBMWD of the development of its 2010 Plan and made a copy of the draft Plan available to CBMWD. CBMWD in turn provided the City with a copy of their 2010 Plan, which is incorporated by reference in the City’s Plan.

Table 3-15 Retail Agency Demand Projections Provided to Wholesale Suppliers
(DWR Guidebook Table 12)

Table 12 Retail agency demand projections provided to wholesale suppliers							
Wholesaler	Contracted Volume	2010	2015	2020	2025	2030	2035 -opt
Central Basin Municipal Water District (emergency use)	0	0	0	0	0	0	--

3.4 WATER USE REDUCTION PLAN

10608.36.

Urban wholesale water suppliers shall include in the urban water management plans required pursuant to Part 2.6 (commencing with Section 10610) an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part.

The City is not an urban wholesale water supplier. Therefore, the requirement for an urban wholesale water supplier to provide an assessment of its present and proposed future measures, programs, and policies to help achieve the water use reductions required is not applicable to the City.

SECTION 4 SYSTEM SUPPLIES

4.1 WATER SOURCES

Section 10631

A plan shall be adopted in accordance with this chapter and shall do the following:

- b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).*

The City's water supply sources include groundwater pumped from the Central Basin, supplemental imported water that can be purchased from CBMWD for emergencies in the event that system demand exceeds the production capacity of the City's groundwater wells, and recycled water from CBMWD. The City's current and projected water supplies are shown in Table 4-1. As provided in Table 4-1, the City meets 100 percent of its potable water demands with groundwater pumped from the Central Basin.

Table 4-1 Water Supplies – Current and Projected
(DWR Guidebook Table 16)

Table 16 Water supplies — current and projected							
Water Supply Sources		2010	2015	2020	2025	2030	2035 - opt
Water purchased from ¹ :	Wholesaler supplied volume (yes/no)						
Central Basin Municipal Water District	no	0	0	0	0	0	--
(Not applicable)							--
(Not applicable)							--
Supplier-produced groundwater ²		16,209	17,261	17,294	17,554	17,862	--
Supplier-produced surface water		0	0	0	0	0	--
Transfers in		0	0	0	0	0	--
Exchanges In		0	0	0	0	0	--
Recycled Water		742	787	841	905	927	--
Desalinated Water		0	0	0	0	0	--
Other		--	--	--	--	--	--
Other		--	--	--	--	--	--
Total		16,951	18,048	18,135	18,459	18,789	

Units are in acre-feet per year.

¹ *Volumes shown here should be what was purchased in 2010 and what is anticipated to be purchased in the future. If these numbers differ from what is contracted, show the contracted quantities in Table 17.*

² *Volumes shown here should be consistent with Tables 17 and 18.*

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Groundwater

In the Central Basin Judgment of 1965 (Judgment), the Superior Court fixed allowable withdrawals from the Central Basin at a level which was greater than the amount of water returned to the basin through natural replenishment. With a total allowed pumping limit of 217,000 AFY, approximately 80,000 AFY must be artificially replenished in order to maintain a safe yield of 137,000 AFY in the basin. The adjudication allocated the portion of the 217,000 AFY each pumper could extract on an annual basis.

The limit to the amount of groundwater that each pumper is allowed to extract from the basin on an annual basis is referred to as the "Allowed Pumping Allocation" (APA), which corresponds to 80 percent of the party's total water rights. The Judgment contains provisions for exceedence of the APA in the event of an emergency. It also allows for a carryover of any unused allowed pumping allocation, not to exceed 20 percent of the purveyor's APA. A purveyor may also extract an additional 10 percent of its APA, with the understanding that this additional amount will be deducted from its APA for the upcoming year.

The California DWR, Southern Division was appointed Watermaster of the Central Basin. As such, DWR has the responsibility for ensuring that parties adhere to the terms and conditions stipulated by the Judgment as expressed above.

In addition to DWR's role as Watermaster, the Water Replenishment District of Southern California (WRD) and Los Angeles County Department of Public Works (LACDPW) have some responsibilities for groundwater management in the Central Basin. WRD is responsible for purchasing groundwater replenishment water and may address water quality issues in the Central Basin. In order to fund the expense of purchasing imported and recycled water and associated administrative costs, WRD

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charges a replenishment assessment on each acre-foot of water extracted from the basin. Groundwater replenishment operations are provided by LACDPW and replenishment water is paid for through revenues raised by WRD.

The City was one of the original parties to the Judgment and has acquired additional water rights since that time resulting in a current (FY 2009-10) APA of 16,554 AFY. The City has 20 active wells which it uses to pump groundwater from the Central Basin. These wells are located throughout the City and have a combined production capacity of approximately 53,211 AFY (based on continuous operations).

Treated Imported Surface Water

As discussed in Section 2.1.2.3, the City maintains three connections with CBMWD, designated CENB-18, CENB-20, and CENB-21. Due to the high cost associated with treated imported water, these connections are only utilized for emergencies in the event that system demand exceeds the production capacity of the City’s groundwater wells. It is important to note that the combined capacity of these three purchased water connections with CBMWD is 39,815 AFY, which is more than enough to meet the City’s annual water demands. However, since these connections are maintained for emergencies only, the City does not intend to utilize this water source unless absolutely necessary as summarized in Table 4-2 below.

Table 4-2 Wholesale Supplies – Existing and Planned Sources of Water
(DWR Guidebook Table 17)

Table 17 Wholesale supplies — existing and planned sources of water						
Wholesale sources ^{1,2}	Contracted Volume ³	2015	2020	2025	2030	2035 - opt
Central Basin Municipal Water District	0	0	0	0	0	--
(Not applicable)						
(Not applicable)						

Units are in acre-feet per year.

¹ Water volumes presented here should be accounted for in Table 16.

² If the water supplier is a wholesaler, indicate all customers (excluding individual retail customers) to which water is sold. If the water supplier is a retailer, indicate each wholesale supplier, if more than one.

³ Indicate the full amount of water

Recycled Water

The City receives its recycled water from CBMWD as part of the Central Basin Recycled Water Project. CBMWD purchases and resells tertiary-treated recycled water produced at CSDLAC's Los Coyotes and San Jose Creek Water Reclamation Plants. Once purchased from CBMWD, recycled water is re-sold by the City of Downey to its customers at a discount of 15 percent off of the current rate for potable water. Since FY 1992-93, the City has purchased an average of 608 AFY of recycled water from CBMWD. Since FY 2000-01, the average amount of recycled water used by the City is 703 AFY, which reflects the general increase in recycled water use in the City over the past several years. Recycled water within the City's service area is currently being used in several parks and golf course ponds and for irrigation of greenbelt areas, landscape medians, golf courses, plant nurseries, and schools. Use of recycled water allows the City to reduce the amount of groundwater production required from the Central Basin and to maintain imported water as an emergency supply.

Additional discussion of recycled water use within the City's service area is provided in Section 4.5.

Total Water Supplies

The City's current and projected water supplies from groundwater, imported surface water, and recycled water are shown in Table 4-1. Tables 5-15 and 5-16 provide the City's projected water supplies during future single and multiple dry year conditions (See Section 5.4.5).

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4.2 GROUNDWATER

Section 10631(b)

If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:

As indicated in Section 2.1.2.1, the City currently has 20 active wells located in the Central Basin. These 20 wells have a combined production capacity of approximately 53,211 AFY (based on continuous operations) and serve as the City's principle source of potable water.

4.2.1 GROUNDWATER MANAGEMENT

Section 10631(b)

If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:

- 1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.*

4.2.1.1 CENTRAL BASIN GROUNDWATER MANAGEMENT

CENTRAL BASIN GROUNDWATER MANAGEMENT PLAN

Total groundwater production in the Central Basin is restricted to adjudicated rights fixed by the Central Basin Judgment and subsequent amendments, and managed by DWR, the court-appointed Watermaster. The City was a party to the Central Basin Judgment⁵ and is therefore held to the groundwater production requirements provided within. The following section provides a historical overview of groundwater in the Central Basin based on the Central Basin Watermaster Annual Report.

⁵ Central and West Basin Water Replenishment District, etc. vs. Charles E. Adams etc., Los Angeles County Case No. 786,656, Judgment entered in 1965.

CENTRAL BASIN JUDGMENT

Dramatic increases in groundwater extractions over a long period of time resulted in an overdraft of the Central Basin, creating critical water supply shortages in the late 1940's. Because the groundwater basin is not geologically protected from the sea at its edges, over-pumping also resulted in extensive seawater intrusion into the basin, contaminating wells and reducing the quantity of potable water available to surrounding jurisdictions.

In 1952, the CBMWD was formed and became a member agency of MWD. By doing so, CBMWD was now able to purchase supplemental imported water from MWD and wholesale it to local water retailers. Upon establishing a reliable source of supplemental water, water associations focused on reducing the amount of groundwater pumped by formal adjudication of the rights in the Basin.

On January 2, 1962, the Central and West Basin Water Replenishment District (now WRD), which was formed to replenish the Central Basin, filed Case No. 786,656 in the Superior Court, County of Los Angeles, naming more than 700 parties as defendants. It sought to adjudicate groundwater rights in order to regulate pumping from the Central Basin. By September 1962, a proposed interim agreement was drafted by the Central Basin Water Association and approved by a sufficient number of water producers (producers owning over 75 percent of the Assumed Relative Rights within the Central Basin) to guarantee control over groundwater pumping in the Central Basin. On September 28, 1962, the Court signed the "Order Pursuant to Stipulation and Interim Agreement and Petition for Order" and appointed DWR as Watermaster.

Following the interim agreement, a stipulated judgment was drafted. Approval was received by public water utility companies and other producers representing well over 200,000 acre-feet, or 75 percent, of the total rights within the Central Basin. This was a prerequisite to filing the stipulated judgment with the Court. On May 17, 1965,

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the case went to trial before Judge Edmund M. Moor. Following testimony on engineering, geology, hydrology, and safe yield of the Central Basin and arguments on water right entitlement, the case was continued to August 25, 1965. Shortly thereafter, Judge Moor appointed DWR as Watermaster. The final Judgment was signed on October 11, 1965 and became affective on October 1, 1966.⁵ A copy of the Central Basin Judgment is provided in Appendix F.

The Judgment was amended on March 21, 1980, to provide for a transition in the administrative year from a water year (October 1 to September 30) to a fiscal year (July 1 to June 30) basis. Under the Judgment, this transition resulted in a “short” administrative year of nine months (October 1, 1980 to June 30, 1981) in order to transition into a fiscal year basis beginning July 1, 1981.

The Judgment was again amended on July 9, 1985, modifying the annual budget (\$20 minimum assessment) and exchange pool provisions. The amended Judgment of May 6, 1991 modified the carryover and overproduction provisions (from 10 percent of APA or 10 acre-feet, to 20 percent of APA or 20 acre-feet, whichever is greater), defined drought carryover, and provided for exemptions for those parties extracting contaminated groundwater.

Under the Judgment, water rights are fixed and do not vary from year to year. Water producers can carry over any unused APA, but cannot carry over more than 20 percent or 20 acre-feet, whichever is greater, of their APA for use in the following year. A water producer may also extract an additional 10 percent of its APA, with the understanding that this additional amount will be deducted from its APA for the upcoming year.

4.2.2 DESCRIPTION OF GROUNDWATER BASIN

Section 10631(b)(2)

A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated

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the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

DESCRIPTION OF THE CENTRAL GROUNDWATER BASIN

The Central Basin is located in Los Angeles County approximately 20 miles southeasterly of downtown Los Angeles. To the north, the Central Basin is partially bounded by the Hollywood Basin, the boundary of which runs through the City of Los Angeles. The remainder of the northern boundary of the Central Basin extends along the Merced Hills, across the Whittier Narrows, and then along Puente Hills. The northern boundary terminates at the Orange County line, which also forms the eastern boundary of the Central Basin. This boundary is a political and not geologic one, as the aquifers in this area reach into the East Coastal Plane area of Orange County. The south-southwest boundary of the Central Basin is known as the Newport-Inglewood Uplift (NIU), separating Central and West Basins from Long Beach up to the Baldwin Hills just north of the City of Inglewood. DWR Bulletin 118 does not identify the Central Basin as currently being in overdraft.

GEOLOGY

The Central Basin is one of two groundwater basins in the Coastal Plain of Los Angeles County. It is comprised of Quaternary-age sediments (less than 1.8 million years old) of gravel, sand, silt, and clay that were deposited from the erosion of nearby hills and mountains, and from historical beaches and shallow ocean floors that covered the area in the past. Underlying these Quaternary sediments are basement rocks such as the Pliocene Pico Formation that generally do not provide sufficient quantities of groundwater for pumping. Separating the Central Basin from the West Coast Basin is

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the NIU, a series of discontinuous faults and folds that form a prominent line of northwest trending hills including the Baldwin Hills, Dominguez Hills, and Signal Hill.

Central Basin covers approximately 270 square miles and is bounded on the north by the Hollywood Basin and the Elysian, Repetto, Merced, and Puente Hills, to the east by the Los Angeles County/Orange County line, and to the south and west by the NIU. The Central Basin is commonly divided into four sections; the Los Angeles Forebay, the Montebello Forebay, the Whittier Area, and the Central Basin Pressure Area.

The two forebays represent areas of unconfined aquifers that allow percolation of surface water down into the deeper aquifers to replenish the basins. The Whittier Area and Central Basin Pressure Area are confined aquifer systems that receive relatively minimal recharge from surface water. They are replenished primarily from the up-gradient forebay areas.

HYDROGEOLOGY

The main surface and subsurface flow into the Basin is through the Los Angeles and Whittier Narrows from the groundwater basins in the interior valleys. The water originates as rainfall in the San Gabriel Mountains, the runoff from which is conveyed to the Los Angeles River, the Rio Hondo, and the San Gabriel River. The Los Angeles River enters Central Basin through the Los Angeles Narrows, crosses the Los Angeles Forebay Area, and proceeds south across the Central Basin, exiting the Central Basin through the Dominguez Gap in the West Basin. The Rio Hondo, enters the Central Basin at the Whittier Narrows parallel to the San Gabriel River, proceeds southwesterly across the Montebello Forebay Area and joins the Los Angeles River midway across the Basin. The San Gabriel River also enters the Central Basin through the Whittier Narrows, crosses the Montebello Forebay, and runs south to the Pacific Ocean near Long Beach at the Orange County line.

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As the Rio Hondo and San Gabriel Rivers flow through the Upper San Gabriel Valley toward the Whittier Narrows, much of their flow percolates into the Main San Gabriel Basin (Main Basin). This water crosses the Whittier Narrows and enters the Central Basin as subsurface flow into the aquifers of the Central Basin. At the same time, the surface flows of the Rio Hondo and the San Gabriel River percolate downward into the aquifers of the Central Basin in the Montebello Forebay. In the Montebello Forebay, the underground aquifers merge and are unconfined, and thus are capable of receiving large quantities of water from percolation through the sand and gravel surface of the forebay area.

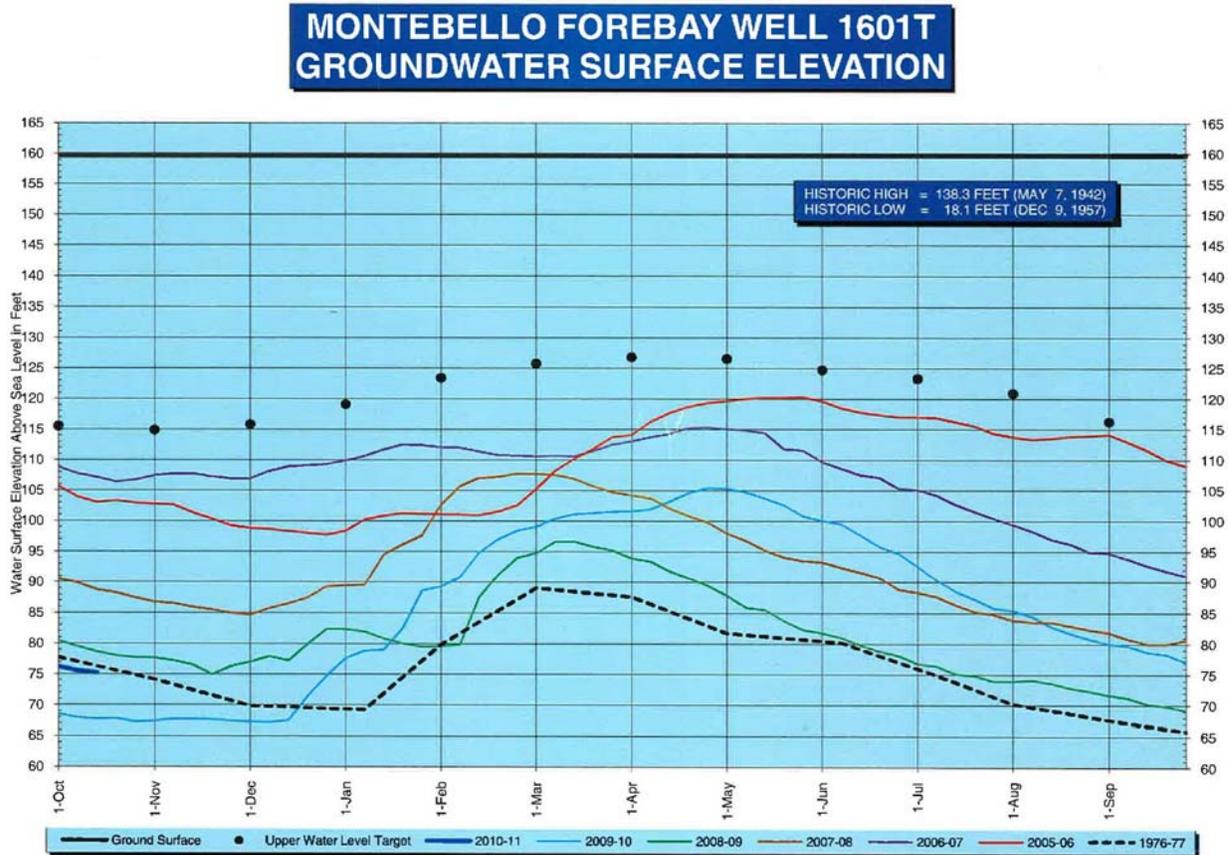
The Los Angeles Forebay area is also favorably situated for percolation from the flows of the Los Angeles River, but the Los Angeles Forebay has been largely eliminated as a source of water replenishment to the Central Basin, due to lining of the Los Angeles River channel and the paving over of the forebay area. In the Montebello Forebay area, by contrast, flood flows have been largely controlled through the construction of the Whittier Narrows Dam, and the river channels have not been lined in the area, so percolation still occurs.

Groundwater in the Central Basin provides a substantial portion of the water supply needed by residents and industries in the overlying area. Groundwater exists and flows via the pore spaces of the sediments in the basin. The major aquifers identified in Central Basin include the following, from shallowest to deepest: a) the Gaspar and semi-perched aquifers of the Holocene Alluvium Formation; b) the Exposition, Artesia, Gage, and Gardena aquifers of the Upper Pleistocene Lakewood Formation; c) the Hollydale, Jefferson, Lynwood, and Silverado aquifers of the Lower Pleistocene Upper San Pedro Formation; and d) the Sunnyside Aquifer of the Lower Pleistocene Lower San Pedro Formation. Water levels have exhibited a general recovery since the mid-1970s, as shown in Figure 4-1. Aquifer depths can reach more

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than 2,000 feet in the Central Basin although production wells generally do not need to be drilled this deep to tap sufficient water.

Figure 4-1 Central Basin Groundwater Levels



4.2.3 LOCATION, AMOUNT, AND SUFFICIENCY OF GROUNDWATER PUMPED FOR THE PAST FIVE YEARS

Section 10631(b)(3)

A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

The City produces groundwater from the Central Basin via its 20 active wells as discussed in Section 4.1. The City has an active water well capacity of 53,211 AFY,

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which far exceeds its average annual water requirements, but is limited by its current (FY 2009-10) APA of 16,554 AFY and stipulations provided in the Central Basin Judgment. The City’s annual water demands regularly exceed its APA. However, the Central Basin Judgment allows for a carryover of any unused allowed pumping allocation, not to exceed 20% of the purveyor’s APA. The City typically leases water from other Central Basin purveyors on an annual basis in order to maintain carryover for flexibility in case of drought or other emergency and to ensure the difference between water demand and APA is met. From FY 2000-01 to FY 2009-10, the City has maintained an average carryover of approximately 2,900 AFY and has leased an average of approximately 1,002 AFY. The City’s groundwater production in the Central Basin over the past 15 years is provided in Section 3.2.1, Table 3-4. Over the past 5-years (FY 2005-06 to FY 2009-10) the City has produced an average of 17,403 AFY of groundwater from the Central Basin. Groundwater production in each of the last 5-years is provided in Table 4-3 below.

Table 4-3 Groundwater – Volume Pumped
(DWR Guidebook Table 18)

Table 18 Groundwater — volume pumped						
Basin name(s)	Metered or Unmetered ¹	2006	2007	2008	2009	2010
Central Basin	Metered	17,434	18,490	17,660	17,221	16,209
Total groundwater pumped		17,434	18,490	17,660	17,221	16,209
Groundwater as a percent of total water supply		96.6%	95.7%	96.0%	95.8%	95.6%

Units are in acre-feet per year.
¹ Indicate whether volume is based on volumetric meter data or another method

LACDPW owns, operates and maintains the spreading grounds that are utilized to recharge the Central Basin. The recharge occurs in the spreading grounds adjacent to the Rio Hondo and the San Gabriel River, within the unlined portion of the San Gabriel River, and behind the Whittier Narrows Dam in the Whittier Narrows Reservoir. Sources of spreading water include imported untreated MWD water, recycled water, and local runoff. Approximately 122,000 acre-feet of water was recharged into the Central Basin during FY 2009-10.

The successful management of Central Basin groundwater supplies by DWR via the Central Basin Judgment, combined with the recharge/replenishment program in the spreading grounds and the guaranteed minimum inflow from the Main Basin (see Sections 4.2.2 and 4.2.3), have resulted in the recovery of water levels in wells throughout the Central Basin over the past several decades. As shown on Figure 4-1, water levels have remained steady since the mid-1970s despite several drought periods. Therefore, based on the historical and on-going management practices, the City will be able to rely on the Central Basin for adequate groundwater supplies over the next 20 years under single year and multiple dry year scenarios.

4.2.4 LOCATION AND AMOUNT OF GROUNDWATER PROJECTED TO BE PUMPED

Section 10631(b)(4)

A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

The City of Downey overlies the Central Basin. Groundwater from this basin, pumped from 20 active wells located within the City's boundaries, constitutes the City's principal source of potable water. As previously expressed, successful management of Central Basin groundwater supplies by DWR via the Central Basin Judgment, combined with the recharge/replenishment program and the guaranteed minimum inflow from the Main Basin (see Sections 4.2.2 and 4.2.3), have resulted in the stabilization and reliability of water levels in wells throughout the Central Basin. A summary of the City's current and projected groundwater production from the Central Basin is provided in Table 4-4.

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Table 4-4 Groundwater – Volume Projected to be Pumped
(DWR Guidebook Table 19)

Table 19 Groundwater — volume projected to be pumped					
Basin name(s)	2015	2020	2025	2030	2035-opt
Central Basin	17,261	17,329	17,590	17,899	--
Total groundwater pumped	17,261	17,329	17,590	17,899	--
Percent of total water supply	95.6%	95.4%	95.1%	95.1%	--

*Units are in acre-feet per year.
Include future planned expansion*

4.3 TRANSFER OPPORTUNITIES

Section 10631(d)

Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

The City's water transfer opportunities are described below and are summarized in Table 4-5.

Table 4-5 Transfer and Exchange Opportunities
(DWR Guidebook Table 20)

Table 20 Transfer and exchange opportunities			
Transfer agency	Transfer or exchange	Short term or long term	Proposed Volume
Bellflower-Somerset Mutual Water Co.	Transfer	Short Term	0
City of Santa Fe Springs	Transfer	Short Term	0
City of South Gate	Transfer	Short Term	0
Central Basin Producers	Transfer	Long Term	1,002
County Sanitation Districts of Los Angeles County	Transfer	Long Term	7,281
Total			8,283

Units are in acre-feet per year.

4.3.1 SHORT-TERM

As discussed in Section 2.1.2.4, the City maintains emergency interconnections with adjacent water agencies. Two of the interconnections (City of Santa Fe Springs and City of South Gate) are equipped with two-way valves, which have the ability of providing water both to and from the City. An additional interconnection (Bellflower-Somerset Mutual Water Company) has the ability of providing water to the City. The total capacity available to the City from these three interconnections in the event of an emergency is 8,000 gpm.

4.3.2 LONG-TERM

As discussed in Section 4.2.3, the City typically leases water from other Central Basin purveyors on an annual basis in order to maintain carryover for flexibility in the case of drought or other emergency and to ensure the difference between water demand and APA is met. Leasing is the City's most common form of transfer and has averaged approximately 1,002 AFY from FY 2000-01 to FY 2009-10. In addition to annual leases, the City pursues purchases of additional water rights as they become available.

The City continues to look for opportunities to supplement its current groundwater Allowed Pumping Allocation, through storage of groundwater within the Central Basin. Potential opportunities include:

- Purchase of surplus, untreated imported water from CBMWD during years when there is excess available water. This is projected to occur three years out of every ten years.
- Purchase Kern County Water Bank water, and other available water from sources outside of the area, and utilize MWD facilities to wheel the untreated waters to the spreading grounds.

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- Purchase excess water for spreading purposes from adjacent groundwater basin producers as it becomes available.
- Enter into a contract with LACDPW to spread imported water as it becomes available

The City is considering a 6.5 million gallon per day (MGD) (5 MGD effluent product water) Downey Regional Water Reclamation and Groundwater Augmentation Project (DRWRGAP) consisting of an advanced recycled water treatment facility in which the City would purchase tertiary treated recycled water from CSDLAC, treat it through a new, City-owned advanced treatment facility, and inject into the Central Basin to increase its supply. For this type of storage project, the City would have to initiate an agreement with CSDLAC and the City of Cerritos. The City would pay CSDLAC for tertiary treated recycled water and pay the City of Cerritos to pump the water to the City's boundary. The City would then further treat the recycled water with advanced technologies and inject or recharge it into the Central Basin via aquifer storage and recovery (ASR) wells. The City would have to enter into an agreement with LACDPW if it decided it wanted to incorporate this recharge into one of LACDPW's existing recharge facilities.

CBMWD also describes transfer opportunities within its 2010 Plan, which is incorporated by reference.

4.4 DESALINATED WATER OPPORTUNITIES

Section 10631(i)

Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

The average total dissolved solids (TDS) concentrations for Central Basin groundwater are less than the recommended secondary Maximum Contaminant Level (MCL) of 500 milligrams per liter for TDS, based on the most recent available data published by DWR for the period 2001-02 through 2005-06 in its annual Central Basin

Watermaster reports (data not available in the annual reports from 2006-07 through 2009-10). Therefore, groundwater produced from the Central Basin does not require desalination. However, there may be opportunities for use of desalinated ocean water as a future potential water supply source, if needed, by partnering with other agencies that develop ocean desalination programs.

4.5 RECYCLED WATER OPPORTUNITIES

4.5.1 RECYCLED WATER AND POTENTIAL FOR USE

Section 10633

The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:

The City recognizes the importance of using recycled water as a means of reducing reliance on other water sources (i.e. imported water, groundwater) both regionally and within the City. Demand for recycled water within the City has increased since the City's customers began receiving and using recycled water in 1992. As population within the City continues to grow, the City looks to promote the expansion of recycled water infrastructure and use of this water source where feasible. Table 4-6 summarizes the names and roles of the agencies primarily responsible for the initial development as well as the continued and future use of this water source within the City of Downey and surrounding areas. These roles along with a description of past, current and future recycled water use within the City are explained in more detail below.

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Table 4-6 Recycled Water Participating Agencies

Participating Agencies	Role in Plan Development
MWD	Recycled water usage incentives for member agencies (i.e. CBMWD)
CBMWD	Development of Master Plan; Recycled water distribution; Provider of recycled water to City of Downey
CSDLAC	Operation and maintenance of water reclamation plants; Producer of recycled water; Recycled water distribution
City of Downey	Recycled water usage incentives to City customers; Usage requirements for new developments; Recycled water distribution

CBMWD purchases and resells tertiary treated recycled water produced by CSDLAC to the City. Since FY 2000-01, the City has purchased and used an average of 703 AFY of recycled water from CBMWD. Recycled water is primarily used for irrigation of landscaping within the City of Downey. It is also used for lakes and ponds at locations such as the Rio Hondo Golf Course and Wilderness Park. The use of recycled water has gained support in the community, and there are more potential customers who would like to begin using recycled water to meet some of their water demands.

4.5.2 WASTEWATER COLLECTION, TREATMENT, AND DISPOSAL

Section 10633

(a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

(b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

Wastewater produced within the City of Downey is composed primarily of effluent water generated from the City's various customers (i.e. residential, commercial,

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industrial). The quantity of wastewater generated is related to the population and the water use within the corresponding service area. Upon generation, wastewater is transferred, by way of service connections (i.e. laterals) and collection mains, to trunk sewers and interceptors. Sewer connections (laterals) are privately owned, operated, and maintained, while collection mains and trunk sewers are owned, operated, and maintained by the City and CSDLAC respectively.

The City's Sanitary Sewer System is comprised of approximately 200 miles of sewer collection mains, 4,300 manholes, 2 lift stations, and other associated facilities. The piping is primarily composed of vitrified clay, and ranges in diameter from 6-inches to 21-inches with the majority (90 percent) of the piping 8-inches. CSDLAC owns, operates, and maintains a network of approximately 27 miles of trunk sewers within the City of Downey that range in size from 10-inches to 78-inches in diameter.

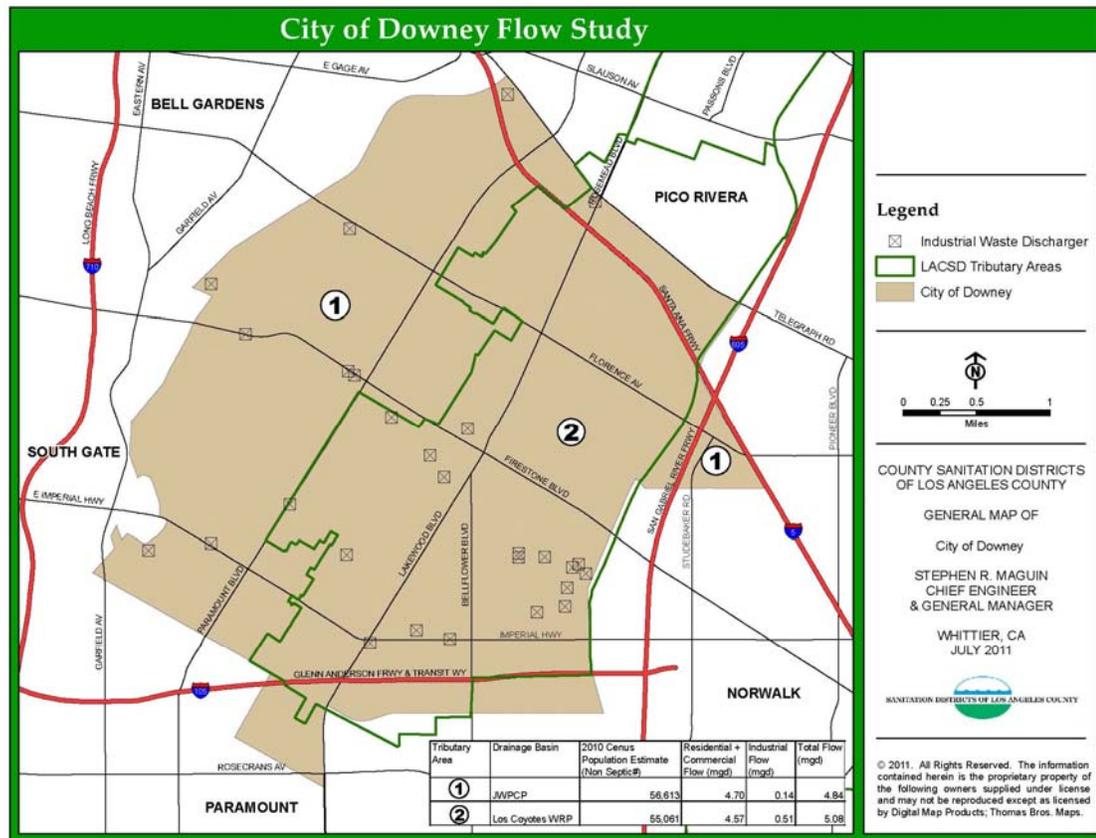
In addition to providing sewage conveyance via trunk sewers and interceptors, CSDLAC also provides treatment services for the City. CSDLAC owns and operates a total of ten water reclamation plants (WRPs) and a main processing plant, that form an interconnected network known as the Joint Outfall System (JOS). Sewer systems within the JOS convey wastewater to WRPs for water reclamation and hydraulic relief, or flow directly to the main processing facility, the Joint Water Pollution Control Plant (JWPCP), for secondary treatment and solids processing. Wastewater generated within the City of Downey is ultimately sent to either the Los Coyotes WRP or the JWPCP depending on the location of the site producing the waste.

In preparation of the 2010 Plan, CSDLAC performed a 2010 wastewater flow analysis for Downey. A 2010 US Census Bureau population estimate of 111,772 was used by the CSDLAC to conduct the 2010 analysis for Downey. A sewage generation rate of 83 GPCD was applied to the population estimate in order to derive the amount of wastewater generated by residential and commercial areas. This rate was based on the historical average number of persons served within the JOS divided by the total flow

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received at all plants. Industrial water discharges were ultimately added to the estimate in order to account for flows generated by warehouses and manufacturing within the City. CSDLAC's Geographic Information System (GIS) was then used to determine what portion of Downey's flow is tributary to the Los Coyotes WRP versus the JWPCP. Population estimates were redistributed to only those portions of Downey that contained residential or commercial land use. The total industrial flows were determined by adding the permitted discharges located within each drainage area. Figure 4-2, provided by CSDLAC, illustrates the results of the analysis including a breakdown of how much of the wastewater generated in Downey flows to the JWPCP and how much flows to the Los Coyotes WRP.

Figure 4-2 City of Downey Wastewater Flow Analysis



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The Los Coyotes WRP, which began operation in 1970, has a treatment capacity of about 37.5 MGD and provides disinfected tertiary treated effluent. The Los Coyotes WRP serves a total regional population of approximately 370,000 people and produced an average of 24.16 MGD (27,059 AFY) of disinfected tertiary treated recycled water during FY 2009-10. The total volume of wastewater collected and treated at the Los Coyotes WRP, as well as the amount available for re-use as recycled water, are shown in Table 4-7. An average of 5.23 MGD (5,855 AFY), or 21.6 percent of the recycled water produced during FY 2009-10 at the Los Coyotes WRP was re-used for landscape irrigation, industrial applications, and groundwater replenishment. The level of treatment necessary for wastewater to be re-used as recycled water is approved by the California Department of Public Health (CDPH). These requirements are contained in Title 22 of the California Code of Regulations along with a list of approved recycled water uses. Extensive monitoring is conducted by CSDLAC to ensure compliance with all applicable local, state, and federal water quality regulations. Any recycled water generated from the Los Coyotes WRP that is not reused is dechlorinated and discharged to the ocean via the San Gabriel River (see Table 4-8). Discharge water meets all applicable local, state, and federal water quality standards for discharge water including National Pollutant Discharge Elimination System (NPDES) requirements. Waste solids generated from the treatment processes at the Los Coyotes WRP are transferred via trunk sewers to the JWPCP for solids processing.

Table 4-7 Recycled Water – Wastewater Collection and Treatment
(DWR Guidebook Table 21)

Table 21 Recycled water — wastewater collection and treatment							
Type of Wastewater	2005	2010	2015	2020	2025	2030	2035 - opt
Wastewater collected & treated in service area	399,000	338,000	373,300	408,600	443,900	479,000	--
Los Coyotes Water Reclamation Plant	37,000	24,000	28,500	33,000	37,500	42,000	--
Joint Water Pollution Control Plant	362,000	314,000	344,800	375,600	406,400	437,000	--
Volume that meets recycled water standard¹	37,000	24,000	28,500	33,000	37,500	42,000	--

Units are in acre-feet per year.
¹ Based on flow from the Los Coyotes Water Reclamation Plant

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Table 4-8 Non-Recycled Wastewater Disposal
(DWR Guidebook Table 22)

Table 22 Recycled water — non-recycled wastewater disposal							
Method of disposal	Treatment Level	2010	2015	2020	2025	2030	2035 - opt
San Gabriel River (Los Coyotes WRP)	Tertiary	21,000	23,250	25,500	27,750	30,000	--
Total		21,000	23,250	25,500	27,750	30,000	

Units are in acre-feet per year.

The JWPCP, which began operation in 1928, currently provides treatment for approximately 300 MGD of wastewater. The facility provides primary and secondary treatment with disinfection. The JWPCP serves a population of approximately 3.5 million people throughout LA County. In FY 2009-10, the JWPCP produced 280.47 MGD (314,284 AFY) of disinfected secondary water. The total volume of treated wastewater discharged from the JWPCP is shown in Table 4-8. Solids collected in primary and secondary treatment are processed in anaerobic digestion tanks where bacteria break down organic material and produce methane gas. Following digestion, the solids are dewatered and hauled off-site for use in composting, land application, or combined with municipal solid waste for co-disposal. The methane gas generated in the anaerobic digestion process is used to produce power and digester heating steam in a combined cycle power plant that utilizes gas turbines and waste-heat recovery steam generators. Due to the onsite generation of power, the JWPCP is self-sufficient with respect to energy requirements. Treated wastewater is ultimately disinfected prior to being sent to the Pacific Ocean through a network of outfalls. The outfalls extend two miles off the coast of Southern California into the Palos Verdes Peninsula to a depth of 200 ft. Though highly treated, effluent from the JWPCP does not meet recycled water standards and is therefore not re-used for such purposes. However, all water discharged to the ocean is monitored to ensure compliance with applicable local, state, and federal standards for discharge water.

4.5.3 CURRENT RECYCLED WATER USE

Section 10633

(c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use

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The City of Downey receives its recycled water from CBMWD as part of the Central Basin Recycled Water Project (CBRWP). CBMWD purchases and resells tertiary-treated recycled water produced at CSDLAC's Los Coyotes and San Jose Creek WRPs. The CBRWP is comprised of two separate projects: E. Thornton Ibbetson Century (Ibbetson Century Project) and Esteban E. Torres Rio Hondo (Torres Project) Recycled Water Projects. CBMWD authorized design of the Ibbetson Century Project in 1990. By 1992, transmission mains, distribution mains, pump stations, and associated facilities were constructed, and the project had begun delivering recycled water from the Los Coyotes WRP to recycled water users within the City of Downey and surrounding jurisdictions. In 1994, the Ibbetson Century Project was expanded to include the northern portion of CBMWD's service area. The expansion, referred to as the Esteban E. Torres Rio Hondo Recycled Water Project, delivers recycled water from the San Jose Creek WRP to cities outside of the Ibbetson Century Project service area.

As a follow-up to the Ibbetson Century and Torres Projects, CBMWD is currently expanding its distribution of recycled water by looping the two systems under the Southeast Water Reliability Project (SWRP). The SWRP is expected to increase the number of recycled water use sites as well as increase pressure and flow to many existing customers through connection of the two distribution systems emanating from the Los Coyotes and San Jose Creek WRPs. Though such benefits are not expected to have a large impact on the City of Downey, the anticipated increase in water demand from the San Jose Creek WRP may help free additional pumping capacity at the Los Coyotes WRP.

Once purchased from CBMWD, recycled water is re-sold by the City of Downey to its customers at a discount of 15 percent off the current rate for potable water. Since FY 1992-93, the City has purchased an average of 608 AFY of recycled water from CBMWD. Since FY 2000-01, the average amount of recycled water used by the City is 703 AFY, which reflects the general increase in recycled water use in the City over the

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past several years. Table 4-9 summarizes the City's current recycled water users, location, and corresponding annual usage. Table 4-10 compares recycled water use projections for FY 2009-10 from the City's 2005 Plan to actual FY 2009-10 recycled water use.

Table 4-9 FY 2009-10 Recycled Water Usage Summary

Site	User	Location Information	Meter Size	Usage (AF)
1	Downey Unified School District	Columbus School	4"	18.75
2	Palm Growers Nursery	East City Limits @ Foster Rd.	2"	0.00
3	Humedo Nursery	South Side of Imperial @ East City Limits	3"	7.15
4	Downey Unified School District	Lewis School	3"	4.48
5	Caltrans	105 Freeway & Bellflower	3"	21.23
6	City of Downey	Foster Rd @ Premier Ave	2"	0.89
7	Downey Unified School District	Carpenter Elementary School	4"	9.16
8	City of Downey	Downey Cemetery	3"	26.19
9	Caltrans	S/S 105 Freeway & E/S Lakewood	2"	1.51
10	Caltrans	S/S 105 Freeway & E/S Lakewood	2'	7.14
12	Caltrans	N/S 105 Freeway & W/S Lakewood	3"	4.43
13	Caltrans	N/S 105 Freeway & W/S Lakewood	1-1/2"	0.04
14	Caltrans	S/S 105 Freeway & W/S Lakewood	1-1/2"	0.07
16	Downey Unified School District	South Middle School	3"	13.43
17	City of Downey	Independence Park	3"	15.79
18	Downey Unified School District	Gauldin Elementary School	3"	6.46
19	City of Downey	Rio San Gabriel Park	4"	41.53
20	Downey Unified School District	Rio San Gabriel Elementary School	3"	13.71
21	Downey Unified School District	East Middle School	4"	20.62
22	City of Downey	Wilderness Park	6"	103.94
23	LA County Dept. of Public Works	Rio Hondo Channel S/O Florence	2"	0.27
24	City of Downey	Rio Hondo Golf Course South Lake #6	8"	65.85
25	City of Downey	Rio Hondo Golf Course North Lake #3	8"	194.95
26	City of Downey	Crawford Park	3"	7.91

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27	City of Downey	Temple Park	1-1/2"	1.36
28	Downey Unified School District	West Middle School	4"	15.87
29	City of Downey	S/S Steve Horn Way E/O Bellflower	3"	1.51
30	Kaiser	Kaiser Admin. Building @ Bellflower/Steve Horn	3"	3.60
31	Downey Studios	Film Studios Back Lot off of Bellflower	2"	5.61
32	City of Downey	W/S Bellflower N/O Steve Horn Way	2"	11.06
33	City of Downey	W/S Bellflower S/O Stewart & Gray Rd.	2"	2.48
34	Downey Unified School District (Vacant)	Downey High School - S/S Fifth @ Lakewood	4"	0.00
35	City of Downey	E/S Lakewood Between 3rd & 5 th	2"	0.67
36	Big Lots Stores	9020 Firestone Lakewood Side/Back of Carls Jr.	2"	3.53
37	City of Downey	W/S Lakewood S/O 11215 Lakewood	2"	0.75
38	City of Downey	Rose @ E/S Lakewood For Triangle Park	2"	1.23
39	IRG (Vacant)	E/S Lakewood @ Alameda	2"	0.00
40	Downey Landing	E/S Lakewood N/O Landing Mid Entrance	2"	4.82
41	City of Downey	E/S Lakewood N/O Hall Rd	3"	2.95
42	Coca Cola	W/S Lakewood S/O bellflower	2"	10.08
43	City of Downey	E/S Lakewood Between 2 S Landing Entrance	2"	3.66
44	Downey Landing	W/S Bellflower @ Entrance to Landing	2"	4.64
45	Downey Landing	S/S Stewart & Gray Behind Chile's Restaurant	2"	5.06
46	City of Downey	S/S S&G for N Pkwy Vultee to Corrigan	2"	1.31
47	Desert Reign Church	S/E Corner Of Lakewood & Hall Rd.	2"	3.50
48	City of Downey	E/S Lakewood @ S/O Rose	2"	4.75
49	Cornerstone Commerce Center	N/S of Stewart & Gary across from Utilities Yard	2"	5.28
50	City of Downey (Vacant)	S/S Stewart & Gary in front of Utilities Yard	2"	0.00
51	Space Learning Center/Park	N/S of park on Steven Horn Way	4"	34.38
52	City of Downey	E/O Lakewood @ 9002 Imperial Hwy	2"	0.31
53	City of Downey	N. Steve Horn Pkwy at 2nd Kaiser Dr from East	3"	10.43
54	Kaiser Hospital	S. Steve Horn Pkwy W/O E Kaiser Driveway	4"	12.94
55	SCE Sub Station Landscape	S. Steve Horn Pkwy W/O Driveway	2"	0.90
56	City of Downey	SW Corner of Lakewood/Imperial	1"	0.74
57	Vacant	S of Imperial/W of Lakewood @ 12631 Lkwd	2"	0.00
58	Downey Unified School District (Vacant)	Ward Elementary School; Sidewalk between 12731 & 12725 Lakewood	3"	0.00

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59	City of Downey	E/S of Lakewood next to cemetery	2"	0.33
60	City of Downey	E/S Lakewood across from #12209/15	2"	2.15
61	City of Downey	8740 Firestone S/W Corner of Firestone & Nash	2"	0.50
62	CitiBank	8764 Firestone S/S Firestone; W/O Drive Way	1"	0.44
Total User Sites: 60		Total Usage (AF):		742.35

Notes:

Sites 11 and 15 are no longer active

Table 4-10 2005 UWMP Use Projection Compared to 2010 Actual
(DWR Guidebook Table 24)

Table 24 Recycled water — 2005 UWMP use projection compared to 2010 actual		
Use type	2010 actual use	2005 Projection for 2010 ¹
Agricultural irrigation	--	--
Landscape irrigation/Ponds ²	417	1,035
Commercial irrigation ³	64	--
Golf course irrigation/Ponds	261	--
Wildlife habitat	--	--
Wetlands	--	--
Industrial reuse	--	--
Groundwater recharge	--	--
Seawater barrier	--	--
Geothermal/Energy	--	--
Indirect potable reuse	--	--
Other (user type)	--	--
Other (user type)	--	--
Total	742	1,035

Units are in acre-feet per year.

¹ From the 2005 UWMP. There has been some modification of use types. Data from the 2005 UWMP can be left in the existing categories or modified to the new categories, at the discretion of the water supplier.

² Includes parks, schools, cemeteries, churches, residential, or other public facilities)

³ Includes commercial building use such as landscaping, toilets, HVAC, etc) and commercial uses (car washes, laundries, nurseries, etc)

Recycled water is currently being used in several park and golf course ponds and for irrigation of greenbelt areas, landscape medians, parks, golf courses, plant nurseries, and schools. As recycled water is primarily used for irrigation of landscaping within the City of Downey, such demand in any particular year is highly dependent on precipitation. This is particularly evident in the reduction of recycled water demand in FY 2004-05 for example, which was characterized by larger than average annual precipitation. Regardless of the yearly fluctuations resulting from varying rainfall totals, the overall trend of recycled water demand is expected to increase along with the City's population and development over the next 20 years.

4.5.4 POTENTIAL USES OF RECYCLED WATER

Section 10633

(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

CBMWD has established itself as one of the leaders in the marketing of recycled water, since the establishment of its recycled water distribution system in the early 1990's. CBMWD views the use of recycled water as a key component of its efforts to augment potable water supplies and reduce dependence on imported water.

In 2008, CBMWD prepared a Recycled Water Master Plan, which identified and prioritized areas within Central Basin's service area where recycled water has the potential to expand. As part of this study, a database was prepared to locate and identify future customers. CBMWD's 2008 Recycled Water Master Plan estimated a total potential recycled water demand of approximately 1,700 AFY within the City's service area. Although CBMWD's 2008 Recycled Water Master Plan is currently being updated, CBMWD's goal is to maximize the potential usage of recycled water throughout its service area.

In addition to actions being implemented by CBMWD to identify new recycled water customers, the City has taken an aggressive approach to the idea of expanding the use of recycled water throughout its service area. In an effort to lower CBMWD's cost of expanding its recycled water distribution system, the City has taken the lead on the construction of recycled water facilities through several of its capital improvement projects over the last eight years allowing for the extension of recycled water mains on several major streets including Lakewood Blvd., Independence Park/Bellflower Blvd., Stewart and Gray Rd., and Congressman Steve Horn Way. The City will continue to coordinate with CBMWD and take advantage of such opportunities to expand recycled

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water facilities throughout its borders to allow for optimization of recycled water use within the City.

The City has identified potential non-irrigation applications for use of recycled water such as installation of dual plumbing for use in toilets and cooling systems at proposed future developments. However, the primary potential recycled water application moving forward will still be irrigation of landscaping at schools and future developments adjacent to recently constructed mains as well as irrigation of landscaping at schools, parks, medians, freeway abutments, and developments which would require further extension of the recycled water distribution system to accommodate connection of the irrigation systems to this source of water.

As discussed previously, the City is also considering a 6.5 MGD Downey Regional Water Reclamation and Groundwater Augmentation Project consisting of an advanced recycled water treatment facility in which the City would purchase tertiary treated recycled water from CSDLAC, treat it through a new, City-owned advanced treatment facility, and inject into the Central Basin via ASR wells to increase its supply. The City has estimated a potential product water capacity of 5 MGD or 5,601 AFY after treatment.

The City's potential recycled water usage over the next 20-years is summarized in Table 4-11 and is based on existing uses and potential landscape irrigation, dual plumbing (toilets, cooling), and groundwater recharge applications identified by the City, CBMWD's Master Plan, and CSDLAC's Status Report on Recycled Water, along with projected recycled water usage resulting from recent and ongoing improvements to the recycled water distribution facilities within the City.

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Table 4-11 Recycled Water – Potential Future Use
(DWR Guidebook Table 23)

Table 23 Recycled water — potential future use								
User type	Description	Feasibility ¹	2015	2020	2025	2030	2035 - opt	
Agricultural irrigation			0	0	0	0	--	
Landscape irrigation/Ponds ²	Existing and potential sites	Feasible	427	532	760	840	--	
Commercial irrigation ³	Landscape/dual plumbing/cooling	Feasible / Cost	199	245	268	293	--	
Golf course irrigation/Ponds	Existing Site	NA- Existing	261	261	261	261	--	
Wildlife habitat			0	0	0	0	--	
Wetlands			0	0	0	0	--	
Industrial reuse			0	0	0	0	--	
Groundwater recharge	DRWRGAP	Cost	0	0	0	7,281	--	
Seawater barrier			0	0	0	0	--	
Geothermal/Energy			0	0	0	0	--	
Indirect potable reuse			0	0	0	0	--	
Other (user type)			0	0	0	0	--	
Other (user type)			0	0	0	0	--	
Total			0	887	1,038	1,289	8,675	0

Units are in acre-feet per year.

¹ Technical and economic feasibility.

² Includes parks, schools, cemeteries, churches, residential, or other public facilities)

³ Includes commercial building use such as landscaping, toilets, HVAC, etc) and commercial uses (car washes, laundries, nurseries, etc)

4.5.5 PROJECTED RECYCLED WATER USE

Section 10633

(e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15 and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision

Despite the availability of recycled water from the Los Coyotes WRP and the potential use identified in Table 4-11, the implementation of recycled water use at a particular site is primarily dependent upon the cost of the capital improvements necessary to meet the pressure and flow requirements of the proposed customer versus the amount of recycled water projected to be used by that customer. In some cases the costs to construct facilities necessary to provide recycled water to the new customer exceed the benefits associated with the increased use of recycled water. The recycled water use projections provided in this section focus primarily on potential use sites that appear to be the most economically feasible based on proximity to existing, recently-constructed, or planned distribution facilities. Based on economically feasible projects, the City's recycled water demands are projected to increase from 742 AFY in FY 2009-10 to approximately 927 AFY by FY 2029-30. The City's projected recycled water demands are provided in Table 4-1.

Table 4-10 (See Section 4.5.3) compares recycled water use projections for FY 2009-10 from the City's 2005 Plan to actual FY 2009-10 recycled water use.

4.5.6 ENCOURAGING USE OF RECYCLED WATER

Section 10633

(f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

The City has recognized the use of recycled water as a means by which to reduce the City's reliability on groundwater and imported water sources. To help promote the use of recycled water, the City buys recycled water from CBMWD and sells it to customers within the City at 85 percent of the potable water rate.

Under recycled water projects managed by the City, potential customers are also often given the option of allowing the City to oversee the extension of service laterals thereby eliminating what would otherwise be an overhead cost for the proposed customer.

In addition, CBMWD may offer customers, lacking financial capability, advanced funds to cover the costs of onsite plumbing retrofits required as a result of using recycled water. The plumbing retrofit costs can be amortized over a period of up to 10 years at CBMWD's cost of funds. Repayment is ultimately provided through charges seen on the customer's water bill. The rate charged on the customer's bill is determined by the differential between the potable and recycled water rates to ensure that the customer is never charged in excess of the current potable water rate. Upon repayment of the loan, the rate would revert back to the current recycled water rates.

CBMWD promotes the use of recycled water within its system as a more reliable water source than imported water. To help promote its use, MWD offers CBMWD an incentive payment for every AF of recycled water delivered by CBMWD up to 10,500

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AFY through FY 2019. According to CBMWD (2010 UWMP), efforts are currently focused on maximizing the recycled water usage potential of the original regional system, in order to take advantage of MWD’s incentive program.

Both CBMWD and the City pursue different sources of funding to help subsidize new recycled water distribution facilities by submitting applications for grant funds when available. Use of such funds, when approved, help increase the economic feasibility of constructing distribution system improvements necessary to reach new customers.

The above methods implemented to encourage the use of recycled water and the recycled water use projections resulting from these actions are summarized in Table 4-12.

Table 4-12 Methods to Encourage Recycled Water Use
(DWR Guidebook Table 25)

Table 25 Methods to encourage recycled water use						
Actions	Projected Results					
	2010	2015	2020	2025	2030	2035 - opt
Financial incentives						
CBMWD, MWD, and City Financial Incentives	742	787	841	905	927	--
Total	742	787	841	905	927	--

Units are in acre-feet per year.

4.5.7 PLAN FOR OPTIMIZING USE OF RECYCLED WATER

Section 10633

(g) A plan for optimizing the use of recycled water in the supplier’s service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

CBMWD is updating its Recycled Water Master Plan (Master Plan) in an effort to take advantage of the unused capacity of recycled water at both the Los Coyotes and San Jose Creek WRPs. The focus of the Master Plan will be to capture changes in the industrial and commercial customer base and identify existing and emerging

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applications for recycled water use. The process will result in an updated identification and prioritization of potential recycled water customers within CBMWD's service area including the City of Downey.

CBMWD plans to interface with agencies in its service area, including the City of Downey, during the development of the Master Plan update. Downey hopes to have the opportunity at such time to provide input regarding potential recycled water use within City limits and the expansion of recycled water facilities to serve potential customers.

In addition to actions being implemented by CBMWD to identify new recycled water customers, the City of Downey has taken an aggressive approach to the idea of expanding the use of recycled water throughout its service area. In an effort to lower CBMWD's cost of expanding its recycled water distribution system, the City has taken the lead on the construction of recycled water facilities through several of its recent capital improvement projects allowing for the extension of recycled water mains on several major streets including Lakewood Blvd., Independence Park/Bellflower Blvd., Stewart and Gray Rd., and Congressman Steve Horn Way. The City will continue to coordinate with CBMWD and take advantage of such opportunities to expand recycled water facilities throughout its borders to allow for optimization of recycled water use within Downey.

To help ensure the use of the recycled water upon expansion of facilities, the City also requires developments to provide and use recycled water for landscape irrigation and other non-potable water needs, if approved, in cases where recycled water facilities are located in the vicinity of the developments. Such requirements coupled with the City's efforts to expand the recycled water distribution system, and customer cost incentives previously discussed, help promote the increased use of recycled water within the City. Increasing the use of recycled water within the City will help offset increases in potable water demand anticipated as a result of an expanding population

and future development, thus helping to ensure the reliability of future potable water supplies for the City's growing customer base.

4.6 FUTURE WATER PROJECTS

Section 10631

(h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water uses as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

The City's future water supply projects are summarized in Table 4-13 and include the following:

- New Groundwater Wells – The City plans to construct three new groundwater wells with generators and associated water main improvements over the next 15 years. The proposed wells are anticipated to have a capacity of 3,000 gpm each and would be used to provide redundancy to allow for abandonment of old, low capacity wells.
- Groundwater Well Refurbishment – The City plans to increase the frequency of existing groundwater well and associated infrastructure refurbishment (pump, motor, etc.) to a 5-year schedule to ensure delivery of high quality groundwater. This will help restore capacity of the City's wells and allow for greater redundancy in meeting water demands.
- Purchase of Water Rights and/or Conservation Projects – Based on the recently adopted water rate structure, the City will have the ability to purchase additional groundwater rights in the Central Basin over the next 15 years to meet future water demand needs and/or implement water conservation (i.e. recycled water, other) projects to help offset increases in potable water demands.

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- Water Distribution Rehabilitation and Replacement – The City will continue to replace aging water meters, fire hydrants, water mains, and associated facilities to help minimize water loss.
- Downey Regional Water Reclamation and Groundwater Augmentation Project - As discussed in Section 4.3.2, the City is considering an advanced recycled water treatment facility in which the City would purchase tertiary treated recycled water from CSDLAC, treat it through a new, City-owned advanced treatment facility, and inject into the Central Basin via ASR wells to increase its supply.

Table 4-13 Future Water Supply Projects
(DWR Guidebook Table 26)

Table 26 Future water supply projects								
Project name ¹	Projected start date	Projected completion date	Potential project constraints ²	Normal-year supply ³	Single-dry year supply ³	Multiple-dry year first year supply ³	Multiple-dry year second year supply ³	Multiple-dry year third year supply ³
Purchase of Water Rights / Conservation	Current	2025	Availability	2,340	2,340	2,340	2,340	2,340
Water Rights Leases	Current	On-going	Availability	1,308	2,546	2,546	2,809	2,884
Additional Groundwater Wells (3)	2012	2025	--	--	--	--	--	--
Groundwater Well Refurbishment	Current	On-going	--	--	--	--	--	--
DRWRGAP	NA	NA	Cost	7,281	7,281	7,281	7,281	7,281
Total				10,929	12,167	12,167	12,430	12,505

Units are in acre-feet per year.

¹ Water volumes presented here should be accounted for in Table 16.

² Indicate whether project is likely to happen and what constraints, if any, exist for project implementation.

³ Provide estimated supply benefits, if available.

**SECTION 5
WATER SUPPLY RELIABILITY AND WATER SHORTAGE
CONTINGENCY PLANNING**

5.1 WATER SUPPLY RELIABILITY

5.1.1 WATER MANAGEMENT TOOLS

Section 10620(f)

An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

This Plan describes water management tools and options used by the City to maximize local resources and minimize the need to import water. Information on these tools and options can be found in the following sections of the Plan: Groundwater (Section 4.2), Recycled Water Opportunities (Section 4.5), Future Water Projects (Section 4.6), and Demand Management Measures (DMMs) (Section 6).

5.1.2 SUPPLY INCONSISTENCY

Section 10631

(c)(2) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.

The City's 20 groundwater wells have a combined production capacity of 53,211 AFY which far exceeds the annual potable water requirements of the City. This capacity is also greater than the City's estimated Maximum Daily Demand and Peak Hourly Demand.

The reliability of the City's groundwater supply is primarily dependent upon the management of the Central Basin which is governed by its adjudication as described in

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Section 4.2. The successful management of Central Basin’s groundwater supplies by DWR via the Central Basin Judgment, combined with the LACDPW/WRD recharge/replenishment program in the spreading grounds and the guaranteed minimum inflow from the Main Basin (see Sections 4.2.2 and 4.2.3), have resulted in stabilized groundwater levels since the mid-1970s despite several drought periods. As a result, the City has not experienced any groundwater supply deficiencies, as summarized in Table 5-1.

Table 5-1 Factors Resulting in Inconsistency of Supply
(DWR Guidebook Table 29)

Table 29 Factors resulting in inconsistency of supply							
Water supply sources ¹	Specific source name, if any	Limitation quantification	Legal	Environmental	Water quality	Climatic	Additional information
Groundwater	Central Basin	NA	NA	NA	NA	NA	
Purchased Water (emergency use)	CBMWD	NA	NA	NA	NA	NA	

Units are in acre-feet per year.
¹ From Table 16.

If the City’s annual water demands were to exceed its allowable extractions for a given year, including water rights leases, the City can supplement its groundwater supply with imported water delivered through CBMWD or water delivered through its Emergency Interconnections with adjacent water agencies. Though rarely if ever used, CBMWD Purchased Water Connections and Emergency Interconnections provide additional buffers of 39,815 AFY (24,614 gpm) and 12,904 AFY (8,000 gpm), respectively, that are available for use in the rare event that the City’s demand for water exceeds its groundwater well capacity. This results in a total reserve capacity of 32,614 gpm from Purchased Water Connections and Emergency Interconnections during potential groundwater supply inconsistencies. The reliability of imported water supplies is included in CBMWD’s Plan.

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The City of Downey plans to continue increasing its use of recycled water in the next 20 years in the hopes of reducing its reliance on other water resources such as the pumping of groundwater and purchasing of CBMWD surface water.

According to CSDLAC, the amount of recycled water available for reuse within the Central Basin is much greater than the amount currently being used. In addition, recycled water is not subject to hydrologic variation and is therefore anticipated to be available to meet projected demands for the next 20 years including dry year scenarios making it one of the most consistent sources of water available to the City.

A summary of potential water quality (See Section 5.3) impacts to the City's water supply is provided in Table 5-2. A discussion regarding the City's total water supplies (groundwater and recycled water) during average year, single dry year, and multiple dry year scenarios is provided in Section 5.4

Table 5-2 Water Quality – Current and Projected Water Supply Impacts
(DWR Guidebook Table 30)

Table 30 Water quality — current and projected water supply impacts							
Water source	Description of condition	2010	2015	2020	2025	2030	2035 - opt
Groundwater	See Section 5.3	No Impact	--				
Purchased Water (emergency use)	Treated	No Impact	--				

Units are in acre-feet per year.

5.2 WATER SHORTAGE CONTINGENCY PLANNING

5.2.1 CATASTROPIC INTERRUPTION OF WATER SUPPLIES

Section 10632

(c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

The City previously prepared a vulnerability assessment (VA) in accordance with the requirements of the U.S. Environmental Protection Agency. The requirements for

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performing a VA came as the result of the September 11, 2001 attack on the World Trade Center and the federal legislation that was enacted out of concern for security needs and improvements at the nation's water supply facilities. The VA evaluated each water production facility in the City, identifying its vulnerability to both manmade and natural disasters.

The final VA report, which due to the sensitive nature of its contents is confidential, made recommendations for improvements to each of the facilities. Many of the recommended improvements have been incorporated into the physical components of the facilities as well as the operations of the City's Utilities Division.

Following the completion of the VA, the City updated its Emergency Response Plan (ERP). The ERP provides the organizational framework for the continued operation of the City's Utilities Division during an emergency or disaster. The ERP is supplemental to the City's Local Hazard Mitigation Plan/Emergency Operations Plan, and focuses on the specific area of responsibility of the City's Utilities Division in maintaining the operation of the City's water system to ensure an adequate supply of potable water for fire fighting and other emergency purposes.

The goal of the ERP is to guide, enable and identify the actions necessary for the City's Utilities Division personnel to prepare for and conduct emergency operations. This was done by identifying the City's Utilities Division emergency planning, organization and response policies and procedures. The ERP addresses how the City's Utilities Division will respond to extraordinary events or disasters, and is based on the functions and principals of the Standardized Emergency Management System (SEMS).

The City receives power from the Southern California Edison Company (SCE). There are three SCE service areas in the City. The City's 20 active groundwater wells and CBMWD purchased water connections are dispersed throughout the City's service

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areas. Therefore, all three SCE service area substations must be compromised before the City will lose all of its active wells and purchased water connections.

The Utilities Division has a total of ten portable generators designated for emergency purposes. Three of these generators are small portable Honda generators intended for use at the Utilities Yard for powering the telemetry, telephone, lighting or other systems as determined necessary. Of the remaining generators, five are designated for water supply (i.e. wells) purposes and two for sanitary sewer (sewer lift stations) purposes.

In the event of an earthquake, loss of SCE power to one or more service areas, or City-wide loss of electrical power, the five water supply standby generators would be utilized to provide back-up/temporary power to the wells that would be most beneficial in restoring water service (dependent upon which wells are still operable following assessment of damage).

Each of the water supply generators is equipped with a 24-hour tank of diesel fuel configured to allow for easy re-fueling by a delivery truck. To facilitate a quick connection to the standby portable generators, the City has installed receptacles at each of the water wells. The City plans to purchase an emergency generator with the installation of each future groundwater well to allow for operation of additional groundwater wells in the event of a city-wide or other power outage.

Based on the designated uses of the City's generators, only five wells could be operated in the unlikely event that power in all three SCE service areas is compromised. This could be further complicated by the loss of one of the larger capacity wells.

If such an event were to occur, the City would likely have to supplement its groundwater supply by using its three CBMWD connections to provide an adequate supply of potable water to meet fire fighting and customer demands. These connections are only utilized for emergencies in the event that system demand exceeds

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the production capacity of the City's groundwater wells. Though such situations are rare due to the large capacity of the City's groundwater wells, the CBMWD connections provide an additional supply of water that can be quickly tapped in the event of a fire or other emergency. Two of these connections are set to open and close automatically based on predetermined pressure set points, while the third connection can be manually opened if system demand requires its use. Activating any two of the CBMWD connections would provide sufficient quantities of water to temporarily replace inoperable wells until repairs can be made.

The City maintains five emergency interconnections with adjacent water agencies. Two of the interconnections are equipped with two-way valves, which have the ability of providing water both to and from the City. Of the remaining three interconnections, one has the ability of providing water to the City and the other two are equipped with one-way valves which presently have the ability of providing City water to the corresponding agencies.

Under normal operating conditions, the City does not chlorinate the water supply. However, all of the City's water wells have electrical outlets and plumbing connections for the installation of portable chlorinators. The City maintains ten of these units in its current equipment inventory, along with granular chlorine (calcium hypochlorite). Agreements have also been established with various vendors for emergency supplies if needed.

The City's ERP also contains procedures for implementation of its Emergency Notification Plan should primary drinking water standards be exceeded, as well as emergency water conservation measures, should pressure in the City's water system drop as the result of distribution system damage due to an earthquake or other disaster (i.e. fire).

5.2.2 MANDATORY PROHIBITIONS

Section 10632

(d) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

The City adopted Ordinance No. 925 in 1991. As a result, Sections 7350 through 7356 were added to the City of Downey Municipal Code, establishing water conservation regulations and restrictions to be followed by customers within the City's service area. These conservation measures limit the amount of potable water that may be delivered to customers, in order to protect the health, welfare, and safety of the community. A copy of Ordinance No. 925, and the corresponding water conservation regulations and restrictions are provided in Appendix G.

Ordinance No. 925 includes restrictions and prohibitions on watering lawns and landscapes; washing automobiles, boats, sidewalks, driveways, parking areas, and patios; refilling swimming pools and spas; and others. This ordinance was adopted in response to the drought of 1987 through 1992 and the resulting reduction of MWD's firm deliveries of imported water. During this same period of time, MWD developed a conservation credit and overuse penalty program as part of their Incremental Interruption and conservation plan (IICP), to encourage conservation of MWD's imported water supply. CBMWD passed these credits and penalties through to those agencies purchasing water from them to encourage water conservation. Subsequent droughts led to the development of additional MWD water shortage allocation plans which replaced the IICP. MWD's Water Supply Allocation Plan includes many of the key features and principles (i.e. conservation credits and overuse penalties) of the previous plans and is now the primary decision tool for imported water shortage allocation. A summary of the City's mandatory prohibitions is provided in Table 5-3.

Table 5-3 Water Shortage Contingency – Mandatory Prohibitions
(DWR Guidebook Table 36)

Table 36 Water shortage contingency — mandatory prohibitions	
Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
No wash down of sidewalks, driveways, parking areas, patios	Stage I
Runoff will not be allowed into streets, sidewalks, etc.	Stage I
Landscape irrigation between 4 pm and 10 am	Stage I
Restaurants will serve water only on request	Stage I
Filling and refilling of pools permitted between 6 pm and 6 am	Stage I
Water leaks must be repaired as soon as discovered	Stage I
Water from fire hydrants used only for firefighting and public safety	Stage I

5.2.3 CONSUMPTION REDUCTION METHODS

Section 10632

(e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

Following the adoption of Ordinance No. 925, the City developed a four-stage water-rationing plan, with reductions of up to 50 percent (see Table 5-4) to be implemented during declared water shortages. The plan includes both voluntary and mandatory rationing which are to be implemented depending on the causes, severity, and anticipated duration of the water supply shortage. The processes by which this plan and each of its four stages are implemented are provided in Section 5.4.2 (Stages of Action in Response to Water Supply Shortages).

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Table 5-4 Water Shortage Contingency – Consumption Reduction Methods
(DWR Guidebook Table 37)

Table 37		
Water shortage contingency — consumption reduction methods		
Consumption Reduction Methods	Stage When Method Takes Effect	Projected Reduction (%)
Water Use Prohibitions	Stage I	15%
Water Use Prohibitions + Health & Safety Allotment of 68 gpcd	Stage II	≥25%
Water Use Prohibitions + Health & Safety Allotment of 68 gpcd + Changes In Interior Use	Stage III	≥35%
Water Use Prohibitions + Health & Safety Allotment of 50 gpcd + Changes In Interior Use (i.e. Less showers, Minimize Flushing, etc.)	Stage IV	≥50%

Table 5-4 summarizes the City’s consumption reduction methods and the corresponding stages of action when the reduction methods take effect. Water prohibitions would be used initially (Stage I) to reduce water usage followed by Health and Safety Allotments starting at 68 gallons per capita-day (Stages II and III) and ending at 50 gallons per capita-day (Stage IV). Additional information on this subject is provided in Appendix H and includes sample calculations showing how the Health and Safety Allotments are used to achieve specific reduction goals.

5.2.4 PENALTIES OR CHARGES FOR EXCESSIVE USE

Section 10632

(f) Penalties or charges for excessive use, where applicable.

As previously mentioned, the City adopted Ordinance No. 925 in 1991. As a result, Sections 7350 through 7356 were added to the City of Downey Municipal Code, establishing water conservation regulations and restrictions to be followed by customers within the City’s service area. These conservation measures limit the amount of potable water that may be delivered to customers, in order to protect the health, welfare, and safety of the community. A copy of Ordinance No. 925, and the corresponding water conservation regulations and restrictions are provided in Appendix G.

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The City recently adopted new water rates. The new rate structure has both a fixed bi-monthly water meter charge based on the size of the meter and a variable bi-monthly water usage charge component based on metered bi-monthly water use. The variable bi-monthly water usage charge component has a tiered structure with usage tiers that more closely match water usage patterns of the customers thereby creating an escalating rate structure that is fair and equitable and promotes water conservation. Additionally, the new water rates are set so that the fixed water meter charge generates 22 percent of the revenue and the variable water usage charge generates the remaining 78 percent. This formula allows for a modestly stable revenue stream while meeting the goal to have the charges reflect actual water usage in order to provide an incentive for water conservation and discourage excessive water use.

In addition, Section 7332 of the City of Downey Municipal Code allows the City to shut off water service at any stage should any consumer willfully waste water in any manner. The service may be left off until wasteful practices are discontinued. Table 5-5 shows the penalties that the City can implement, including shutting off service at Stage I of the water rationing plan. Should the City have to implement the plan, additional penalties and charges for excessive use can be established during the adoption of resolutions at each stage of the plan.

Table 5-5 Water Shortage Contingency – Penalties and Charges
(DWR Guidebook Table 38)

Table 38 Water shortage contingency — penalties and charges	
Penalties or Charges	Stage When Penalty Takes Effect
Water Service Shut Off	Existing/Stage I
Charge for excessive use via escalating rate structure	Existing/Stage I

5.2.5 REVENUE AND EXPENDITURE IMPACTS

Section 10632

(g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

The City recently adopted a new tiered water rate structure (Resolution No. 11-7275) on June 28, 2011, as provided in Appendix I. The new rate structure was designed to establish a self-supporting Water Fund to recover the annual operation and maintenance (O&M) and capital improvement program (CIP) costs of providing service, as well as adequate reserves to allow operation of the system during periods of low consumption due to water shortages. To minimize impacts to customers, the rate increase is being phased in over five years to enable the City to generate a positive revenue stream from continued water sales and maintain adequate reserves as provided above. This structure minimizes the City's vulnerability to funding shortages when water consumption levels are reduced up to 50 percent. An analysis of revenue and expenditure impacts of reduced water consumption sales up to 50 percent reduction is provided in Table 5-6 below.

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Table 5-6 Analysis of Revenue and Expenditures

		Stage I 15%	Stage II 25%	Stage III 35%	Stage IV 50%
Revenues	New Rates^[1]	Reduction	Reduction	Reduction	Reduction
Water Sales	\$8,664,000	\$7,364,000	\$6,498,000	\$5,632,000	\$4,332,000
Meter Charges	\$2,418,000	\$2,418,000	\$2,418,000	\$2,418,000	\$2,418,000
Recycled Water Sales	\$280,000	\$280,000	\$280,000	\$280,000	\$280,000
Fire Services	\$167,000	\$167,000	\$167,000	\$167,000	\$167,000
Meter Installations	\$148,000	\$148,000	\$148,000	\$148,000	\$148,000
Turn-on Charges	\$41,000	\$41,000	\$41,000	\$41,000	\$41,000
Special Notice Fee	\$41,000	\$41,000	\$41,000	\$41,000	\$41,000
Hydrant Rental	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
Miscellaneous Income	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
Rents and Concessions	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000
Interest Income	\$123,000	\$123,000	\$123,000	\$123,000	\$123,000
Financing Proceeds	\$1,577,000	\$1,214,000	\$852,000	\$489,000	\$126,000
Water Fund Reserve Transfer In	\$305,000	\$762,000	\$1,118,000	\$1,474,000	\$2,030,000
Total Revenues	\$13,792,000	\$12,586,000	\$11,714,000	\$10,841,000	\$9,734,000
Expenses/Expenditures^[2]					
Water Supply	\$5,292,000	\$4,592,000	\$4,125,000	\$3,659,000	\$2,958,000
Water Distribution	\$1,057,000	\$1,057,000	\$1,057,000	\$1,057,000	\$1,057,000
Water Customer Service	\$622,000	\$622,000	\$622,000	\$622,000	\$622,000
Water Operations Support	\$845,000	\$845,000	\$845,000	\$845,000	\$845,000
Water Program Support	\$2,649,000	\$2,649,000	\$2,649,000	\$2,649,000	\$2,649,000
Water Supply Purchases	\$580,000	\$480,000	\$480,000	\$480,000	\$480,000
Routine Capital Outlay	\$188,000	\$145,000	\$102,000	\$58,000	\$15,000
Capital Improvements	\$1,577,000	\$1,214,000	\$852,000	\$489,000	\$126,000
Transfer Out	\$982,000	\$982,000	\$982,000	\$982,000	\$982,000
Total Expenses/Expenditures	\$13,792,000	\$12,586,000	\$11,714,000	\$10,841,000	\$9,734,000
Balance	\$0	\$0	\$0	\$0	\$0

Notes:

[1] Estimated revenues from 2011 WSMP Finance Plan

[2] Expenses taken from FY 11/12 water budget

As provided in Table 5-6 above, a percent reduction in Water Sales does not reduce Water Supply and Water Supply Purchase expenses to the same extent due to the nature of the costs necessary to maintain the City's water facilities. Therefore, to offset the balance of the reduction in Water Sales under this hypothetical scenario, the City would need to reduce Routine Capital Outlay and Capital Improvement expenses in combination with transferring in additional funds via the Water Fund Reserve (Water

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Fund Reserve Transfer In). The reduction in expenses and increase in reserve transfers would increase to a greater extent through each stage of the water supply shortage scenario as shown in Table 5-6 above. Since the City just recently increased its water rates for the first time in 16 years, the Water Fund Reserve is to be established gradually as the rate increase is phased in over the next five years.

5.2.6 DRAFT WATER SHORTAGE CONTINGENCY RESOLUTION OR ORDINANCE

Section 10632

(h) A draft water shortage contingency resolution or ordinance.

As previously mentioned, the City adopted Ordinance No. 925 in 1991. As a result, Sections 7350 through 7356 were added to the City of Downey Municipal Code, establishing water conservation regulations and restrictions to be followed by customers within the City's service area. These conservation measures limit the amount of potable water that may be delivered to customers, in order to protect the health, welfare, and safety of the community. A copy of Ordinance No. 925, and the corresponding water conservation regulations and restrictions are provided in Appendix G.

This ordinance was adopted in response to the drought of 1987 through 1992 and the resulting reduction of MWD's firm deliveries of imported water which the City used to rely on to meet a small percentage of its annual water demands. During this same period of time, MWD developed a conservation credit and overuse penalty program as part of their IICP, to encourage conservation of MWD's imported water supply. CBMWD passed these credits and penalties through to those agencies purchasing water from them to encourage water conservation. Subsequent droughts led to the development of additional MWD water shortage allocation plans which replaced the IICP. MWD's Water Supply Allocation Plan includes many of the key features and principles (i.e. conservation credits and overuse penalties) of the previous plans and is now the primary decision tool for imported water shortage allocation.

During and following the drought of 1987-1992, the City reduced its use of imported water to the point where the City now relies solely on groundwater to meet its annual water demands and currently maintains imported water connections for emergency purposes only.

5.3 WATER QUALITY

Section 10634

The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

5.3.1 WATER SYSTEM MASTER PLAN

The City depends on groundwater, pumped from aquifers beneath the City, for 100 percent of its potable water demand. Due to the exclusive use of this high quality groundwater versus more expensive imported water, the City currently enjoys one of the least expensive water rates in the area. However, such groundwater supplies are susceptible to changing conditions within the Central Basin including groundwater contamination and water quality regulations. To keep pace with the demands of new growth and to ensure an adequate supply of safe drinking in the future, the City developed a Water System Master Plan (Master Plan) in 2011.

The plan is a comprehensive study that included the following key elements:

- Water Supply Analysis
- Water Quality Evaluation
- Potable Water System Modeling, Evaluation, and Capacity Assurance Plan
- Recycled Water System Modeling, Evaluation, and Capacity Assurance Plan

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- Evaluation of Groundwater Wells
- Water Treatment Evaluation
- Supervisory Control and Data Acquisition (SCADA) and Control Systems Evaluation
- Standard Drawings
- Capital Improvement Program
- Rate Study and Finance Plan
- Disinfection Assessment
- Basis of Design Reports for the Downey Regional Water Reclamation and Groundwater Augmentation Project

Some of the recommendations for implementation of the Master Plan over the next 15 years included: increasing the frequency of refurbishment for existing groundwater wells and associated infrastructure; constructing new groundwater wells; abandoning inactive wells; purchasing water rights to meet future water demand needs and/or implementation of water conservation projects; rehabilitating and replacing aging water meters, fire hydrants, water mains, and associated facilities; expanding the recycled water distribution system; valve exercising and repair/replacement; upgrading/replacing the SCADA system; and constructing security upgrades.

5.3.2 GROUNDWATER

For years the City has benefited from the availability of high quality groundwater to the extent that groundwater is currently pumped directly into the City's transmission and distribution system without treatment of any kind. Though water quality conditions are not expected to change abruptly, it is possible that some form of groundwater treatment may be necessary at some time in the future based on upgradient water quality and potential changes to water quality regulations.

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As part of the Master Plan, groundwater quality data was evaluated for physical contaminants, inorganic compounds, volatile organic compounds (VOCs) and synthetic organic compounds (SOCs), radionuclides, microbial contaminants, and other constituents. For each water quality parameter, minimum, maximum, and average values were generated and compared with regulatory standards. It was determined that water quality within the City's existing system meets all current and anticipated federal and state MCLs.

Groundwater is produced from a series of aquifers primarily recharged in the Montebello Forebay, upgradient of the City. An analysis was performed of the reported groundwater quality in areas upgradient of the City. In general, the quality of groundwater upgradient of the City is good, though recent water recharged into the aquifers beneath the Montebello Forebay contains more dissolved minerals than the older native groundwater. Increases in mineral content (i.e. TDS) are expected in the City wells over time as groundwater moves downgradient from the recharge areas. Localized areas where groundwater has been impacted by contaminants from overlying sites exist within and upgradient of the City, although the threat from these sites does not appear imminent.

Such upgradient sites could increase potential contaminant levels in the future. However, the City's 20 groundwater wells are spaced throughout the City reducing the likely-hood of a large number of wells being affected at one time by any type of contamination that may be up-gradient. In situations where the City's groundwater supply proves susceptible to contamination, the City's Master Plan acts as a planning tool for analyzing options including but not limited to: well head treatment, construction of new wells, drawing water from other aquifers to which the well has access, and purchasing CBMWD water.

Analyses were conducted for known and potential future contaminants as part of the Master Plan should groundwater treatment ever need to be implemented. The

analyses included: assessing Best Available Technologies (BATs); identifying design criteria for each technology; estimating order of magnitude costs; and reviewing relevant permitting requirements for approval.

The Master Plan also included the development of a Disinfection Assessment. The assessment evaluated disinfection alternatives for the City's groundwater wells including review of non-economic benefits and challenges of each application method as well as assessing the capital and O&M costs of each alternative; and recommending a method for implementation of disinfection facilities at all of the City's active wells should such ever be necessary.

Though treatment of some or all of the City's groundwater supplies may be required in the future, the City intends to continue utilizing its groundwater rights to help meet the needs of its customers in conjunction with potential opportunities for future water transfer and storage projects. By identifying and planning for future water treatment needs such as well head treatment and/or disinfection, the City will ensure the continued production of high quality groundwater for the next 20 years.

5.3.3 IMPORTED WATER

As indicated in Section 2.1.2.3, supplemental water can be purchased from CBMWD and delivered to the City through the MWD lower feeder for emergencies in the event that system demand exceeds the production capacity of the City's groundwater wells. MWD's water quality meets all state and federal water quality standards. Water quality plays a vital role in MWD's availability of a useful water supply. Water quality can affect the reliability of groundwater storage and recycled water, and can impact the CALFED Bay-Delta if not properly managed. To the extent possible, MWD responds to water quality concerns by concentrating on the protection of source water quality and the development of water management programs that maintain and enhance water quality. As discussed in MWD's 2010 Regional Plan, MWD

anticipates no significant reductions in water supply availability from these sources due to water quality concerns. MWD's efforts and water quality data are explained in its 2010 Regional Plan, which is incorporated by reference.

5.4 DROUGHT PLANNING

5.4.1 RELIABILITY OF SUPPLY AND VULNERABILITY TO SEASONAL OR CLIMATIC SHORTAGE

Section 10631(c)(1)

Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

- (A) An average water year.*
- (B) A single dry water year.*
- (C) Multiple dry water years.*

The reliability of the groundwater supply in the Central Basin is largely dependent upon precipitation and recharge activity within the basin as well as past data on the ability of water supplies to meet demands during seasonal or climatic shortages. Table 2-4 summarizes the rainfall at the City of Downey Fire Department from water year 1925-26 through water year 2009-10. The historical annual average rainfall is 14.28 inches. Therefore, FY 2009-10 represents an average water year for the City in which the total amount of rainfall was 13.02 inches. A single dry year for the City is represented by FY 1999-00 in which the total amount of rainfall was 9.21 inches. A multiple dry year sequence for the City is represented from FY 1999-00 to FY 2001-02, where the rainfall totals were 9.21 inches, 15.6 inches, and 2.8 inches, respectively. Table 5-7 summarizes the basis of the water year data described above.

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Table 5-7 Basis of Water Year Data
(DWR Guidebook Table 27)

Table 27 Basis of water year data	
Water Year Type	Base Year(s)
Average Water Year	2009-10
Single-Dry Water Year	1999-00
Multiple-Dry Water Years	1999-00 to 2001-02

Table 5-8 compares total water supplies (groundwater and recycled water) during average year, single dry year, and multiple dry year scenarios and the corresponding percentage of average year supply that the single dry year and multiple dry year supplies represent. As provided in this table, dry year or multiple dry year scenarios do not compromise the City’s ability to provide a reliable supply of water to its customers as the percentage of average year supply always remains at or greater than 100 percent during each of the dry and multiple dry year scenarios.

Table 5-8 Supply Reliability – Historical Conditions
(DWR Guidebook Table 28)

Table 28 Supply reliability — historic conditions					
Average / Normal Water Year	Single Dry Water Year	Multiple Dry Water Years			
		Year 1	Year 2	Year 3	Year 4
16,951 AF	18,070 AF	18,070 AF	18,307 AF	18,375 AF	
Percent of Average/Normal Year:	106.6%	106.6%	108.0%	108.4%	--

As indicated in Section 2.1.2.3, supplemental water can also be purchased from CBMWD and delivered to the City through the MWD lower feeder for emergencies in the event that system demand exceeds the production capacity of the City’s groundwater wells. The reliability of purchased water supplies is included in CBMWD’s Plan. The City did not have to rely on any supplemental water purchased from CBMWD during the normal year (FY 2009-10), single-dry year (FY 1999-00), and multiple dry year (FY 1999-00 through FY 2001-02) time frames in order to meet water demands.

The City’s recycled water supply from CBMWD is limited only by system constraints, requiring onsite booster pumps for larger applications, and not by

availability, as recycled water is not subject to hydrologic variations. Therefore, the amount of recycled water available for re-use is greater than the amount currently being used. Additional information regarding the reliability of CBMWD's recycled water supply can be found in CBMWD's Plan.

Based on current groundwater management practices in the Central Basin and the reliability of supplemental water purchased from CBMWD for emergency use, the minimum water supplies available at the end of an average water year, single dry year, and multiple dry years would be at least equal if not greater than the City's water demands.

5.4.2 STAGES OF ACTION IN RESPONSE TO WATER SUPPLY SHORTAGES

Section 10632

(a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.

As a water purveyor, the City must be able to provide for the minimum health and safety water requirements of the community at all times. Following the adoption of Ordinance No. 925, the City developed a four-stage water-rationing plan (see Table 5-9) to be implemented during declared water shortages. The four-stage water-rationing plan includes both voluntary and mandatory rationing which are to be implemented depending on the causes, severity, and anticipated duration of the water supply shortage.

The plan is designed to allow for a minimum of 50 percent of the City's normal supply to be available during a severe or extended water shortage. Rationing program triggering levels were established to ensure that this goal is met. Rationing stages are

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triggered by a supply shortage due to drought conditions, contamination of one or a combination of sources, or some other type of emergency.

Entities most likely to play a role in the determination of a water supply shortage would be DWR, MWD, CBMWD, WRD, and/or the City. A water shortage must be declared and a resolution signed by the City Council, prior to the implementation of the provisions set forth in the water-rationing plan. Movement from Stage I to subsequent stages is accomplished through the adoption of separate resolutions. Because water shortages overlap stages, the triggering mechanisms will impose the more restrictive stage. Specific criteria for triggering the City's rationing stages are shown in Table 5-9.

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Table 5-9 Water Shortage Contingency – Rationing Stages to Address Water Supply Shortages
(DWR Guidebook Table 35)

Table 35		
Water shortage contingency — rationing stages to address water supply shortages		
Stage No.	Water Supply Conditions	% Shortage
I	<u>Current Supply:</u> Total supply is 85 – 95% of “normal” <u>AND</u> below “normal” year is declared OR <u>Future Supply:</u> Projected supply insufficient to provide 80% of “normal” deliveries for next two years OR <u>Groundwater:</u> First year over extraction of groundwater pumping taken, must be “replaced” within four years OR <u>Water Quality:</u> Contamination of 20% of water supply (exceeds primary drinking water standards)	Up to 15% Reduction (Voluntary)
II	<u>Current Supply:</u> Total supply is 75 – 85% of “normal” <u>AND</u> below “normal” year is declared OR <u>Future Supply:</u> Projected supply insufficient to provide 65% of “normal” deliveries for next two years OR <u>Groundwater:</u> Second year over extraction of groundwater pumping taken, must be “replaced” within four years OR <u>Water Quality:</u> Contamination of 30% of water supply (exceeds primary drinking water standards)	16 – 25% Reduction (Mandatory)
III	<u>Current Supply:</u> Total supply is 65 – 75% of “normal” <u>OR</u> second consecutive below “normal” year is declared OR <u>Future Supply:</u> Projected supply insufficient to provide 50% of “normal” deliveries for next two years OR <u>Groundwater:</u> No over extraction of groundwater pumping available <u>OR</u> reduced groundwater pumping due to replenishment of previously pumped over extraction of groundwater OR <u>Water Quality:</u> Contamination of 40% of water supply (exceeds primary drinking water standards)	26 – 35% Reduction (Mandatory)
IV	<u>Current Supply:</u> Total supply is < 65% of “normal” <u>OR</u> third consecutive below “normal” year is declared OR <u>Disaster Loss:</u> Disaster Loss	36 – 50% Reduction (Mandatory)

¹ One of the stages of action must be designed to address a 50 percent reduction in water supply.

In Stage I shortages, customers may adjust either interior or outdoor water use (or both) in order to meet the voluntary water reduction goal.

Under Stage II and Stage III mandatory rationing, the City has established a health and safety allotment of 68 GPCD, which translates to 33 hundred cubic feet (HCF) per capita-year (see Section 5.4.2.1 below). This allotment is based on typical estimates for a sufficient amount of essential interior water, under the assumption that no water use habits or plumbing fixture changes have occurred. Should customers wish

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to change water use habits or plumbing fixtures, 68 GPCD is sufficient to provide for limited non-essential (i.e. outdoor) uses.

Under Stage IV mandatory rationing, which is likely to be declared only as the result of a prolonged water shortage or disaster, the health and safety allotment is reduced to 50 GPCD (24 HCF per capita-year). Such conditions would require customers to make changes to their interior water use habits (for instance, not flushing toilets unless "necessary" or taking less frequent showers) (See Section 5.4.2.1 below).

5.4.2.1 HEALTH AND SAFETY REQUIREMENTS

Table 5-10 shows per capita health and safety water requirements based on commonly accepted estimates of interior residential water use in the United States.

Table 5-10 Per Capita Health and Safety Water Quantity Calculations

	Non-Conserving Fixtures		Habit Changes ^[1]		Conserving Fixtures ^[2]	
Toilets	5 Flushes x 5.5 gpf ^[3]	27.5	3 Flushes x 5.5 gpf	16.5	5 Flushes x 1.28 gpf	6.4
Shower	5 minutes x 4.0 gpm ^[4]	20.0	4 minutes x 3.0 gpm	12.0	5 minutes x 2.0 gpm	10.0
Washer	12.5 gpcd ^[5]	12.5	11.5 gpcd	11.5	11.5 gpcd	11.5
Kitchen	4 gpcd	4.0	4 gpcd	4.0	4 gpcd	4.0
Other	4 gpcd	4.0	4 gpcd	4.0	4 gpcd	4.0
Total (gpcd)		68.0		48.0		35.9
HCF Per Capita Per Year ^[6]		33.0		23.0		17.5

Notes:

[1] Reduced shower use results from shorter showers or reduced flow. Reduced washer use results from fuller loads.

[2] Fixtures include Ultra-Low-Flush toilets, 2.0 gpm showerheads and efficient clothes washers.

[3] gpf = Gallons per flush

[4] gpm = Gallons per minute

[5] gpcd = Gallons per capita per day

[6] HCF = Hundred cubic feet

5.4.2.2 PRIORITY BY USE

Priority for use of available potable water during shortages is established for all customers according to the following ranking system:

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- Minimum health and safety allotments for interior residential needs (includes single family, multi-family, hospitals and convalescent facilities, retirement and mobile home communities, fire fighting and public safety)
- Commercial, industrial, institutional/governmental operations (where water is used for manufacturing and for minimum health and safety allotments for employees and visitors), to maintain jobs and economic base of the community (not for landscape uses)
- Existing landscaping

5.4.2.3 WATER ALLOTMENT METHODS

Table 5-11 shows the City’s allotment method for each customer type. Percent reductions in potable water usage at each stage are provided in Table 5-9. Individual customer allotments are based on a 5-year period to allow the City a more accurate view of typical water needs. This ultimately allows for greater flexibility when determining allotments and reviewing appeals. However, no allotment may be greater than the amount used in the most recent year of the 5-year-base period. Calculation of a customer’s corresponding allotment is performed according to the Water Rationing Allotment Method. Sample calculations are provided in Appendix H.

Table 5-11 Methods of Allotment

Customer Classification	Method
Single Family Residential	Hybrid of Per-capita and Percent Reduction
Multi-Family Residential	Hybrid of Per-capita and Percent Reduction
Commercial	Percent Reduction
Industrial	Percent Reduction
Public, Institutional, and Governmental	Percent Reduction
Irrigation	Percent Reduction

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Customers are to be notified of their classification and allotment by mail prior to the effective date of the Water Shortage Emergency. In the event of a disaster where prior notice may not be feasible, customers will be notified by other available means. Any customer may appeal their classification on the basis of use, or allotment on the basis of incorrect calculation. All appeals must be in writing.

5.4.3 THREE YEAR MINIMUM WATER SUPPLY

Section 10632

(b) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

As shown in Table 5-7, over the past 20 years, the City experienced the driest three-year historical sequence during FYs 1999-00, 2000-01 and 2001-02. The percentage of supply available as compared to the normal water year supply in FY 2009-10, was estimated for the multiple dry years as provided in Table 5-8. These percentages from Table 5-8 were then used to estimate the minimum water supplies available during each of the next three water years based on this driest three-year (FY 199-00 to FY 2001-02) historical sequence for the City's water supply (see Table 5-12). The results of this analysis (Table 5-12) show that the minimum water supplies available to the City during each of the next three years under the driest three-year historical scenario are greater than or equal to the City's normal water year supply.

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Table 5-12 Supply Reliability – Current Water Sources
(DWR Guidebook Table 31)

Table 31 Supply reliability — current water sources				
Water supply sources ¹	Average / Normal Water Year Supply ²	Multiple Dry Water Year Supply ²		
		Year 2011	Year 2012	Year 2013
Groundwater	16,209	17,328	17,565	17,633
Purchased Water	0	0	0	0
Recycled Water	742	742	742	742
Total	16,951	18,070	18,307	18,375
Percent of normal year:	100.0%	106.6%	108.0%	108.4%

Units are in acre-feet per year.
¹ From Table 16.
² See Table 27 for basis of water type years.

5.4.4 WATER USE REDUCTION MEASURING MECHANISM

Section 10632

- (i) *A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.*

Under normal water supply conditions, potable water production volumes are recorded on a monthly basis. Total production volumes are reported to the City’s Utilities Division Superintendent and incorporated into the water production report, which is submitted to WRD and DWR.

During Stage I or Stage II water shortages, weekly production volumes will be reported to the City’s Utilities Division Superintendent. The Superintendent will then compare actual weekly production to the targeted weekly production in order to verify that the City’s reduction goal is being met. Weekly reports will be prepared and forwarded to the City’s Utilities Division Principal Engineer/Utilities Manager and monthly reports provided to the Public Works Director. Should reduction fall short of the City’s goals, the Public Works Director will notify the City Council so that corrective action can be taken.

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During a Stage III or Stage IV water shortage, the procedure listed above will be followed, with the addition of a daily production report being provided to the City's Utilities Division Principal Engineer/Utilities Manager.

5.4.5 ASSESSMENT OF THE RELIABILITY OF WATER SERVICE

Section 10635

(a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry year water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

As previously discussed in Section 3.1, the City applied the water use reduction requirements of SBX7-7 to estimate the City's 2015 Interim Urban Water Use Target of 141.8 GPCD and the City's 2020 Urban Water Use Target of 138.5 GPCD. These Urban Water Use Targets were then used to estimate the City's projected normal year demands in FY 2014-15, FY 2019-20, FY 2024-25 and FY 2029-30, as shown in Table 3-7. The City will continue to use groundwater and recycled water as its future water supplies over the next 20 years, with supplemental imported water from CBMWD used for emergencies only in the event that system demand exceeds the production capacity of the City's groundwater wells. The following sections discuss the City's water service reliability assessment, which compares the City's supplies and demands over the next 20 years during normal, dry and multiple dry year scenarios.

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5.4.5.1 NORMAL WATER YEAR

As previously discussed, the City’s projected normal water year demands (Table 3-7) over the next 20 years were based on the City’s 2015 Interim Urban Water Use Target and 2020 Urban Water Use Target of 141.8 GPCD and 138.5 GPCD, respectively. The City’s projected supplies are shown in Table 4-1. A comparison of the City’s projected supplies and demands during a normal water year is included in Table 5-13, and shows that the City’s supplies can meet demands during a normal water year for the next 20 years.

As discussed in Section 4.2.3, the Central Basin Judgment allows the City to exceed its APA by up to 10 percent in any year. The Central Basin Judgment also allows the City to carryover up to 20 percent of its unused water rights from the previous year. The City typically leases water on an annual basis in order to maintain carryover for flexibility in case of drought or other emergency and to ensure the difference between water demand and APA is met. The flexibility afforded by the Central Basin Judgment and the City’s corresponding groundwater pumping practices enable the City to meet its normal water year demands into the future.

Table 5-13 Supply and Demand Comparison – Normal Year
(DWR Guidebook Table 32)

Table 32					
Supply and demand comparison — normal year					
	2015	2020	2025	2030	2035 - opt
Supply totals (from Table 16)	18,048	18,135	18,459	18,789	--
Demand totals (From Table 11)	18,048	18,135	18,459	18,789	--
Difference	0	0	0	0	--
Difference as % of Supply	0.0%	0.0%	0.0%	0.0%	--
Difference as % of Demand	0.0%	0.0%	0.0%	0.0%	--

Units are in acre-feet per year.

5.4.5.2 SINGLE-DRY YEAR

As summarized in Table 5-7, the City experienced a single-dry year during FY 1999-00 and a normal water year during FY 2009-10. The percentage of supply

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available as compared to the normal water year, was estimated for a single-dry year as provided in Table 5-8. This percentage was then applied to the projected supplies and demands during a normal water year from Table 5-13 in order to estimate the City’s projected supplies and demands during a single-dry year over the next 20 years in five-year increments. The results of the single-dry year supply and demand analysis are included in Table 5-14, and show that the City’s supplies can meet demands during a single-dry year for the next 20 years.

As previously discussed, the flexibility afforded by the Central Basin Judgment through its 20 percent carryover and 10 percent emergency exceedance provisions coupled with the City’s corresponding groundwater pumping and leasing practices enable the City to meet its water demands under this single dry year scenario over the next 20 years.

**Table 5-14 Supply and Demand Comparison – Single Dry Year
(DWR Guidebook Table 33)**

Table 33 Supply and demand comparison — single dry year					
	2015	2020	2025	2030	2035 - opt
Supply totals^{1,2}	19,237	19,330	19,675	20,027	--
Demand totals^{2,3,4}	19,237	19,330	19,675	20,027	--
Difference	0	0	0	0	--
Difference as % of Supply	0.0%	0.0%	0.0%	0.0%	--
Difference as % of Demand	0.0%	0.0%	0.0%	0.0%	--

Units are in acre-feet per year.

¹ Consider the same sources as in Table 16. If new sources of water are planned, add a column to the table and specify the source, timing, and amount of

² Provide in the text of the UWMP text that discusses how single-dry-year water supply volumes were determined.

³ Consider the same demands as in Table 3. If new water demands are anticipated, add a column to the table and specify the source, timing, and amount of water.

⁴ The urban water target determined in this UWMP will be considered when developing the 2020 water demands included in this table.

5.4.5.3 MULTIPLE DRY YEARS

The City experienced multiple dry years during FYs 1999-00, 2000-01 and 2001-02 as summarized in Table 5-7. The percentage of supply available as compared to the normal water year in FY 2009-10, was estimated for the multiple dry years as shown in Table 5-8. These corresponding percentages were subsequently applied to the projected supplies and demands during a normal water year from Table 5-13 to

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estimate the City’s projected supplies and demands during multiple dry years over the next 20 years in five-year increments. The first year of each multiple dry year sequence is set to correspond to FYs 2014-15, 2019-20, 2024-25, and 2029-30. The results of the multiple dry year supply and demand analysis are included in Table 5-15 and show that the City’s supplies can meet demands during multiple dry years for the next 20 years.

As previously discussed, the flexibility afforded by the Central Basin Judgment through its 20 percent carryover and 10 percent emergency exceedance provisions coupled with the City’s corresponding groundwater pumping and leasing practices enable the City to meet its water demands under this multiple dry year scenario over the next 20 years.

**Table 5-15 Supply and Demand Comparison – Multiple Dry Year Events
(DWR Guidebook Table 34)**

Table 34 Supply and demand comparison — multiple dry-year events						
		2015	2020	2025	2030	2035 - opt
Multiple-dry year first year supply	Supply totals^{1,2}	19,237	19,330	19,675	20,027	--
	Demand totals^{2,3,4}	19,237	19,330	19,675	20,027	--
	Difference	0	0	0	0	--
	Difference as % of Supply	0.0%	0.0%	0.0%	0.0%	--
	Difference as % of Demand	0.0%	0.0%	0.0%	0.0%	--
Multiple-dry year second year supply	Supply totals^{1,2}	19,489	19,584	19,934	20,290	--
	Demand totals^{2,3,4}	19,489	19,584	19,934	20,290	--
	Difference	0	0	0	0	--
	Difference as % of Supply	0.0%	0.0%	0.0%	0.0%	--
	Difference as % of Demand	0.0%	0.0%	0.0%	0.0%	--
Multiple-dry year third year supply	Supply totals^{1,2}	19,562	19,657	20,008	20,365	--
	Demand totals^{2,3,4}	19,562	19,657	20,008	20,365	--
	Difference	0	0	0	0	--
	Difference as % of Supply	0.0%	0.0%	0.0%	0.0%	--
	Difference as % of Demand	0.0%	0.0%	0.0%	0.0%	--

Units are in acre-feet per year.

¹ Consider the same sources as in Table 16. If new sources of water are planned, add a column to the table and specify the source, timing, and amount of water.

² Provide in the text of the UWMP text that discusses how single-dry-year water supply volumes were determined.

³ Consider the same demands as in Table 3. If new water demands are anticipated, add a column to the table and specify the source, timing, and amount of water.

⁴ The urban water target determined in this UWMP will be considered when developing the 2020 water demands included in this table.

SECTION 6

DEMAND MANAGEMENT MEASURES

Since the drought of the 1990s, the City has implemented water conservation programs to help limit water demand in its service area. Some of these conservation programs have included: expansion of the City's recycled water infrastructure and usage; public education on water use habits and drought tolerant landscaping via the Environmental Fair, Street Fair, and landscaping workshops; the LivingWise school and household conservation education program offered in partnership with SCE and the Southern California Gas Company; and coordination with CBWMD for the distribution of rebate incentives and plumbing retrofit hardware to the City's customers and for access to federal/state grant funds for conservation projects such as the retrofit of irrigation controllers at City parks. The results of these programs, in conjunction with the adoption and enforcement of plumbing and building codes, including the California Green Building Standards Code, have resulted in significant reductions in retail water use within the City's service area over the past 20 years.

6.1 BEST MANAGEMENT PRACTICES REPORTS

Section 10631(j)

For purposes of this part, urban water suppliers that are members of the California Urban Water Conservation Council shall be deemed in compliance with the requirements of subdivisions (f) and (g) by complying with all the provisions of the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum.

In October of 2005, the City became a member of the California Urban Water Conservation Council (CUWCC) and therefore, a signatory to the Memorandum of Understanding (MOU) regarding urban water conservation in California. The CUWCC was created to increase efficient water use statewide through partnerships among

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urban water agencies, public interest organizations, and private entities. The CUWCC's goal is to reduce California's long-term urban water demands by integrating urban water conservation practices into the planning and management of California's water resources.

6.2 DEMAND MANAGEMENT MEASURES BEING IMPLEMENTED

Section 10631

(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:

(A) Water survey programs for single-family residential and multifamily residential customers.

(B) Residential plumbing retrofit.

(C) System water audits, leak detection, and repair.

(D) Metering with commodity rates for all new connections and retrofit of existing connections.

(E) Large landscape conservation programs and incentives.

(F) High-efficiency washing machine rebate programs.

(G) Public information programs.

(H) School education programs.

(I) Conservation programs for commercial, industrial, and institutional accounts.

(J) Wholesale agency programs.

(K) Conservation pricing.

(L) Water conservation coordinator.

(M) Water waste prohibition.

(N) Residential ultra-low-flush toilet replacement programs.

(2) A schedule of implementation for all water demand management measures proposed or described in the plan.

(3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.

(4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.

Per Section 10631 (j) of the CWC, as a member of CUWCC, the City is deemed to be in compliance with the requirements of subdivision (f) of the CWC Section 10631 by complying with all the provisions of the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that

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memorandum. A copy of the 2009 and 2010 annual reports submitted by the City to CUWCC is provided in Appendix J.

6.3 DEMAND MANAGEMENT MEASURES NOT IMPLEMENTED

Section 10631

(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:

- (1) Take into account economic and non-economic factors, including environmental, social, health, customer impact, and technological factors.*
- (2) Include a cost-benefit analysis, identifying total benefits and total costs.*
- (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.*
- (4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.*

Per Section 10631 (j) of the CWC, as a member of CUWCC the City is deemed to be in compliance with the requirements of subdivision (g) of the CWC Section 10631 by complying with all the provisions of the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum. A copy of the 2009 and 2010 annual reports submitted by the City to CUWCC is provided in Appendix J.

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SECTION 7
COMPLETED URBAN WATER MANAGEMENT CHECKLIST

A completed Plan checklist, with page information indicating where the required element can be found within the Plan, is provided in Appendix K.

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CITY OF DOWNEY
2010 URBAN WATER MANAGEMENT PLAN
APPENDICES

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APPENDIX A

URBAN WATER MANAGEMENT PLANNING ACT

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CALIFORNIA WATER CODE DIVISION 6

PART 2.6. URBAN WATER MANAGEMENT PLANNING

All California Codes have been updated to include the 2010 Statutes.

CHAPTER 1.	GENERAL DECLARATION AND POLICY	10610-10610.4
CHAPTER 2.	DEFINITIONS	10611-10617
CHAPTER 3.	URBAN WATER MANAGEMENT PLANS	
Article 1.	General Provisions	10620-10621
Article 2.	Contents of Plans	10630-10634
Article 2.5.	Water Service Reliability	10635
Article 3.	Adoption and Implementation of Plans	10640-10645
CHAPTER 4.	MISCELLANEOUS PROVISIONS	10650-10656

WATER CODE

SECTION 10610-10610.4

10610. This part shall be known and may be cited as the "Urban Water Management Planning Act."

10610.2. (a) The Legislature finds and declares all of the following:

- (1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.
- (2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.
- (3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.
- (4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years.
- (5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.
- (6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.
- (7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.
- (8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.
- (9) The quality of source supplies can have a significant impact

on water management strategies and supply reliability.

(b) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.

10610.4. The Legislature finds and declares that it is the policy of the state as follows:

(a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.

(b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.

(c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

WATER CODE

SECTION 10611-10617

10611. Unless the context otherwise requires, the definitions of this chapter govern the construction of this part.

10611.5. "Demand management" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

10612. "Customer" means a purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.

10613. "Efficient use" means those management measures that result in the most effective use of water so as to prevent its waste or unreasonable use or unreasonable method of use.

10614. "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.

10615. "Plan" means an urban water management plan prepared pursuant to this part. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities. The components of the plan may vary according to an individual community or area's characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan.

10616. "Public agency" means any board, commission, county, city

and county, city, regional agency, district, or other public entity.

10616.5. "Recycled water" means the reclamation and reuse of wastewater for beneficial use.

10617. "Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

WATER CODE

SECTION 10620-10621

10620. (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

(b) Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.

(c) An urban water supplier indirectly providing water shall not include planning elements in its water management plan as provided in Article 2 (commencing with Section 10630) that would be applicable to urban water suppliers or public agencies directly providing water, or to their customers, without the consent of those suppliers or public agencies.

(d) (1) An urban water supplier may satisfy the requirements of this part by participation in areawide, regional, watershed, or basinwide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.

(2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.

(f) An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

10621. (a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero.

(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water

supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

(c) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

WATER CODE

SECTION 10630-10634

10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

10631. A plan shall be adopted in accordance with this chapter that shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a). If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:

(1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(c) (1) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

- (A) An average water year.
- (B) A single dry water year.
- (C) Multiple dry water years.

(2) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.

(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

(e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:

- (A) Single-family residential.
- (B) Multifamily.
- (C) Commercial.
- (D) Industrial.
- (E) Institutional and governmental.
- (F) Landscape.
- (G) Sales to other agencies.
- (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:

- (A) Water survey programs for single-family residential and multifamily residential customers.
- (B) Residential plumbing retrofit.
- (C) System water audits, leak detection, and repair.
- (D) Metering with commodity rates for all new connections and retrofit of existing connections.
- (E) Large landscape conservation programs and incentives.
- (F) High-efficiency washing machine rebate programs.
- (G) Public information programs.
- (H) School education programs.
- (I) Conservation programs for commercial, industrial, and institutional accounts.

- (J) Wholesale agency programs.
- (K) Conservation pricing.
- (L) Water conservation coordinator.
- (M) Water waste prohibition.
- (N) Residential ultra-low-flush toilet replacement programs.
- (2) A schedule of implementation for all water demand management measures proposed or described in the plan.
- (3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.
- (4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.
- (g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:
 - (1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.
 - (2) Include a cost-benefit analysis, identifying total benefits and total costs.
 - (3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.
 - (4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.
- (h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.
 - (i) Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.
 - (j) For purposes of this part, urban water suppliers that are members of the California Urban Water Conservation Council shall be deemed in compliance with the requirements of subdivisions (f) and (g) by complying with all the provisions of the "Memorandum of Understanding Regarding Urban Water Conservation in California,"

dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum.

(k) Urban water suppliers that rely upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (c). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (c).

10631.1. (a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

(b) It is the intent of the Legislature that the identification of projected water use for single-family and multifamily residential housing for lower income households will assist a supplier in complying with the requirement under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.

10631.5. (a) (1) Beginning January 1, 2009, the terms of, and eligibility for, a water management grant or loan made to an urban water supplier and awarded or administered by the department, state board, or California Bay-Delta Authority or its successor agency shall be conditioned on the implementation of the water demand management measures described in Section 10631, as determined by the department pursuant to subdivision (b).

(2) For the purposes of this section, water management grants and loans include funding for programs and projects for surface water or groundwater storage, recycling, desalination, water conservation, water supply reliability, and water supply augmentation. This section does not apply to water management projects funded by the federal American Recovery and Reinvestment Act of 2009 (Public Law 111-5).

(3) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if the urban water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the water demand management measures. The supplier may request grant or loan funds to implement the water demand management measures to the extent the request is consistent with the eligibility requirements applicable to the water management funds.

(4) (A) Notwithstanding paragraph (1), the department shall

determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if an urban water supplier submits to the department for approval documentation demonstrating that a water demand management measure is not locally cost effective. If the department determines that the documentation submitted by the urban water supplier fails to demonstrate that a water demand management measure is not locally cost effective, the department shall notify the urban water supplier and the agency administering the grant or loan program within 120 days that the documentation does not satisfy the requirements for an exemption, and include in that notification a detailed statement to support the determination.

(B) For purposes of this paragraph, "not locally cost effective" means that the present value of the local benefits of implementing a water demand management measure is less than the present value of the local costs of implementing that measure.

(b) (1) The department, in consultation with the state board and the California Bay-Delta Authority or its successor agency, and after soliciting public comment regarding eligibility requirements, shall develop eligibility requirements to implement the requirement of paragraph (1) of subdivision (a). In establishing these eligibility requirements, the department shall do both of the following:

(A) Consider the conservation measures described in the Memorandum of Understanding Regarding Urban Water Conservation in California, and alternative conservation approaches that provide equal or greater water savings.

(B) Recognize the different legal, technical, fiscal, and practical roles and responsibilities of wholesale water suppliers and retail water suppliers.

(2) (A) For the purposes of this section, the department shall determine whether an urban water supplier is implementing all of the water demand management measures described in Section 10631 based on either, or a combination, of the following:

(i) Compliance on an individual basis.

(ii) Compliance on a regional basis. Regional compliance shall require participation in a regional conservation program consisting of two or more urban water suppliers that achieves the level of conservation or water efficiency savings equivalent to the amount of conservation or savings achieved if each of the participating urban water suppliers implemented the water demand management measures. The urban water supplier administering the regional program shall provide participating urban water suppliers and the department with data to demonstrate that the regional program is consistent with this clause. The department shall review the data to determine whether the urban water suppliers in the regional program are meeting the eligibility requirements.

(B) The department may require additional information for any determination pursuant to this section.

(3) The department shall not deny eligibility to an urban water supplier in compliance with the requirements of this section that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of

the agencies participating in the project or plan is not implementing all of the water demand management measures described in Section 10631.

(c) In establishing guidelines pursuant to the specific funding authorization for any water management grant or loan program subject to this section, the agency administering the grant or loan program shall include in the guidelines the eligibility requirements developed by the department pursuant to subdivision (b).

(d) Upon receipt of a water management grant or loan application by an agency administering a grant and loan program subject to this section, the agency shall request an eligibility determination from the department with respect to the requirements of this section. The department shall respond to the request within 60 days of the request.

(e) The urban water supplier may submit to the department copies of its annual reports and other relevant documents to assist the department in determining whether the urban water supplier is implementing or scheduling the implementation of water demand management activities. In addition, for urban water suppliers that are signatories to the Memorandum of Understanding Regarding Urban Water Conservation in California and submit biennial reports to the California Urban Water Conservation Council in accordance with the memorandum, the department may use these reports to assist in tracking the implementation of water demand management measures.

(f) This section shall remain in effect only until July 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before July 1, 2016, deletes or extends that date.

10631.7. The department, in consultation with the California Urban Water Conservation Council, shall convene an independent technical panel to provide information and recommendations to the department and the Legislature on new demand management measures, technologies, and approaches. The panel shall consist of no more than seven members, who shall be selected by the department to reflect a balanced representation of experts. The panel shall have at least one, but no more than two, representatives from each of the following: retail water suppliers, environmental organizations, the business community, wholesale water suppliers, and academia. The panel shall be convened by January 1, 2009, and shall report to the Legislature no later than January 1, 2010, and every five years thereafter. The department shall review the panel report and include in the final report to the Legislature the department's recommendations and comments regarding the panel process and the panel's recommendations.

10632. (a) The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier:

(1) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions that are applicable to each stage.

(2) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic

sequence for the agency's water supply.

(3) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.

(4) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.

(5) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

(6) Penalties or charges for excessive use, where applicable.

(7) An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

(8) A draft water shortage contingency resolution or ordinance.

(9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.

(b) Commencing with the urban water management plan update due December 31, 2015, for purposes of developing the water shortage contingency analysis pursuant to subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:

(a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

(b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

(c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.

(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

(e) The projected use of recycled water within the supplier's

service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

(f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

(g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

10634. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

WATER CODE

SECTION 10635

10635. (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

(b) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.

(c) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.

(d) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any potential future customers.

WATER CODE

SECTION 10640-10645

10640. Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630).

The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

10641. An urban water supplier required to prepare a plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.

10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing, the plan shall be adopted as prepared or as modified after the hearing.

10643. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

10644. (a) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

(b) The department shall prepare and submit to the Legislature, on or before December 31, in the years ending in six and one, a report summarizing the status of the plans adopted pursuant to this part. The report prepared by the department shall identify the exemplary elements of the individual plans. The department shall provide a copy of the report to each urban water supplier that has submitted its plan to the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans submitted pursuant to this part.

(c) (1) For the purpose of identifying the exemplary elements of the individual plans, the department shall identify in the report those water demand management measures adopted and implemented by specific urban water suppliers, and identified pursuant to Section

10631, that achieve water savings significantly above the levels established by the department to meet the requirements of Section 10631.5.

(2) The department shall distribute to the panel convened pursuant to Section 10631.7 the results achieved by the implementation of those water demand management measures described in paragraph (1).

(3) The department shall make available to the public the standard the department will use to identify exemplary water demand management measures.

10645. Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

WATER CODE

SECTION 10650-10656

10650. Any actions or proceedings to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:

(a) An action or proceeding alleging failure to adopt a plan shall be commenced within 18 months after that adoption is required by this part.

(b) Any action or proceeding alleging that a plan, or action taken pursuant to the plan, does not comply with this part shall be commenced within 90 days after filing of the plan or amendment thereto pursuant to Section 10644 or the taking of that action.

10651. In any action or proceeding to attack, review, set aside, void, or annul a plan, or an action taken pursuant to the plan by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.

10652. The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part or to the implementation of actions taken pursuant to Section 10632. Nothing in this part shall be interpreted as exempting from the California Environmental Quality Act any project that would significantly affect water supplies for fish and wildlife, or any project for implementation of the plan, other than projects implementing Section 10632, or any project for expanded or additional water supplies.

10653. The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the State Water Resources Control Board and the Public Utilities Commission, for the preparation of water management plans or conservation plans; provided, that if the State Water Resources Control Board or the Public Utilities Commission requires additional information concerning water conservation to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of this part shall be satisfied by any urban water demand management plan prepared to meet federal laws or regulations after the effective date of this part, and which substantially meets the requirements of this part, or by any existing urban water management plan which includes the contents of a plan required under this part.

10654. An urban water supplier may recover in its rates the costs incurred in preparing its plan and implementing the reasonable water conservation measures included in the plan. Any best water management practice that is included in the plan that is identified in the

"Memorandum of Understanding Regarding Urban Water Conservation in California" is deemed to be reasonable for the purposes of this section.

10655. If any provision of this part or the application thereof to any person or circumstances is held invalid, that invalidity shall not affect other provisions or applications of this part which can be given effect without the invalid provision or application thereof, and to this end the provisions of this part are severable.

10656. An urban water supplier that does not prepare, adopt, and submit its urban water management plan to the department in accordance with this part, is ineligible to receive funding pursuant to Division 24 (commencing with Section 78500) or Division 26 (commencing with Section 79000), or receive drought assistance from the state until the urban water management plan is submitted pursuant to this article.

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APPENDIX B

WATER CONSERVATION BILL OF 2009

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Section L: California Water Code, Division 6, Part 2.55: Water Conservation

The following sections of California Water Code Division 6, Part 2.55, are available online at <http://www.leginfo.ca.gov/calaw.html>.

Chapter 1. General Declarations and Policy	§10608-10608.8
Chapter 2. Definitions	§10608.12
Chapter 3. Urban Retail Water Suppliers	§10608.16-10608.44

Legislative Counsel's Digest

Senate Bill No. 7

Chapter 4

An act to amend and repeal Section 10631.5 of, to add Part 2.55 (commencing with Section 10608) to Division 6 of, and to repeal and add Part 2.8 (commencing with Section 10800) of Division 6 of, the Water Code, relating to water.

[Approved by Governor November 10, 2009. Filed with Secretary of State November 10, 2009.]

Legislative Counsel's Digest

SB 7, Steinberg. Water conservation.

(1) Existing law requires the Department of Water Resources to convene an independent technical panel to provide information to the department and the Legislature on new demand management measures, technologies, and approaches. "Demand management measures" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

This bill would require the state to achieve a 20% reduction in urban per capita water use in California by December 31, 2020. The state would be required to make incremental progress towards this goal by reducing per capita water use by at least 10% on or before December 31, 2015. The bill would require each urban retail water supplier to develop urban water use targets and an interim urban water use target, in accordance with specified requirements. The bill would require agricultural water suppliers to implement efficient water management practices. The bill would require the department, in consultation with other state agencies, to develop a single standardized water use reporting form. The bill, with certain exceptions, would provide that urban retail water suppliers, on and after July 1, 2016, and agricultural water suppliers, on and after July 1, 2013, are not eligible for state water grants or loans unless they comply with the water conservation requirements established by the bill. The bill would repeal, on July 1, 2016, an existing requirement that conditions

eligibility for certain water management grants or loans to an urban water supplier on the implementation of certain water demand management measures.

(2) Existing law, until January 1, 1993, and thereafter only as specified, requires certain agricultural water suppliers to prepare and adopt water management plans.

This bill would revise existing law relating to agricultural water management planning to require agricultural water suppliers to prepare and adopt agricultural water management plans with specified components on or before December 31, 2012, and update those plans on or before December 31, 2015, and on or before December 31 every 5 years thereafter. An agricultural water supplier that becomes an agricultural water supplier after December 31, 2012, would be required to prepare and adopt an agricultural water management plan within one year after becoming an agricultural water supplier. The agricultural water supplier would be required to notify each city or county within which the supplier provides water supplies with regard to the preparation or review of the plan. The bill would require the agricultural water supplier to submit copies of the plan to the department and other specified entities. The bill would provide that an agricultural water supplier is not eligible for state water grants or loans unless the supplier complies with the water management planning requirements established by the bill.

(3) The bill would take effect only if SB 1 and SB 6 of the 2009–10 7th Extraordinary Session of the Legislature are enacted and become effective.

The people of the State of California do enact as follows:

SECTION 1. Part 2.55 (commencing with Section 10608) is added to Division 6 of the Water Code, to read:

Part 2.55. Sustainable Water Use and Demand Reduction

Chapter 1. General Declarations and Policy

10608. The Legislature finds and declares all of the following:

- (a) Water is a public resource that the California Constitution protects against waste and unreasonable use.
- (b) Growing population, climate change, and the need to protect and grow California's economy while protecting and restoring our fish and wildlife habitats make it essential that the state manage its water resources as efficiently as possible.
- (c) Diverse regional water supply portfolios will increase water supply reliability and reduce dependence on the Delta.

- (d) Reduced water use through conservation provides significant energy and environmental benefits, and can help protect water quality, improve streamflows, and reduce greenhouse gas emissions.
- (e) The success of state and local water conservation programs to increase efficiency of water use is best determined on the basis of measurable outcomes related to water use or efficiency.
- (f) Improvements in technology and management practices offer the potential for increasing water efficiency in California over time, providing an essential water management tool to meet the need for water for urban, agricultural, and environmental uses.
- (g) The Governor has called for a 20 percent per capita reduction in urban water use statewide by 2020.
- (h) The factors used to formulate water use efficiency targets can vary significantly from location to location based on factors including weather, patterns of urban and suburban development, and past efforts to enhance water use efficiency.
- (i) Per capita water use is a valid measure of a water provider's efforts to reduce urban water use within its service area. However, per capita water use is less useful for measuring relative water use efficiency between different water providers. Differences in weather, historical patterns of urban and suburban development, and density of housing in a particular location need to be considered when assessing per capita water use as a measure of efficiency.

10608.4. It is the intent of the Legislature, by the enactment of this part, to do all of the following:

- (a) Require all water suppliers to increase the efficiency of use of this essential resource.
- (b) Establish a framework to meet the state targets for urban water conservation identified in this part and called for by the Governor.
- (c) Measure increased efficiency of urban water use on a per capita basis.
- (d) Establish a method or methods for urban retail water suppliers to determine targets for achieving increased water use efficiency by the year 2020, in accordance with the Governor's goal of a 20-percent reduction.
- (e) Establish consistent water use efficiency planning and implementation standards for urban water suppliers and agricultural water suppliers.

- (f) Promote urban water conservation standards that are consistent with the California Urban Water Conservation Council's adopted best management practices and the requirements for demand management in Section 10631.
- (g) Establish standards that recognize and provide credit to water suppliers that made substantial capital investments in urban water conservation since the drought of the early 1990s.
- (h) Recognize and account for the investment of urban retail water suppliers in providing recycled water for beneficial uses.
- (i) Require implementation of specified efficient water management practices for agricultural water suppliers.
- (j) Support the economic productivity of California's agricultural, commercial, and industrial sectors.
- (k) Advance regional water resources management.

10608.8.

- (a) (1) Water use efficiency measures adopted and implemented pursuant to this part or Part 2.8 (commencing with Section 10800) are water conservation measures subject to the protections provided under Section 1011.
 - (2) Because an urban agency is not required to meet its urban water use target until 2020 pursuant to subdivision (b) of Section 10608.24, an urban retail water supplier's failure to meet those targets shall not establish a violation of law for purposes of any state administrative or judicial proceeding prior to January 1, 2021. Nothing in this paragraph limits the use of data reported to the department or the board in litigation or an administrative proceeding. This paragraph shall become inoperative on January 1, 2021.
 - (3) To the extent feasible, the department and the board shall provide for the use of water conservation reports required under this part to meet the requirements of Section 1011 for water conservation reporting.
- (b) This part does not limit or otherwise affect the application of Chapter 3.5 (commencing with Section 11340), Chapter 4 (commencing with Section 11370), Chapter 4.5 (commencing with Section 11400), and Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government Code.
 - (c) This part does not require a reduction in the total water used in the agricultural or urban sectors, because other factors, including, but not limited to, changes in agricultural economics or population growth may have greater effects on water

use. This part does not limit the economic productivity of California's agricultural, commercial, or industrial sectors.

- (d) The requirements of this part do not apply to an agricultural water supplier that is a party to the Quantification Settlement Agreement, as defined in subdivision (a) of Section 1 of Chapter 617 of the Statutes of 2002, during the period within which the Quantification Settlement Agreement remains in effect. After the expiration of the Quantification Settlement Agreement, to the extent conservation water projects implemented as part of the Quantification Settlement Agreement remain in effect, the conserved water created as part of those projects shall be credited against the obligations of the agricultural water supplier pursuant to this part.

Chapter 2. Definitions

10608.12. Unless the context otherwise requires, the following definitions govern the construction of this part:

- (a) “Agricultural water supplier” means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. “Agricultural water supplier” includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. “Agricultural water supplier” does not include the department.
- (b) “Base daily per capita water use” means any of the following:
 - (1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.
 - (2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.
 - (3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

- (c) “Baseline commercial, industrial, and institutional water use” means an urban retail water supplier's base daily per capita water use for commercial, industrial, and institutional users.
- (d) “Commercial water user” means a water user that provides or distributes a product or service.
- (e) “Compliance daily per capita water use” means the gross water use during the final year of the reporting period, reported in gallons per capita per day.
- (f) “Disadvantaged community” means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.
- (g) “Gross water use” means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:
 - (1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.
 - (2) The net volume of water that the urban retail water supplier places into long-term storage.
 - (3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.
 - (4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.
- (h) “Industrial water user” means a water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development.
- (i) “Institutional water user” means a water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions.
- (j) “Interim urban water use target” means the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020.

- (k) “Locally cost effective” means that the present value of the local benefits of implementing an agricultural efficiency water management practice is greater than or equal to the present value of the local cost of implementing that measure.
- (l) “Process water” means water used for producing a product or product content or water used for research and development, including, but not limited to, continuous manufacturing processes, water used for testing and maintaining equipment used in producing a product or product content, and water used in combined heat and power facilities used in producing a product or product content. Process water does not mean incidental water uses not related to the production of a product or product content, including, but not limited to, water used for restrooms, landscaping, air conditioning, heating, kitchens, and laundry.
- (m) “Recycled water” means recycled water, as defined in subdivision (n) of Section 13050, that is used to offset potable demand, including recycled water supplied for direct use and indirect potable reuse, that meets the following requirements, where applicable:
 - (1) For groundwater recharge, including recharge through spreading basins, water supplies that are all of the following:
 - (A) Metered.
 - (B) Developed through planned investment by the urban water supplier or a wastewater treatment agency.
 - (C) Treated to a minimum tertiary level.
 - (D) Delivered within the service area of an urban retail water supplier or its urban wholesale water supplier that helps an urban retail water supplier meet its urban water use target.
 - (2) For reservoir augmentation, water supplies that meet the criteria of paragraph (1) and are conveyed through a distribution system constructed specifically for recycled water.
- (n) “Regional water resources management” means sources of supply resulting from watershed-based planning for sustainable local water reliability or any of the following alternative sources of water:
 - (1) The capture and reuse of stormwater or rainwater.
 - (2) The use of recycled water.
 - (3) The desalination of brackish groundwater.

- (4) The conjunctive use of surface water and groundwater in a manner that is consistent with the safe yield of the groundwater basin.
- (o) “Reporting period” means the years for which an urban retail water supplier reports compliance with the urban water use targets.
- (p) “Urban retail water supplier” means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.
- (q) “Urban water use target” means the urban retail water supplier’s targeted future daily per capita water use.
- (r) “Urban wholesale water supplier,” means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.

Chapter 3. Urban Retail Water Suppliers

10608.16.

- (a) The state shall achieve a 20-percent reduction in urban per capita water use in California on or before December 31, 2020.
- (b) The state shall make incremental progress towards the state target specified in subdivision (a) by reducing urban per capita water use by at least 10 percent on or before December 31, 2015.

10608.20.

- (a) (1) Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28, and may determine the targets on a fiscal year or calendar year basis.
- (2) It is the intent of the Legislature that the urban water use targets described in subdivision (a) cumulatively result in a 20-percent reduction from the baseline daily per capita water use by December 31, 2020.
- (b) An urban retail water supplier shall adopt one of the following methods for determining its urban water use target pursuant to subdivision (a):
 - (1) Eighty percent of the urban retail water supplier's baseline per capita daily water use.

- (2) The per capita daily water use that is estimated using the sum of the following performance standards:
 - (A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard. Upon completion of the department's 2016 report to the Legislature pursuant to Section 10608.42, this standard may be adjusted by the Legislature by statute.
 - (B) For landscape irrigated through dedicated or residential meters or connections, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 (commencing with Section 490) of Division 2 of Title 23 of the California Code of Regulations, as in effect the later of the year of the landscape's installation or 1992. An urban retail water supplier using the approach specified in this subparagraph shall use satellite imagery, site visits, or other best available technology to develop an accurate estimate of landscaped areas.
 - (C) For commercial, industrial, and institutional uses, a 10-percent reduction in water use from the baseline commercial, industrial, and institutional water use by 2020.
- (3) Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (dated April 30, 2009). If the service area of an urban water supplier includes more than one hydrologic region, the supplier shall apportion its service area to each region based on population or area.
- (4) A method that shall be identified and developed by the department, through a public process, and reported to the Legislature no later than December 31, 2010. The method developed by the department shall identify per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use by December 31, 2020. In developing urban daily per capita water use targets, the department shall do all of the following:
 - (A) Consider climatic differences within the state.
 - (B) Consider population density differences within the state.
 - (C) Provide flexibility to communities and regions in meeting the targets.
 - (D) Consider different levels of per capita water use according to plant water needs in different regions.
 - (E) Consider different levels of commercial, industrial, and institutional water use in different regions of the state.

- (F) Avoid placing an undue hardship on communities that have implemented conservation measures or taken actions to keep per capita water use low.
- (c) If the department adopts a regulation pursuant to paragraph (4) of subdivision (b) that results in a requirement that an urban retail water supplier achieve a reduction in daily per capita water use that is greater than 20 percent by December 31, 2020, an urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may limit its urban water use target to a reduction of not more than 20 percent by December 31, 2020, by adopting the method described in paragraph (1) of subdivision (b).
- (d) The department shall update the method described in paragraph (4) of subdivision (b) and report to the Legislature by December 31, 2014. An urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may adopt a new urban daily per capita water use target pursuant to this updated method.
- (e) An urban retail water supplier shall include in its urban water management plan required pursuant to Part 2.6 (commencing with Section 10610) due in 2010 the baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.
- (f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.
- (g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).
- (h) (1) The department, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part, including, but not limited to, both of the following:
- (A) Methodologies for calculating base daily per capita water use, baseline commercial, industrial, and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscaped area water use.
- (B) Criteria for adjustments pursuant to subdivisions (d) and (e) of Section 10608.24.
- (2) The department shall post the methodologies and criteria developed pursuant to this subdivision on its Internet Web site, and make written copies

available, by October 1, 2010. An urban retail water supplier shall use the methods developed by the department in compliance with this part.

- (i) (1) The department shall adopt regulations for implementation of the provisions relating to process water in accordance with subdivision (l) of Section 10608.12, subdivision (e) of Section 10608.24, and subdivision (d) of Section 10608.26.
- (2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.
- (j) An urban retail water supplier shall be granted an extension to July 1, 2011, for adoption of an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) due in 2010 to allow use of technical methodologies developed by the department pursuant to paragraph (4) of subdivision (b) and subdivision (h). An urban retail water supplier that adopts an urban water management plan due in 2010 that does not use the methodologies developed by the department pursuant to subdivision (h) shall amend the plan by July 1, 2011, to comply with this part.

10608.22. Notwithstanding the method adopted by an urban retail water supplier pursuant to Section 10608.20, an urban retail water supplier's per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph (3) of subdivision (b) of Section 10608.12. This section does not apply to an urban retail water supplier with a base daily per capita water use at or below 100 gallons per capita per day.

10608.24.

- (a) Each urban retail water supplier shall meet its interim urban water use target by December 31, 2015.
- (b) Each urban retail water supplier shall meet its urban water use target by December 31, 2020.
- (c) An urban retail water supplier's compliance daily per capita water use shall be the measure of progress toward achievement of its urban water use target.
- (d) (1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:

- (A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.
 - (B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.
 - (C) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.
- (2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.
- (e) When developing the urban water use target pursuant to Section 10608.20, an urban retail water supplier that has a substantial percentage of industrial water use in its service area, may exclude process water from the calculation of gross water use to avoid a disproportionate burden on another customer sector.
- (f) (1) An urban retail water supplier that includes agricultural water use in an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) may include the agricultural water use in determining gross water use. An urban retail water supplier that includes agricultural water use in determining gross water use and develops its urban water use target pursuant to paragraph (2) of subdivision (b) of Section 10608.20 shall use a water efficient standard for agricultural irrigation of 100 percent of reference evapotranspiration multiplied by the crop coefficient for irrigated acres.
- (2) An urban retail water supplier, that is also an agricultural water supplier, is not subject to the requirements of Chapter 4 (commencing with Section 10608.48), if the agricultural water use is incorporated into its urban water use target pursuant to paragraph (1).

10608.26.

- (a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:
- (1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.
 - (2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.

- (3) Adopt a method, pursuant to subdivision (b) of Section 10608.20, for determining its urban water use target.
- (b) In complying with this part, an urban retail water supplier may meet its urban water use target through efficiency improvements in any combination among its customer sectors. An urban retail water supplier shall avoid placing a disproportionate burden on any customer sector.
- (c) For an urban retail water supplier that supplies water to a United States Department of Defense military installation, the urban retail water supplier's implementation plan for complying with this part shall consider the United States Department of Defense military installation's requirements under federal Executive Order 13423.
- (d)
 - (1) Any ordinance or resolution adopted by an urban retail water supplier after the effective date of this section shall not require existing customers as of the effective date of this section, to undertake changes in product formulation, operations, or equipment that would reduce process water use, but may provide technical assistance and financial incentives to those customers to implement efficiency measures for process water. This section shall not limit an ordinance or resolution adopted pursuant to a declaration of drought emergency by an urban retail water supplier.
 - (2) This part shall not be construed or enforced so as to interfere with the requirements of Chapter 4 (commencing with Section 113980) to Chapter 13 (commencing with Section 114380), inclusive, of Part 7 of Division 104 of the Health and Safety Code, or any requirement or standard for the protection of public health, public safety, or worker safety established by federal, state, or local government or recommended by recognized standard setting organizations or trade associations.

10608.28.

- (a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement, by any of the following:
 - (1) Through an urban wholesale water supplier.
 - (2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).
 - (3) Through a regional water management group as defined in Section 10537.
 - (4) By an integrated regional water management funding area.

- (5) By hydrologic region.
 - (6) Through other appropriate geographic scales for which computation methods have been developed by the department.
- (b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.

10608.32. All costs incurred pursuant to this part by a water utility regulated by the Public Utilities Commission may be recoverable in rates subject to review and approval by the Public Utilities Commission, and may be recorded in a memorandum account and reviewed for reasonableness by the Public Utilities Commission.

10608.36. Urban wholesale water suppliers shall include in the urban water management plans required pursuant to Part 2.6 (commencing with Section 10610) an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part.

10608.40. Urban water retail suppliers shall report to the department on their progress in meeting their urban water use targets as part of their urban water management plans submitted pursuant to Section 10631. The data shall be reported using a standardized form developed pursuant to Section 10608.52.

10608.42. The department shall review the 2015 urban water management plans and report to the Legislature by December 31, 2016, on progress towards achieving a 20-percent reduction in urban water use by December 31, 2020. The report shall include recommendations on changes to water efficiency standards or urban water use targets in order to achieve the 20-percent reduction and to reflect updated efficiency information and technology changes.

10608.43. The department, in conjunction with the California Urban Water Conservation Council, by April 1, 2010, shall convene a representative task force consisting of academic experts, urban retail water suppliers, environmental organizations, commercial water users, industrial water users, and institutional water users to develop alternative best management practices for commercial, industrial, and institutional users and an assessment of the potential statewide water use efficiency improvement in the commercial, industrial, and institutional sectors that would result from implementation of these best management practices. The taskforce, in conjunction with the department, shall submit a report to the Legislature by April 1, 2012, that shall include a review of multiple sectors within commercial, industrial, and institutional users and that shall recommend water use efficiency standards for

commercial, industrial, and institutional users among various sectors of water use. The report shall include, but not be limited to, the following:

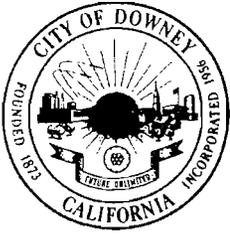
- (a) Appropriate metrics for evaluating commercial, industrial, and institutional water use.
- (b) Evaluation of water demands for manufacturing processes, goods, and cooling.
- (c) Evaluation of public infrastructure necessary for delivery of recycled water to the commercial, industrial, and institutional sectors.
- (d) Evaluation of institutional and economic barriers to increased recycled water use within the commercial, industrial, and institutional sectors.
- (e) Identification of technical feasibility and cost of the best management practices to achieve more efficient water use statewide in the commercial, industrial, and institutional sectors that is consistent with the public interest and reflects past investments in water use efficiency.

10608.44. Each state agency shall reduce water use on facilities it operates to support urban retail water suppliers in meeting the target identified in Section 10608.16.

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APPENDIX C
COORDINATION LETTERS

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City of Downey

FUTURE UNLIMITED

May 31, 2011

Bellflower Municipal Water System
Attn: Roberto Olvera
16913 Lakewood Boulevard
Bellflower, CA 90706

Subject: 2010 Urban Water Management Plan

Dear Mr. Olvera:

The City of Downey (City) wishes to inform you that it is in the process of reviewing and revising its Urban Water Management Plan (UWMP) as required by the UWMP Act and California Department of Water Resources (DWR) requirements. The City is informing you of this revision because of the City's emergency interconnect with Bellflower and because it is required, pursuant to Section 10620(d)(2) of the UWMP Act, to coordinate the preparation of its UWMP with appropriate agencies in the area to the extent practicable.

The City anticipates adopting the revised UWMP in August 2011 and submitting it to DWR within 30 days of adoption.

A public hearing on the draft revision of the UWMP will be held in advance of adoption and the City will send notice of this hearing to you as the time gets nearer.

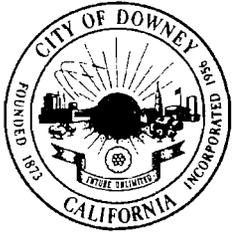
The City welcomes your participation in the revision of its UWMP.

Please contact me if you would like to participate in the City's urban water management planning process or if there is another individual within your jurisdiction who should be our primary point of contact.

Should you have any comments/concerns regarding the development of the City's 2010 UWMP, such comments can be submitted to my attention.

Sincerely,

Dan Mueller, P.E.
Project Manager
City of Downey Utilities Division
(562) 622-3578
dmueller@downeyca.org



City of Downey

FUTURE UNLIMITED

December 27, 2011

Bellflower Municipal Water System
Attn: Roberto Olvera
16913 Lakewood Boulevard
Bellflower, CA 90706

Subject: 2010 Urban Water Management Plan

Dear Mr. Olvera:

The City of Downey (City) wishes to inform you that a Public Hearing will be held to consider adoption of a proposed resolution adopting the City's 2010 Urban Water Management Plan (UWMP). The Public Hearing will be held by the City Council of the City of Downey on Tuesday, January 10, 2012, at 7:30 p.m., or soon thereafter as may be heard, in the Council Chamber of Downey City Hall located at 11111 Brookshire Avenue. At that time and place all persons interested in this matter may be present to give testimony to the City Council for or against adoption of the proposed resolution. The City is informing you of this Public Hearing because of the City's emergency interconnect with Bellflower and because it is required, pursuant to Sections 10620(d)(2) and 10642 of the UWMP Act, to coordinate the preparation of its UWMP with appropriate agencies in the area to the extent practicable.

A copy of the City's Final Draft 2010 UWMP is included on the enclosed compact disc for your information and review.

Assuming adoption at the Public Hearing, the 2010 UWMP will be submitted to DWR within 30 days of adoption.

The City welcomes your participation. Should you have any comments/concerns regarding the City's 2010 UWMP, such comments can be submitted to my attention.

Sincerely,

A handwritten signature in cursive script that reads "D Mueller".

Dan Mueller, P.E.
Project Manager
City of Downey Utilities Division
(562) 622-3578
dmueller@downeyca.org

Enc: Compact Disc including City of Downey Final Draft 2010 UWMP



City of Downey

FUTURE UNLIMITED

May 31, 2011

City of Bellflower
Public Works Department
Attn: Brian Smith
16600 Civic Center Drive
Bellflower, CA 90706

Subject: 2010 Urban Water Management Plan

Dear Mr. Smith:

The City of Downey (City) wishes to inform you that it is in the process of reviewing and revising its Urban Water Management Plan (UWMP) as required by the UWMP Act and California Department of Water Resources (DWR) requirements. The City is informing you of this revision because of the City's emergency interconnect with Bellflower and because it is required, pursuant to Section 10620(d)(2) of the UWMP Act, to coordinate the preparation of its UWMP with appropriate agencies in the area to the extent practicable.

The City anticipates adopting the revised UWMP in August 2011 and submitting it to DWR within 30 days of adoption.

A public hearing on the draft revision of the UWMP will be held in advance of adoption and the City will send notice of this hearing to you as the time gets nearer.

The City welcomes your participation in the revision of its UWMP.

Please contact me if you would like to participate in the City's urban water management planning process or if there is another individual within your jurisdiction who should be our primary point of contact.

Should you have any comments/concerns regarding the development of the City's 2010 UWMP, such comments can be submitted to my attention.

Sincerely,

A handwritten signature in cursive script that reads "Dan Mueller".

Dan Mueller, P.E.
Project Manager
City of Downey Utilities Division
(562) 622-3578
dmueller@downeyca.org



City of Downey

FUTURE UNLIMITED

December 27, 2011

City of Bellflower
Attn: Brian Smith
16600 Civic Center Drive
Bellflower, CA 90706

Subject: 2010 Urban Water Management Plan

Dear Mr. Smith:

The City of Downey (City) wishes to inform you that a Public Hearing will be held to consider adoption of a proposed resolution adopting the City's 2010 Urban Water Management Plan (UWMP). The Public Hearing will be held by the City Council of the City of Downey on Tuesday, January 10, 2012, at 7:30 p.m., or soon thereafter as may be heard, in the Council Chamber of Downey City Hall located at 11111 Brookshire Avenue. At that time and place all persons interested in this matter may be present to give testimony to the City Council for or against adoption of the proposed resolution. The City is informing you of this Public Hearing because of the City's emergency interconnect with Bellflower and because it is required, pursuant to Sections 10620(d)(2) and 10642 of the UWMP Act, to coordinate the preparation of its UWMP with appropriate agencies in the area to the extent practicable.

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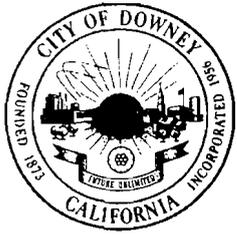
Assuming adoption at the Public Hearing, the 2010 UWMP will be submitted to DWR within 30 days of adoption.

The City welcomes your participation. Should you have any comments/concerns regarding the City's 2010 UWMP, such comments can be submitted to my attention.

Sincerely,

Dan Mueller, P.E.
Project Manager
City of Downey Utilities Division
(562) 622-3578
dmueller@downeyca.org

Enc: Compact Disc including City of Downey Final Draft 2010 UWMP



City of Downey

FUTURE UNLIMITED

May 31, 2011

Golden State Water Company
Attn: Kate Brophy
12035 Burke Street, Suite 1
Santa Fe Springs, CA 90607

Subject: 2010 Urban Water Management Plan

Dear Ms. Brophy:

The City of Downey (City) wishes to inform you that it is in the process of reviewing and revising its Urban Water Management Plan (UWMP) as required by the UWMP Act and California Department of Water Resources (DWR) requirements. The City is informing you of this revision because of the City's emergency interconnect with Golden State Water Company and because it is required, pursuant to Section 10620(d)(2) of the UWMP Act, to coordinate the preparation of its UWMP with appropriate agencies in the area to the extent practicable.

The City anticipates adopting the revised UWMP in August 2011 and submitting it to DWR within 30 days of adoption.

A public hearing on the draft revision of the UWMP will be held in advance of adoption and the City will send notice of this hearing to you as the time gets nearer.

The City welcomes your participation in the revision of its UWMP.

Please contact me if you would like to participate in the City's urban water management planning process or if there is another individual within your jurisdiction who should be our primary point of contact.

Should you have any comments/concerns regarding the development of the City's 2010 UWMP, such comments can be submitted to my attention.

Sincerely,

Dan Mueller, P.E.
Project Manager
City of Downey Utilities Division
(562) 622-3578
dmueller@downeyca.org



City of Downey

FUTURE UNLIMITED

December 27, 2011

Golden State Water Company
Attn: Kate Brophy
12035 Burke Street, Suite 1
Santa Fe Springs, CA 90670

Subject: 2010 Urban Water Management Plan

Dear Ms. Brophy:

The City of Downey (City) wishes to inform you that a Public Hearing will be held to consider adoption of a proposed resolution adopting the City's 2010 Urban Water Management Plan (UWMP). The Public Hearing will be held by the City Council of the City of Downey on Tuesday, January 10, 2012, at 7:30 p.m., or soon thereafter as may be heard, in the Council Chamber of Downey City Hall located at 11111 Brookshire Avenue. At that time and place all persons interested in this matter may be present to give testimony to the City Council for or against adoption of the proposed resolution. The City is informing you of this Public Hearing because of the City's emergency interconnect with Golden State Water Company and because it is required, pursuant to Sections 10620(d)(2) and 10642 of the UWMP Act, to coordinate the preparation of its UWMP with appropriate agencies in the area to the extent practicable.

A copy of the City's Final Draft 2010 UWMP is included on the enclosed compact disc for your information and review.

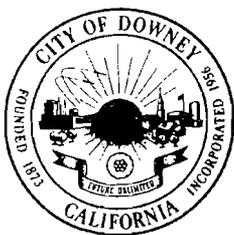
Assuming adoption at the Public Hearing, the 2010 UWMP will be submitted to DWR within 30 days of adoption.

The City welcomes your participation. Should you have any comments/concerns regarding the City's 2010 UWMP, such comments can be submitted to my attention.

Sincerely,

Dan Mueller, P.E.
Project Manager
City of Downey Utilities Division
(562) 622-3578
dmueller@downeyca.org

Enc: Compact Disc including City of Downey Final Draft 2010 UWMP



City of Downey

FUTURE UNLIMITED

May 31, 2011

City of South Gate
Attn: Mohammad Mostahkami, P.E.
8650 California Avenue
South Gate, CA 90280

Subject: 2010 Urban Water Management Plan

Dear Mr. Mostahkami:

The City of Downey (City) wishes to inform you that it is in the process of reviewing and revising its Urban Water Management Plan (UWMP) as required by the UWMP Act and California Department of Water Resources (DWR) requirements. The City is informing you of this revision because of the City's emergency interconnect with South Gate and because it is required, pursuant to Section 10620(d)(2) of the UWMP Act, to coordinate the preparation of its UWMP with appropriate agencies in the area to the extent practicable.

The City anticipates adopting the revised UWMP in August 2011 and submitting it to DWR within 30 days of adoption.

A public hearing on the draft revision of the UWMP will be held in advance of adoption and the City will send notice of this hearing to you as the time gets nearer.

The City welcomes your participation in the revision of its UWMP.

Please contact me if you would like to participate in the City's urban water management planning process or if there is another individual within your jurisdiction who should be our primary point of contact.

Should you have any comments/concerns regarding the development of the City's 2010 UWMP, such comments can be submitted to my attention.

Sincerely,

A handwritten signature in cursive script, appearing to read "Dan Mueller".

Dan Mueller, P.E.
Project Manager
City of Downey Utilities Division
(562) 622-3578
dmueller@downeyca.org



City of Downey

FUTURE UNLIMITED

December 27, 2011

City of South Gate
Attn: Mohammad Mostahkami, P.E.
8650 California Avenue
South Gate, CA 90280

Subject: 2010 Urban Water Management Plan

Dear Mr. Mostahkami:

The City of Downey (City) wishes to inform you that a Public Hearing will be held to consider adoption of a proposed resolution adopting the City's 2010 Urban Water Management Plan (UWMP). The Public Hearing will be held by the City Council of the City of Downey on Tuesday, January 10, 2012, at 7:30 p.m., or soon thereafter as may be heard, in the Council Chamber of Downey City Hall located at 11111 Brookshire Avenue. At that time and place all persons interested in this matter may be present to give testimony to the City Council for or against adoption of the proposed resolution. The City is informing you of this Public Hearing because of the City's emergency interconnect with South Gate and because it is required, pursuant to Sections 10620(d)(2) and 10642 of the UWMP Act, to coordinate the preparation of its UWMP with appropriate agencies in the area to the extent practicable.

A copy of the City's Final Draft 2010 UWMP is included on the enclosed compact disc for your information and review.

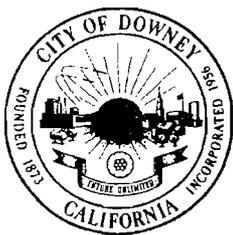
Assuming adoption at the Public Hearing, the 2010 UWMP will be submitted to DWR within 30 days of adoption.

The City welcomes your participation. Should you have any comments/concerns regarding the City's 2010 UWMP, such comments can be submitted to my attention.

Sincerely,

Dan Mueller, P.E.
Project Manager
City of Downey Utilities Division
(562) 622-3578
dmueller@downeyca.org

Enc: Compact Disc including City of Downey Final Draft 2010 UWMP



City of Downey

FUTURE UNLIMITED

May 31, 2011

City of Santa Fe Springs
Attn: Frank Beach
11710 Telegraph Road
Santa Fe Springs, CA 90670

Subject: 2010 Urban Water Management Plan

Dear Mr. Beach:

The City of Downey (City) wishes to inform you that it is in the process of reviewing and revising its Urban Water Management Plan (UWMP) as required by the UWMP Act and California Department of Water Resources (DWR) requirements. The City is informing you of this revision because of the City's emergency interconnect with Santa Fe Springs and because it is required, pursuant to Section 10620(d)(2) of the UWMP Act, to coordinate the preparation of its UWMP with appropriate agencies in the area to the extent practicable.

The City anticipates adopting the revised UWMP in August 2011 and submitting it to DWR within 30 days of adoption.

A public hearing on the draft revision of the UWMP will be held in advance of adoption and the City will send notice of this hearing to you as the time gets nearer.

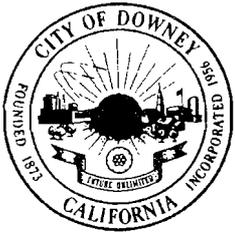
The City welcomes your participation in the revision of its UWMP.

Please contact me if you would like to participate in the City's urban water management planning process or if there is another individual within your jurisdiction who should be our primary point of contact.

Should you have any comments/concerns regarding the development of the City's 2010 UWMP, such comments can be submitted to my attention.

Sincerely,

Dan Mueller, P.E.
Project Manager
City of Downey Utilities Division
(562) 622-3578
dmueller@downeyca.org



City of Downey

FUTURE UNLIMITED

December 27, 2011

City of Santa Fe Springs
Attn: Frank Beach
11710 Telegraph Road
Santa Fe Springs, CA 90670

Subject: 2010 Urban Water Management Plan

Dear Mr. Beach:

The City of Downey (City) wishes to inform you that a Public Hearing will be held to consider adoption of a proposed resolution adopting the City's 2010 Urban Water Management Plan (UWMP). The Public Hearing will be held by the City Council of the City of Downey on Tuesday, January 10, 2012, at 7:30 p.m., or soon thereafter as may be heard, in the Council Chamber of Downey City Hall located at 11111 Brookshire Avenue. At that time and place all persons interested in this matter may be present to give testimony to the City Council for or against adoption of the proposed resolution. The City is informing you of this Public Hearing because of the City's emergency interconnect with Santa Fe Springs and because it is required, pursuant to Sections 10620(d)(2) and 10642 of the UWMP Act, to coordinate the preparation of its UWMP with appropriate agencies in the area to the extent practicable.

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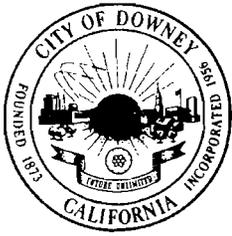
Assuming adoption at the Public Hearing, the 2010 UWMP will be submitted to DWR within 30 days of adoption.

The City welcomes your participation. Should you have any comments/concerns regarding the City's 2010 UWMP, such comments can be submitted to my attention.

Sincerely,

Dan Mueller, P.E.
Project Manager
City of Downey Utilities Division
(562) 622-3578
dmueller@downeyca.org

Enc: Compact Disc including City of Downey Final Draft 2010 UWMP



City of Downey

FUTURE UNLIMITED

May 31, 2011

City of Downey
Attn: Joyce Doyle, Interim City Clerk
11111 Brookshire Avenue
Downey, CA 90241

Subject: 2010 Urban Water Management Plan

Dear Ms. Doyle:

The City of Downey (City) wishes to inform you that it is in the process of reviewing and revising its Urban Water Management Plan (UWMP) as required by the UWMP Act and California Department of Water Resources (DWR) requirements. The City is informing you of this revision because it serves water within City of Downey boundaries and because it is required, pursuant to Section 10620(d)(2) of the UWMP Act, to coordinate the preparation of its UWMP with appropriate agencies in the area to the extent practicable.

The City anticipates adopting the revised UWMP in August 2011 and submitting it to DWR within 30 days of adoption.

A public hearing on the draft revision of the UWMP will be held in advance of adoption and the City will send notice of this hearing to you as the time gets nearer.

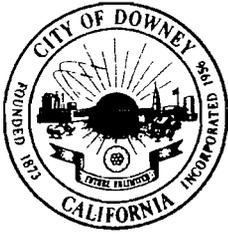
The City welcomes public participation in the revision of its UWMP.

Interested parties can contact me if they would like to participate in the City's urban water management planning process.

Should you or the public have any comments/concerns regarding the development of the City's 2010 UWMP, such comments can be submitted to my attention.

Sincerely,

Dan Mueller, P.E.
Project Manager
City of Downey Utilities Division
(562) 622-3578
dmueller@downeyca.org



City of Downey

FUTURE UNLIMITED

December 27, 2011

City of Downey
Attn: Joyce Doyle, Interim City Clerk
11111 Brookshire Avenue
Downey, CA 90241

Subject: 2010 Urban Water Management Plan

Dear Ms. Doyle:

The City of Downey (City) wishes to inform you that a Public Hearing will be held to consider adoption of a proposed resolution adopting the City's 2010 Urban Water Management Plan (UWMP). The Public Hearing will be held by the City Council of the City of Downey on Tuesday, January 10, 2012, at 7:30 p.m., or soon thereafter as may be heard, in the Council Chamber of Downey City Hall located at 11111 Brookshire Avenue. At that time and place all persons interested in this matter may be present to give testimony to the City Council for or against adoption of the proposed resolution. The City is informing you of this Public Hearing because it serves water within City of Downey Boundaries and because it is required, pursuant to Sections 10620(d)(2) and 10642 of the UWMP Act, to coordinate the preparation of its UWMP with appropriate agencies in the area to the extent practicable.

A copy of the City's Final Draft 2010 UWMP is included in both hard copy and electronically on the enclosed compact disc for public information and review.

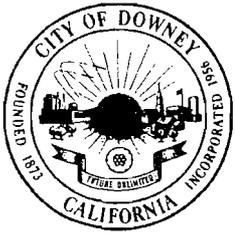
Assuming adoption at the Public Hearing, the 2010 UWMP will be submitted to DWR within 30 days of adoption.

The City welcomes public participation. Should you or the public have any comments/concerns regarding the City's 2010 UWMP, such comments can be submitted to my attention.

Sincerely,

Dan Mueller, P.E.
Project Manager
City of Downey Utilities Division
(562) 622-3578
dmueller@downeyca.org

Enc: Hard copy and Compact Disc including City of Downey Final Draft 2010 UWMP



City of Downey

FUTURE UNLIMITED

May 31, 2011

Central Basin Municipal Water District
Attn: David Hill
6252 Telegraph Road
Commerce, CA 90040

Subject: 2010 Urban Water Management Plan

Dear Mr. Hill:

The City of Downey (City) wishes to inform you that it is in the process of reviewing and revising its Urban Water Management Plan (UWMP) as required by the UWMP Act and California Department of Water Resources (DWR) requirements. The City is informing you of this revision because it is required, pursuant to Section 10620(d)(2) of the UWMP Act, to coordinate the preparation of its UWMP with appropriate agencies in the area to the extent practicable.

The City anticipates adopting the revised UWMP in August 2011 and submitting it to DWR within 30 days of adoption.

A public hearing on the draft revision of the UWMP will be held in advance of adoption and the City will send notice of this hearing to you as the time gets nearer.

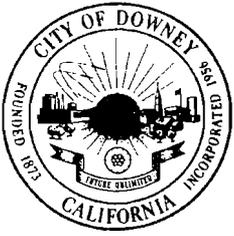
The City welcomes your participation in the revision of its UWMP.

Please contact me if you would like to participate in the City's urban water management planning process or if there is another individual within your jurisdiction who should be our primary point of contact.

Should you have any comments/concerns regarding the development of the City's 2010 UWMP, such comments can be submitted to my attention.

Sincerely,

Dan Mueller, P.E.
Project Manager
City of Downey Utilities Division
(562) 622-3578
dmueller@downeyca.org



City of Downey

FUTURE UNLIMITED

December 27, 2011

Central Basin Municipal Water District
Attn: David Hill
6252 Telegraph Road
Commerce, CA 90040

Subject: 2010 Urban Water Management Plan

Dear Mr. Hill:

The City of Downey (City) wishes to inform you that a Public Hearing will be held to consider adoption of a proposed resolution adopting the City's 2010 Urban Water Management Plan (UWMP). The Public Hearing will be held by the City Council of the City of Downey on Tuesday, January 10, 2012, at 7:30 p.m., or soon thereafter as may be heard, in the Council Chamber of Downey City Hall located at 11111 Brookshire Avenue. At that time and place all persons interested in this matter may be present to give testimony to the City Council for or against adoption of the proposed resolution. The City is informing you of this Public Hearing because it is required, pursuant to Sections 10620(d)(2) and 10642 of the UWMP Act, to coordinate the preparation of its UWMP with appropriate agencies in the area to the extent practicable.

A copy of the City's Final Draft 2010 UWMP is included on the enclosed compact disc for your information and review.

Assuming adoption at the Public Hearing, the 2010 UWMP will be submitted to DWR within 30 days of adoption.

The City welcomes your participation. Should you have any comments/concerns regarding the City's 2010 UWMP, such comments can be submitted to my attention.

Sincerely,

Handwritten signature of Dan Mueller in cursive.

Dan Mueller, P.E.
Project Manager
City of Downey Utilities Division
(562) 622-3578
dmueller@downeyca.org

Enc: Compact Disc including City of Downey Final Draft 2010 UWMP



City of Downey

FUTURE UNLIMITED

May 31, 2011

County of Los Angeles
Attn: Registrar – Recorder/County Clerk
12400 Imperial Highway
Norwalk, CA 90650

Subject: 2010 Urban Water Management Plan

Dear sir/madam:

The City of Downey (City) wishes to inform you that it is in the process of reviewing and revising its Urban Water Management Plan (UWMP) as required by the UWMP Act and California Department of Water Resources (DWR) requirements. The City is informing you of this revision because it serves water within your Los Angeles County boundaries and because it is required, pursuant to Section 10620(d)(2) of the UWMP Act, to coordinate the preparation of its UWMP with appropriate agencies in the area to the extent practicable.

The City anticipates adopting the revised UWMP in August 2011 and submitting it to DWR within 30 days of adoption.

A public hearing on the draft revision of the UWMP will be held in advance of adoption and the City will send notice of this hearing to you as the time gets nearer.

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Should you have any comments/concerns regarding the development of the City's 2010 UWMP, such comments can be submitted to my attention.

Sincerely,

Dan Mueller, P.E.
Project Manager
City of Downey Utilities Division
(562) 622-3578
dmueller@downeyca.org



City of Downey

FUTURE UNLIMITED

December 27, 2011

County Los Angeles
Attn: Registrar – Recorder/County Clerk
12400 Imperial Highway
Norwalk, CA 90650

Subject: 2010 Urban Water Management Plan

Dear sir/madam:

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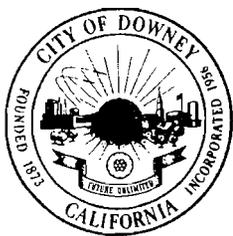
The City welcomes your participation. Should you have any comments/concerns regarding the City's 2010 UWMP, such comments can be submitted to my attention.

Sincerely,

A handwritten signature in cursive script that reads "D Mueller".

Dan Mueller, P.E.
Project Manager
City of Downey Utilities Division
(562) 622-3578
dmueller@downeyca.org

Enc: Compact Disc including City of Downey Final Draft 2010 UWMP



City of Downey

FUTURE UNLIMITED

May 31, 2011

County Sanitation Districts of Los Angeles County
Attn: Earle Hartling
P.O. Box 4998
Whittier, CA 90607

Subject: 2010 Urban Water Management Plan

Dear Mr. Hartling:

The City of Downey (City) wishes to inform you that it is in the process of reviewing and revising its Urban Water Management Plan (UWMP) as required by the UWMP Act and California Department of Water Resources (DWR) requirements. The City is informing you of this revision because it serves water within your Los Angeles County boundaries and because it is required, pursuant to Section 10620(d)(2) of the UWMP Act, to coordinate the preparation of its UWMP with appropriate agencies in the area to the extent practicable.

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A public hearing on the draft revision of the UWMP will be held in advance of adoption and the City will send notice of this hearing to you as the time gets nearer.

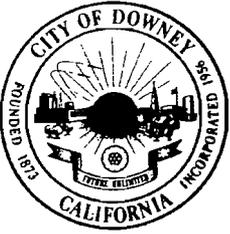
The City welcomes your participation in the revision of its UWMP.

Please contact me if you would like to participate in the City's urban water management planning process or if there is another individual within your jurisdiction who should be our primary point of contact.

Should you have any comments/concerns regarding the development of the City's 2010 UWMP, such comments can be submitted to my attention.

Sincerely,

Dan Mueller, P.E.
Project Manager
City of Downey Utilities Division
(562) 622-3578
dmueller@downeyca.org



City of Downey

FUTURE UNLIMITED

December 27, 2011

County Sanitation Districts of Los Angeles County
Attn: Earle Hartling
P.O. Box 4998
Whittier, CA 90607

Subject: 2010 Urban Water Management Plan

Dear Mr. Hartling:

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Sincerely,

Dan Mueller, P.E.
Project Manager
City of Downey Utilities Division
(562) 622-3578
dmueller@downeyca.org

Enc: Compact Disc including City of Downey Final Draft 2010 UWMP

APPENDIX D

NOTICE OF PUBLIC HEARING

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THIS AGENDA WAS POSTED PER GOVT.
CODE SEC. 54954.2(a) AND ORG. 802 ON

Dec. 27, 2011
AT 7:30 A.M./P.M.
NAME: Joyce E. Doyle
TITLE: Int. City Clerk
CITY OF DOWNEY

**CITY OF DOWNEY
NOTICE OF PUBLIC HEARING ON PROPOSED RESOLUTION ADOPTING THE CITY'S 2010
URBAN WATER MANAGEMENT PLAN**

Notice is hereby given that a Public Hearing will be held by the City Council of the City of Downey on Tuesday, January 10, 2012 at 7:30 p.m., or soon thereafter as may be heard, in the Council Chamber of Downey City Hall located at 11111 Brookshire Avenue. At the public hearing, consideration will be given to adopt a proposed resolution adopting the City's 2010 Urban Water Management Plan. At that time and place all persons interested in this matter may be present to give testimony to the City Council for or against adoption of the proposed resolution.

If you challenge the proposed actions in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City Clerk at, or prior to, the public hearing. Draft copies of the City's 2010 Urban Water Management Plan are available for review at the Public Works Department counter and City Clerk's office at Downey City Hall, 11111 Brookshire Avenue, Downey, California 90241, during normal business hours (M-F, 7:30 a.m. to 5:30 p.m.), the Downey City Library, 11121 Brookshire Avenue, during regular Library hours, and on the City's website. If you have questions, please call the Public Works Department Utilities Division at 562-904-7102.

Joyce E. Doyle, Interim City Clerk

Dated: December 22, 2011 and December 29, 2011

PROOF OF PUBLICATION
(2015.5 C.C.P.)

This space is for the County Clerk's Filing Stamp

STATE OF CALIFORNIA)
County of **Los Angeles**)

I am a citizen of the United States and a resident of the county aforesaid; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter. I am the principal clerk of the printer of THE DOWNEY PATRIOT, a newspaper of general circulation, published weekly in the City of Downey, County of Los Angeles and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Los Angeles, State of California, under the date of 3/11/10. Case Number BS124251; that the notice of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

12/22/11

I certify (or declare) under the penalty of perjury that the foregoing is true and correct.

Dated at Downey, California
this **22nd** day of **December, 2011**.



Signature

PUBLICATION PROCESSED BY:
THE DOWNEY PATRIOT
8301 E. FLORENCE AVENUE, SUITE 100
DOWNEY, CA 90240
(562) 904-3668

Proof of Publication

**CITY OF DOWNEY
NOTICE OF PUBLIC HEARING ON
PROPOSED RESOLUTION ADOPTING
THE CITY'S 2010 URBAN WATER
MANAGEMENT PLAN**

Notice is hereby given that a Public Hearing will be held by the City Council of the City of Downey on Tuesday, January 10, 2011, at 7:30 p.m., or soon thereafter as may be heard, in the Council Chamber of Downey City Hall located at 11111 Brookshire Avenue. At the public hearing, consideration will be given to adopt a proposed resolution adopting the City's 2010 Urban Water Management Plan. At that time and place all persons interested in this matter may be present to give testimony to the City Council for or against adoption of the proposed resolution.

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Joyce E. Doyle, Interim City Clerk
Dated: December 22, 2011 and December 29, 2011.

The Downey Patriot
12/22/11, 12/29/11

PROOF OF PUBLICATION
(2015.5 C.C.P.)

This space is for the County Clerk's Filing Stamp

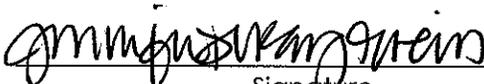
STATE OF CALIFORNIA)
County of **Los Angeles**)

I am a citizen of the United States and a resident of the county aforesaid; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter. I am the principal clerk of the printer of THE DOWNEY PATRIOT, a newspaper of general circulation, published weekly in the City of Downey, County of Los Angeles and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Los Angeles, State of California, under the date of 3/11/10. Case Number BS124251; that the notice of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

12/29/11

I certify (or declare) under the penalty of perjury that the foregoing is true and correct.

Dated at Downey, California
this **29th** day of **December, 2011**.



Signature

PUBLICATION PROCESSED BY:
THE DOWNEY PATRIOT
8301 E. FLORENCE AVENUE, SUITE 100
DOWNEY, CA 90240
(562) 904-3668

Proof of Publication

**CITY OF DOWNEY
NOTICE OF PUBLIC HEARING ON
PROPOSED RESOLUTION ADOPTING
THE CITY'S 2010 URBAN WATER
MANAGEMENT PLAN**

Notice is hereby given that a Public Hearing will be held by the City Council of the City of Downey on Tuesday, January 10, 2012 at 7:30 p.m., or soon thereafter as may be heard, in the Council Chamber of Downey City Hall located at 11111 Brookshire Avenue. At the public hearing, consideration will be given to adopt a proposed resolution adopting the City's 2010 Urban Water Management Plan. At that time and place all persons interested in this matter may be present to give testimony to the City Council for or against adoption of the proposed resolution.

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Joyce E. Doyle, Interim City Clerk
Dated: December 22, 2011, December 29, 2011 and January 5, 2012

The Downey Patriot
12/29/11, 1/5/12

**CITY OF DOWNEY
NOTICE OF PUBLIC HEARING ON
PROPOSED RESOLUTION ADOPTING
THE CITY'S 2010 URBAN WATER
MANAGEMENT PLAN**

The legal ad published December 22, 2011 incorrectly stated the Public Hearing date as January 10, 2011 when the actual Public Hearing date is January 10, 2012.

Joyce E. Doyle, Interim City Clerk
Dated: December 29, 2011

The Downey Patriot
12/29/11

PROOF OF PUBLICATION
(2015.5 C.C.P.)

This space is for the County Clerk's Filing Stamp

STATE OF CALIFORNIA)
County of **Los Angeles**)

I am a citizen of the United States and a resident of the county aforesaid; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter. I am the principal clerk of the printer of THE DOWNEY PATRIOT, a newspaper of general circulation, published weekly in the City of Downey, County of Los Angeles and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Los Angeles, State of California, under the date of 3/11/10. Case Number BS124251; that the notice of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

1/5/12

I certify (or declare) under the penalty of perjury that the foregoing is true and correct.

Dated at Downey, California
this **5th** day of **January, 2012**.



Signature

PUBLICATION PROCESSED BY:
THE DOWNEY PATRIOT
8301 E. FLORENCE AVENUE, SUITE 100
DOWNEY, CA 90240
(562) 904-3668

Proof of Publication

**CITY OF DOWNEY
NOTICE OF PUBLIC HEARING ON
PROPOSED RESOLUTION ADOPTING
THE CITY'S 2010 URBAN WATER
MANAGEMENT PLAN**

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If you challenge the proposed actions in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City Clerk at, or prior to, the public hearing. Draft copies of the City's 2010 Urban Water Management Plan are available for review at the Public Works Department counter and City Clerk's office at Downey City Hall, 11111 Brookshire Avenue, Downey, California 90241, during normal business hours (M-F 7:30 a.m. to 5:30 p.m.); the Downey City Library, 11121 Brookshire Avenue, during regular Library hours, and on the City's website. If you have questions, please call the Public Works Department Utilities Division at 562-904-7102. Joyce E. Doyle, Interim City Clerk
Dated: December 22, 2011, December 29, 2011 and January 5, 2012

The Downey Patriot
12/29/11, 1/5/12

APPENDIX E

**RESOLUTION NO. 12-7309
ADOPTING THE 2010 URBAN WATER MANAGEMENT PLAN**

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RESOLUTION NO. 12- 7309

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF DOWNEY ADOPTING THE CITY OF DOWNEY'S 2010 URBAN WATER MANGEMENT PLAN

WHEREAS, the Urban Water Management Planning Act (Act) of the California Water Code (Sections 10610 through 10656), requires all urban water suppliers, providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 acre-feet of water annually, to file an Urban Water Management Plan (UWMP or Plan) with the California Department of Water Resources (DWR); and

WHEREAS, the City is an urban supplier of water, providing water to a population of approximately 111,000 through 23,000 service connections; and

WHEREAS, the City provides an average of over 17,000 acre-feet of potable water to its customers on an annual basis; and

WHEREAS, the Act requires that the Plan be periodically reviewed at least once every five years, and that any necessary amendments or changes are made to the Plan; and

WHEREAS, the City's 2010 UWMP serves as an update to the Plan previously submitted to DWR in 2006; and

WHEREAS, the 2010 UWMP presents a description and evaluation of current and projected potable and recycled water supplies and demands, water conservation/reduction activities, water supply reliability, and planning for potential water shortages; and

WHEREAS, the Act requires that the Plan be made available for public inspection and that a public hearing be held prior to adoption of the Plan; and

WHEREAS, the City has, therefore, prepared and made available for review, draft copies of the 2010 UWMP at the City Clerk's office, Department of Public Works Engineering Division, Downey City Library, and on the City website; and

WHEREAS, a special notice proceeding was called by City Council on November 22, 2011 setting the time and place for a public hearing to consider adopting the City's 2010 UWMP; and

WHEREAS, the City has given notice of the date, time, and location of the public hearing on the proposed adoption of the 2010 UWMP by publishing such notice in the Downey Patriot, a local newspaper, on December 22 and 29, 2011 and on January 5, 2012, and by posting copies of the public notice at the Downey City Library, Barbara J. Riley Community and Senior Center, Downey City Hall, and on the City website; and

WHEREAS, a duly noticed public hearing on the proposed adoption of the City's 2010 UWMP was held at 7:30 p.m., or soon thereafter as could be heard, on Tuesday January 10, 2012 in the City Council Chamber at Downey City Hall, 11111 Brookshire Avenue, Downey CA 90241; and

WHEREAS, the Act requires that the Plan be filed with DWR no later than 30 days after adoption, and final copies of the Plan be made available for review within 30 days of filing the Plan with DWR; and

WHEREAS, all remarks and suggestions brought to the attention of the City were considered prior to final preparation of the Plan. The City of Downey shall file the 2010 UWMP with DWR and make available for review no later than 30 days after Council adoption of said Plan.

**NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF DOWNEY DOES
HEREBY RESOLVE AS FOLLOWS:**

SECTION 1. The 2010 UWMP is hereby adopted and ordered filed with the City Clerk;

SECTION 2. The Public Works Director is hereby authorized and directed to file the 2010 UWMP with DWR no later than 30 days after Council adoption;

SECTION 3. The Public Works Director is hereby authorized and directed to pursue the implementation of all elements of the 2010 UWMP related but not limited to, water usage, supply, reclamation, and conservation/reduction activities;

SECTION 4. In the event of a water shortage, the Council shall make such a declaration and implement the water shortage contingency plan in accordance with the stages and triggering mechanisms indicated in the Plan along with all other necessary elements of the Plan;

SECTION 5. The Public Works Director shall recommend to the City Council, as necessary, any additional procedures, rules, and regulations to carry out effective and equitable allocation of water resources.

SECTION 6. The City Clerk shall certify to the adoption of this Resolution.

APPROVED AND ADOPTED this 10th day of January, 2012.



ROGER C. BROSSMER, Mayor

ATTEST:



ADRIA M. JIMENEZ, CMC
City Clerk

RESOLUTION NO. 12-7309
PAGE THREE

I HEREBY CERTIFY that the foregoing Resolution was adopted by the City Council of the City of Downey at a regular meeting held on the 10th day of January, 2012, by the following vote, to wit:

AYES:	Council Members: Guerra, Marquez, Vasquez, Gafin, Mayor Brossmer
NOES:	Council Members: None
ABSENT:	Council Members: None
ABSTAIN:	Council Members: None


ADRIA M. JIMENEZ, CMC
City Clerk

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APPENDIX F
CENTRAL BASIN JUDGMENT

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LAGERLOF, SENEAL, DRESCHER & SWIFT

LAWYERS
10TH FLOOR
301 NORTH LAKE AVENUE
PASADENA, CALIFORNIA 91101
(818) 793-9400
(213) 385-4345

FACSIMILE (818) 793-5900

GEORGE W. DRYER 1881-1959
RAYMOND R. HAILS 1889-1959
JOSEPH J. BURRIS 1913-1980

VENTURA OFFICE
3200 TELEGRAPH ROAD, SUITE 203
VENTURA, CALIFORNIA 93003-3232
(805) 656-4255

SANTA PAULA OFFICE
725 EAST MAIN STREET, SUITE 306
POST OFFICE BOX 190
SANTA PAULA, CALIFORNIA 93061-0190
(805) 525-7101 • (805) 647-4563

PLEASE REPLY TO

STANLEY C. LAGERLOF
H. MELVIN SWIFT, JR.
H. JESS SENEAL
JACK T. SWAFFORD
JOHN F. BRADLEY, SR.
PHILIP C. DRESCHER
BEN A. SCHUCK III
TIMOTHY J. GOSNEY
JOHN R. MCCONICA II
W. STEPHEN ONSTOT
WILLIAM F. KRUSE
THOMAS S. BUNN III
BRUCE A. YOUNG
JOHN J. MCNAMARA
ROBERT M. OSTROVE
ANDREW D. TURNER
REBECCA J. THYNE
BRIAN L. FOX
PAUL M. NORMAN
CAROL L. VICKERS

May 9, 1991

Pasadena
Office

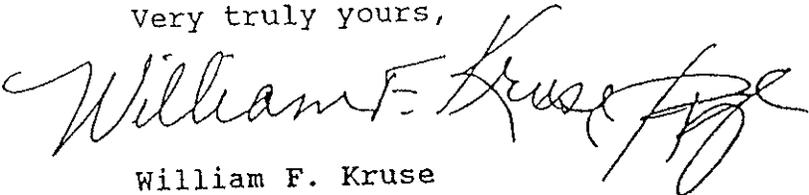
Mr. John Norman
Central & West Basin
Water Replenishment District
12621 166th Street
Cerritos, California 90701

Re: Second Amended Judgment

Dear John:

Enclosed is a copy of the Second Amended Judgment as executed by Judge Pickard on May 6, 1991. The Judgment Amendment is effective immediately.

Very truly yours,



William F. Kruse
of

LAGERLOF, SENEAL, DRESCHER & SWIFT

WFK/pc
Enclosure

cc: Richard A. Rhone, w/enc.
Thomas Salzano, w/enc.
Chris Nagler, w/enc.

1 MARTIN E. WHELAN, JR., and EDWIN H. VAIL, JR., and cross-
2 complainant was represented by its attorney JOHN S. TODD.
3 Various defendants and cross-defendants were also represented at
4 the trial. Evidence both oral and documentary was introduced.
5 The trial continued from day to day on May 17, 18, 19, 20, 21 and
6 24, 1965, at which time it was continued by order of Court for
7 further trial on August 25, 1965, at 10:00 a.m. in Department 73
8 of the above-entitled Court; whereupon, having then been
9 transferred to Department 74, trial was resumed in Department 74
10 on August 25, 1965, and then continued to August 27, 1965 at
11 10:00 a.m. in the same Department. On the latter date, trial was
12 concluded and the matter submitted. Findings of fact and conclu-
13 sions of law have heretofore been signed and filed. Pursuant to
14 the reserved and continuing jurisdiction of the court under the
15 judgment herein, certain amendments to said judgment and
16 temporary orders have heretofore been made and entered.
17 Continuing jurisdiction of the court for this action is currently
18 assigned to HON. FLORENCE T. PICKARD. Motion of Plaintiff herein
19 for further amendments to the judgment, notice thereof and of the
20 hearing thereon having been duly and regularly given to all
21 parties, came on for hearing in Department 38 of the above-
22 entitled court on MAY 6, 1991 at 8:45 a.m. before said HONORABLE
23 PICKARD. Plaintiff was represented by its attorneys LAGERLOF,
24 SENEAL, DRESCHER & SWIFT, by William F. Kruse. Various
25 defendants were represented by counsel of record appearing on the
26 Clerk's records. Hearing thereon was concluded on that date.
27 The within "Second Amended Judgment" incorporates amendments and
28 orders heretofore made to the extent presently operable and

1 amendments pursuant to said last mentioned motion. To the extent
2 this Amended Judgment is a restatement of the judgment as
3 heretofore amended, it is for convenience in incorporating all
4 matters in one document, is not a readjudication of such matters
5 and is not intended to reopen any such matters. As used
6 hereinafter the word "judgment" shall include the original
7 judgment as amended to date. In connection with the following
8 judgment, the following terms, words, phrases and clauses are
9 used by the Court with the following meanings:

10 "Administrative Year" means the water year until
11 operation under the judgment is converted to a fiscal year
12 pursuant to Paragraph 4, Part I, p. 53 hereof, whereupon it
13 shall mean a fiscal year, including the initial 'short fiscal
14 year' therein provided.

15 "Allowed Pumping Allocation" is that quantity in acre
16 feet which the Court adjudges to be the maximum quantity which a
17 party should be allowed to extract annually from Central Basin as
18 set forth in Part I hereof, which constitutes 80% of such party's
19 Total Water Right.

20 "Allowed Pumping Allocation for a particular Administra-
21 tive year" and "Allowed Pumping Allocation in the following
22 Administrative year" and similar clauses, mean the Allowed
23 Pumping Allocation as increased in a particular Administrative
24 year by any authorized carryovers pursuant to Part III, Subpart A
25 of this judgment and as reduced by reason of any over-extractions
26 in a previous Administrative year.

27 "Artificial Replenishment" is the replenishment of Central
28 Basin achieved through the spreading of imported or reclaimed

1 water for percolation thereof into Central Basin by a govern-
2 mental agency.

3 "Base Water Right" is the highest continuous extractions of
4 water by a party from Central Basin for a beneficial use in any
5 period of five consecutive years after the commencement of over-
6 draft in Central Basin and prior to the commencement of this
7 action, as to which there has been no cessation of use by that
8 party during any subsequent period of five consecutive years. As
9 employed in the above definition, the words "extractions of water
10 by a party" and "cessation of use by that party" include such
11 extractions and cessations by any predecessor or predecessors in
12 interest.

13 "Calendar Year" is the twelve month period commencing
14 January 1 of each year and ending December 31 of each year.

15 "Central Basin" is the underground water basin or reservoir
16 underlying Central Basin Area, the exterior boundaries of which
17 Central Basin are the same as the exterior boundaries of Central
18 Basin Area.

19 "Central Basin Area" is the territory described in Appendix
20 "1" to this judgment, and is a segment of the territory
21 comprising Plaintiff District.

22 "Declared water emergency" shall mean a period commencing
23 with the adoption of a resolution of the Board of Directors of
24 the Central and West Basin Water Replenishment District declaring
25 that conditions within the Central Basin relating to natural and
26 imported supplies of water are such that, without implementation
27 of the water emergency provisions of this Judgment, the water
28 resources of the Central Basin risk degradation. In making such

1 declaration, the Board of Directors shall consider any
2 information and requests provided by water producers, purveyors
3 and other affected entities and may, for that purpose, hold a
4 public hearing in advance of such declaration. A Declared Water
5 Emergency shall extend for one (1) year following such
6 resolution, unless sooner ended by similar resolution.

7 "Extraction", "extractions", "extracting", "extracted", and
8 other variations of the same noun and verb, mean pumping, taking,
9 diverting or withdrawing ground water by any manner or means
10 whatsoever from Central Basin.

11 "Fiscal Year" is the twelve (12) month period July 1 through
12 June 30 following.

13 "Imported Water" means water brought into Central Basin Area
14 from a non-tributary source by a party and any predecessors in
15 interest, either through purchase directly from The Metropolitan
16 Water District of Southern California or by direct purchase from
17 a member agency thereof, and additionally as to the Department of
18 Water and Power of the City of Los Angeles, water brought into
19 Central Basin Area by that party by means of the Owens River
20 Aqueduct.

21 "Imported Water Use Credit" is the annual amount, computed
22 on a calendar year basis, of imported water which any party and
23 any predecessors in interest, who have timely made the required
24 filings under Water Code Section 1005.1, have imported into
25 Central Basin Area in any calendar year and subsequent to July 9,
26 1951, for beneficial use therein, but not exceeding the amount by
27 which that party and any predecessors in interest reduces his or
28 their extractions of ground water from Central Basin in that

1 calendar year from the level of his or their extractions in the
2 preceding calendar year, or in any prior calendar year not
3 earlier than the calendar year 1950, whichever is the greater.

4 "Natural Replenishment" means and includes all processes
5 other than "Artificial Replenishment" by which water may become a
6 part of the ground water supply of Central Basin.

7 "Natural Safe Yield" is the maximum quantity of ground
8 water, not in excess of the long term average annual quantity of
9 Natural Replenishment, which may be extracted annually from
10 Central Basin without eventual depletion thereof or without
11 otherwise causing eventual permanent damage to Central Basin as a
12 source of ground water for beneficial use, said maximum quantity
13 being determined without reference to Artificial Replenishment.

14 "Overdraft" is that condition of a ground water basin
15 resulting from extractions in any given annual period or periods
16 in excess of the long term average annual quantity of Natural
17 Replenishment, or in excess of that quantity which may be
18 extracted annually without otherwise causing eventual permanent
19 damage to the basin.

20 "Party" means a party to this action. Whenever the
21 term "party" is used in connection with a quantitative water
22 right, or any quantitative right, privilege or obligation, or in
23 connection with the assessment for the budget of the Watermaster,
24 it shall be deemed to refer collectively to those parties to whom
25 are attributed a Total Water Right in Part I of this judgment.

26 "Person" or "persons" include individuals, partner-
27 ships, associations, governmental agencies and corporations, and
28 any and all types of entities.

1 "Total Water Right" is the quantity arrived at in the
2 same manner as in the computation of "Base Water Right", but
3 including as if extracted in any particular year the Imported
4 Water Use Credit, if any, to which a particular party may be
5 entitled.

6 "Water" includes only non-saline water, which is that
7 having less than 1,000 parts of chlorides to 1,000,000 parts of
8 water.

9 "Water Year" is the 12-month period commencing Octo-
10 ber 1 of each year and ending September 30th of the following
11 year.

12 In those instances where any of the above-defined
13 words, terms, phrases or clauses are utilized in the definition
14 of any of the other above-defined words, terms, phrases and
15 clauses, such use is with the same meaning as is above set forth.

16
17 NOW THEREFORE, IT IS ORDERED, DECLARED, ADJUDGED AND
18 DECREED WITH RESPECT TO THE ACTION AND CROSS-ACTION AS FOLLOWS:

19 I. DECLARATION AND DETERMINATION OF WATER RIGHTS OF
20 PARTIES; RESTRICTION ON THE EXERCISE THEREOF.¹

21 1. Determination of Rights of Parties.

22 (a) Each party, except defendants, The City of Los
23 Angeles and Department of Water and Power of the City of Los
24 Angeles, whose name is hereinafter set forth in the tabulation at
25 the conclusion of Subpart 3 of Part 1, and after whose name there
26

27 ¹Headings in the judgment are for purposes of reference and
28 the language of said headings do not constitute, other than for
such purpose, a portion of this judgment.

1 appears under the column "Total Water Right" a figure other than
2 "0", was the owner of and had the right to extract annually
3 groundwater from Central Basin for beneficial use in the quantity
4 set forth after that party's name under said column "Total Water
5 Right" pursuant to the Judgment as originally entered herein.
6 Attached hereto as Appendix "2" and by this reference made a part
7 hereof as though fully set forth are the water rights of parties
8 and successors in interest as they existed as of the close of the
9 water year ending September 30, 1978 in accordance with the
10 Watermaster Reports on file with this Court and the records of
11 the Plaintiff. This tabulation does not take into account
12 additions or subtractions from any Allowed Pumping Allocation of
13 a producer for the 1978-79 water year, nor other adjustments not
14 representing change in fee title to water rights, such as leases
15 of water rights, nor does it include the names of lessees of
16 landowners where the lessees are exercising the water rights.
17 The exercise of all water rights is subject, however, to the
18 provisions of this Judgment as hereinafter contained. All of
19 said rights are of the same legal force and effect and are
20 without priority with reference to each other. Each party whose
21 name is hereinafter set forth in the tabulation set forth in
22 Appendix "2" of this judgment, and after whose name there appears
23 under the column "Total Water Right" the figure "0" owns no
24 rights to extract any ground water from Central Basin, and has no
25 right to extract any ground water from Central Basin.

26 (b) Defendant The City of Los Angeles is the owner of
27 the right to extract fifteen thousand (15,000) acre feet per
28 annum of ground water from Central Basin. Defendant Department

1 of Water and Power of the City of Los Angeles has no right to
2 extract ground water from Central Basin except insofar as it has
3 the right, power, duty or obligation on behalf of defendant The
4 City of Los Angeles to exercise the water rights in Central Basin
5 of defendant The City of Los Angeles. The exercise of said
6 rights are subject, however, to the provisions of this judgment
7 hereafter contained, including but not limited to, sharing with
8 other parties in any subsequent decreases or increases in the
9 quantity of extractions permitted from Central Basin, pursuant to
10 continuing jurisdiction of the Court, on the basis that fifteen
11 thousand (15,000) acre feet bears to the Allowed Pumping
12 Allocations of the other parties.

13 (c) No party to this action is the owner of or has any
14 right to extract ground water from Central Basin except as herein
15 affirmatively determined.

16 2. Parties Enjoined as Regards Quantities of Extractions.

17 (a) Each party, other than The State of California and The
18 City of Los Angeles and Department of Water and Power of The City
19 of Los Angeles, is enjoined and restrained in any Administrative
20 year commencing after the date this judgment becomes final from
21 extracting from Central Basin any quantity of Water greater than
22 the party's Allowed Pumping Allocation as hereinafter set forth
23 next to the name of the party in the tabulation appearing in
24 Appendix 2 at the end of this Judgment, **subject to further**
25 provisions of this judgment. Subject to such further provisions,
26 the officials, agents and employees of The State of California
27 are enjoined and restrained in any such Administrative year from
28 extracting from Central Basin collectively any quantity of water

1 greater than the Allowed Pumping Allocation of The State of
2 California as hereinafter set forth next to the name of that
3 party in the same tabulation. Each party adjudged and declared
4 above not to be the owner of and not to have the right to extract
5 ground water from Central Basin is enjoined and restrained in any
6 Administrative year commencing after the date this judgment
7 becomes final from extracting any ground water from Central
8 Basin, except as may be hereinafter permitted to any such party
9 under the Exchange Pool provisions of this judgment.

10 (b) Defendant The City of Los Angeles is enjoined and
11 restrained in any Administrative year commencing after the date
12 this judgment becomes final from extracting from Central Basin
13 any quantity of water greater than fifteen thousand (15,000) acre
14 feet, subject to further provisions of this judgment, including
15 but not limited to, sharing with other parties in any subsequent
16 decreases or increases in the quantity of extractions permitted
17 from Central Basin by parties, pursuant to continuing
18 jurisdiction of the Court, on the basis that fifteen thousand
19 (15,000) acre feet bears to the Allowed Pumping Allocations of
20 the other parties. Defendant Department of Water and Power of
21 The City of Los Angeles is enjoined and restrained in any
22 Administrative year commencing after the date this judgment
23 becomes final from extracting from Central Basin any quantity of
24 water other than such as it may extract on behalf of defendant
25 The City of Los Angeles, and which extractions, along with any
26 extractions by said City, shall not exceed that quantity
27 permitted by this judgment to that City in any Administrative
28 year. Whenever in this judgment the term "Allowed Pumping

1 Allocation" appears, it shall be deemed to mean as to defendant
 2 The City of Los Angeles the quantity of fifteen thousand (15,000)
 3 acre feet.

Name ²	Total Water Right	Allowed Pumping Allocation
J. P. Abbott, Inc.	21	17
Charles E. Adams (Corty Van Dyke, tenant) (see additional listing below for Charles E. Adams)	8	6
Charles E. Adams and Rhoda E. Adams	5	4
Juan Aguayo and Salome Y. Aguayo	1	1
Aguiar Dairy, Inc.	33	26
Airfloor Company of California, Inc.	1	1
J. N. Albers and Nellie Albers	98	78
Jake J. Alewyn and Mrs. Jake J. Alewyn aka Normalie May Alewyn (see listing under name of Victor E. Gamboni)		
Tom Alger and Hilda Alger	9	7
Clarence M. Alvis and Doris M. Alvis	0	0
American Brake Shoe Company	52	42

2Parties and Rights as originally adjudicated

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	American Pipe and Construction Co.	188	150
4	Anaconda American Brass Company	0	0
5	Gerrit Anker (see listing under name of Agnes De Vries		
6			
7	Archdiocese of Los Angeles Education & Welfare Corporation	8	6
8			
9	George W. Armstrong and Ruth H. Armstrong (Armstrong Poultry Ranch, tenant)	28	22
10	Artesia Cemetery District	30	24
11	Artesia Milling Company (see listing under name of Dick Zuidervaat)		
12			
13	Artesia School District	51	41
14	Arthur Land Co., Inc.	13	10
15	Charles Arzouman and Neuart Arzouman	1	1
16			
17	Associated Southern Investment Company (William R. Morris, George V. Gutierrez and Mrs. Socorro Gutierrez, tenants and licensees)	16	13
18			
19	The Atchison, Topeka and Santa Fe Railway Co.	124	99
20			
21	Atkinson Brick Company	11	9
22	Arthur Atsma (see listing under name of Andrew De Voss)		
23			
24	B.F.S. Mutual Water Company	183	146
25	Henry Baar (see listing under name of Steve Stefani, Sr.)		
26			
27	Vernon E. Bacon (see listing under name of Southern California Edison Company)		
28			

1	<u>Name</u>	Total Water Right	Allowed Pumping Allocation
2			
3	Adolph Bader and Gesine Bader (Fred Bader, tenant)	14	11
4			
5	K. R. Bailey and Virginia R. Bailey	1	1
6	Dave Bajema (see listing under name of Peter Dotinga)		
7	Donald L. Baker and Patsy Ruth Baker	5	4
8	Allen Bakker	0	0
9	Sam Bangma and Ida Bangma	17	14
10	Bank of America National Trust and Savings Association, as Trustee of Trust created by Will of Tony V. Freitas, Deceased (Frank A. Gonsalves, tenant)	29	23
12			
13	Emma Barbaria, as to undivided 1/2 interest; John Barbaria, Jr. and Lorraine Barbaria as to undivided 1/4 interest; and Frank Barbaria as to undivided 1/4 interest (John Barbaria & Sons Dairy, tenant)	27	22
15			
16	Antonio B. Barcellos and Manuel B. Barcellos	12	10
17			
18	John Barcelos and Guilhermina Barcelos	16	13
19			
20	Sam Bartsma and Birdie Bartsma	34	27
21			
22	Bateson's School of Horticulture, Inc. (see listing under name of John Brown Schools of California, Inc.)		
23			
24	Bechard Mutual Water Corporation	4	4
25			
26	Beck Tract Water Company, Inc.	29	23
27			
28	Iver F. Becklund	1	1
29			
30	Margaret E. Becklund	1	1
31			
32	P. T. Beeghly (International Carbonic, Inc., tenant)	1	1
33			
34	Doutzen Bekendam and Hank Bekendam	0	0
35			
36	John Bekendam	0	0
37			
38	Tillie Bekendam	0	0

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
	Bell Trailer City (see listing under name of Bennett E. Simmons)	1	1
	E. F. Bellenbaum and Marie P. Bellenbaum	32	26
	Bellflower Christian School	243	194
	Bellflower Home Garden Water Company	111	89
	Bellflower Unified School District	2,109	1,687
	Bellflower Water Company	11	9
	Belmont Water Association	0	0
	Tony Beltman	0	0
	Berlu Water Company, Inc.	32	26
	Jack R. Bettencourt and Bella Bettencourt	151	121
	Bigby Townsite Water Co.		
	Siegfried Binggeli and Trina L. Binggeli (see listing under name of Paul H. Lussman, Jr.)	0	0
	Fred H. Bixby Ranch Company		
	Delbert G. Black and Lennie O. Black as to undivided one-half; and Harley Lee, as to undivided one-half	40	32
	Bloomfield School District	11	9
	Adrian Boer and Julia Boer	5	4
	Gerard Boere and Rosalyn Boer		
	Henry Boer and Annie Boer (William Offinga & Son, including Sidney Offinga, tenants as to 33 acre feet of water right and 26 acre feet of allowed pumping allocation)	34	27
		30	24
	John Boere, Jr. and Mary J. Boere	30	24
	John Boere, Sr. and Edna Boere (John Boere, Jr., tenant)	30	24
	John Boere, Jr. (see also listing under name of Leonard A. Grenier)		

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	Frank Boersma and Angie Boersma	31	25
4	Gerrit Boersma and Jennie Boersma (George Boersma, tenant)	8	6
5	Jack Boersma	0	0
6	Sam Boersma and Berdina Boersma	42	34
7			
8	Jan Bokma (see listing under name of August Vandenberg)		
9	Jacob Bollema	0	0
10	James C. Boogerd (see listing under name of Jake Van Leeuwen, Jr.)		
11			
12	Bernard William Bootsma, Carrie Agnes Van Dam and Gladys Marie Romberg	12	10
13	Michel Bordato and Anna M. Bordato (Charlie Vander Kooi, tenant)	12	10
14			
15	John Borges and Mary Borges, aka Mrs. John Borges (Manuel B. Ourique, tenant)	14	11
16	Mary Borges, widow of Manuel Borges (Manuel Borges, Jr., tenant)	7	6
17	Gerrit Bos and Margaret Bos	88	70
18			
19	Jacob J. Bosma (see listing under name of Sieger Vierstra)		
20	Peter Bothof	6	5
21	William Bothof and Antonette Bothof	7	6
22	Frank Bouma and Myron D. Kolstad	3	3
23	Ted Bouma and Jeanette Bouma	21	17
24	Sam Bouman (Arie C. Van Leeuwen, tenant)	8	6
25	John Brown Schools of California, Inc. (Bateson's School of Horticulture, Inc., tenant)	2	2
26			
27	M. J. Brown, Jr. and Margaret Brown	0	0
28	Adrian Bulk and Alice Bulk	20	16

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	Duke Buma and Martha Buma	8	6
4	Miles A. Burson and Rose Burson	7	6
5	Calavar Corporation (see listing under name of H R M Land Company)		
6	California Cotton Oil Corporation	101	81
7	California Portland Cement Company	0	0
8	California Rendering Company, Ltd.	149	119
9	California Water and Telephone Company	2,584	2,067
10	California Water Service Company		
11	(Base Water Right - 13,477)	14, 717	11,774
12	Candlewood Country Club	184	147
13	V. Capovilla and Mary Capovilla	0	0
14	Carmenita School District	9	7
15	Carson Estate Company	139	111
16	Paul Carver	0	0
17	Catalin Corporation of America	13	10
18	Center City Water Co.	86	69
19	Central Manufacturing District, Inc. (Louis Guglielmana and		
20	Richard Wigboly, tenants)	825	660
21	Century Center Mutual Water Association	317	254
22	Century City Mutual Water Company, Ltd.	62	50
23	Cerritos Junior College District	119	95
24	Cerritos Park Mutual Water Company	77	62
25	Challenge Cream & Butter Association	146	117
26	Chansall Mutual Water Company	101	81
27	Maynard W. Chapin, as Executor of the Estate of Hugh L. Chapin, deceased	36	29
28			

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	Cherryvale Water Users' Association	14	11
4	Shigeru Chikami and Jack Chikami doing		
5	business as Chikami Bros. Farming		
6	(see also listing under name of		
7	Southern California Edison Company)	10	8
8	John Christoffels and Effie Christoffels	14	11
9	Citrus Grove Heights Water Company	277	222
10	City Farms Mutual Water Company No. 1	37	30
11	City Farms Mutual Water Company No. 2	15	12
12	City of Artesia	30	24
13	City of Bellflower	60	48
14	City of Compton	6,511	5,209
15	City of Downey	5,713	4,570
16	City of Huntington Park	4,788	3,830
17	City of Inglewood (Base Water		
18	Right - 629)	1,118	894
19	City of Lakewood	10,631	8,505
20	City of Long Beach (Base Water		
21	Right - 29,876)	33,538	26,830
22	City of Los Angeles (see paragraph 2		
23	above of this Part I for water		
24	rights and restrictions on the		
25	exercise thereof of said defendant.		
26	See also such reference with		
27	respect to Department of Water and		
28	Power of the City of Los Angeles.)		
	City of Lynwood	6,238	4,990
	City of Montebello	260	208
	City of Norwalk	613	490
	City of Santa Fe Springs	505	404
	City of Signal Hill	1,675	1,340

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	City of South Gate	9,942	7,954
4	City of Vernon	9,008	7,206
5	City of Whittier	776	621
6	Allan Clanton and Ina Clanton	80	64
7	Claretian Jr. Seminary (see listing under name of Dominguez Seminary)		
8			
9	Dr. Russell B. Clark (see listing under name of Research Building Corporation)		
10	Jacob Cloo and Grace Cloo	16	13
11	Clougherty Packing Company	80	64
12	Coast Packing Company	426	341
13	Coast Water Company	588	470
14	Joe A. Coelho, Jr. and Isabel Coelho	5	4
15	J. H. Coito, Jr.	0	0
16	John H. Coito and Guilhermina Coito (Zylstra Bros., a partnership consisting of Lammert Zylstra and William Zylstra, tenant)	17	14
17			
18	J. E. Collinsworth	15	12
19			
20	Compton Union High School District	48	38
21	Conservative Water Company (Base Water Right - 4,101)	133	3,306
22	Container Corporation of America	323	1,058
23	Nicholas C. Contoas and P. Basil Lambros (Vehicle Maintenance & Painting Corporation, tenant)	1	1
24			
25	Continental Can Company, Inc.	946	757
26	Contractors Asphalt Products Company, Inc.	16	13
27			
28	R. M. Contreras	8	6

1	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
2			
3	Copp Equipment Company, Inc. and Humphries Investments Incorporated	7	6
4			
5	Mary Cordeiro and First Western Bank & Trust Company, as Trustee pursuant to last will and testament of Tony Cordeiro, deceased	46	37
6			
7	Corporation of the Presiding Bishop of the Church of Jesus Christ of Latter Day Saints (Ray Mitchell, tenant)	39	31
8			
9	Harry Lee Cotton and Doris L. Cotton	5	4
10	County of Los Angeles	737	590
11	County Water Company	280	224
12	Cowlitz Amusements, Inc. (La Mirada Drive-In Theater, tenant)	4	4
13			
14	Pete Coy	28	22
15	Crest Holding Corporation	20	16
16	Katherine M. Culbertson	2	2
17	Orlyn L. Culp and Garnette Culp	21	17
18	Everett Curry and Marguerite Curry	2	2
19	D. V. Dairy (see listing under name of Frank C. Leal)		
20	Dairymen's Fertilizer Co-op, Inc.	1	1
21	Noble G. Daniels (see listing under name of Harold Marcroft)		
22			
23	John A. Davis	0	0
24	Henry De Bie, Jr. and Jessie De Bie	17	14
25	Clifford S. Deeth	0	0
26	Ernest De Groot and Dorothy De Groot	81	65
27	Pete de Groot	15	12
28	Pier De Groot and Fay De Groot	21	17

<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
Martin De Hoog and Adriana De Hoog	12	10
Edward De Jager and Alice De Jager	37	30
Cornelius De Jong and Grace De Jong	13	10
Jake De Jong and Lena De Jong (Frank A. Gonsalves, tenant as to 8 acre-feet of water right)	21	17
William De Kriek (see listing under name of Gerrit Van Dam)		
Del Amo Dairy (see listing under name of Ed Haakma)		
Del Amo Estate Company	0	0
Joe De Marco and Concetta De Marco	1	1
Louis F. De Martini (see listing under name of Southern California Edison Company)		
Mary A. De Mello	16	13
John Den Hollander (see listing under name of James Dykstra)		
Department of Water and Power of The City of Los Angeles, by reason of charter provisions, has the management and control of water rights owned by the City of Los Angeles (see listing under name of City of Los Angeles)		
Ruth E. Dever (Orange County Nursery, Inc., tenant)	0	0
Andrew De Voss and Alice De Voss (Arthur De Voss and Arthur Atsma, tenants)	36	29
Agnes De Vries (Gerrit Anker, tenant)	16	13
Dick De Vries and Theresa De Vries	10	8
Gerrit De Vries and Claziena De Vries	18	14
Gerrit Deyager and Dena Deyager	0	0

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	Lloyd W. Dinkelspiel, Jr. (see listing under name of Florence Hellman Ehrman)		
4			
5	District VII, Division of Highways of the State of California Department of Public Works (see listing under name of State of California)		
6			
7	Dominguez Estate Company	0	0
8	Dominguez Seminary and Claretian Jr. Seminary	111	89
9	Dominguez Water Corporation	8,012	6,410
10			
11	Peter Dotinga and Tena Dotinga (Dave Bajema, tenant)	9	7
12	Robert L. Dougherty	0	0
13	Downey Cemetery District	21	17
14	Downey Fertilizer Co. (see listing under name of Downey Land Company)		
15			
16	Downey Land Company (Downey Fertilizer Co., tenant)	101	81
17	Downey Valley Water Company	87	70
18	Jim Drost	0	0
19	James Dykstra and Dora Dykstra (John Den Hollander, tenant)	6	5
20			
21	John Dykstra and Wilma Dykstra	52	42
22			
23	Cor Dyt and Andy Dyt	6	5
24			
25	Eagle Picher Company	141	113
26			
27	Gail H. Eagleton	67	54
28			
	Florence Hellman Ehrman; I. W. Hellman, Jr.; Frederick J. Hellman; Marco F. Hellman; Clarence E. Heller; Alfred Heller, Elizabeth Heller; Clarence E. Heller, Elinor R. Heller and Wells Fargo Bank, as co-executors of the Estate of Edward H. Heller, deceased; Lloyd W. Dinkelspiel, Jr., William H.		

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
	Green and Wells Fargo Bank, as co-executors of the Estate of Lloyd W. Dinkelspiel, deceased; Wells Fargo Bank, as Trustee under the trust created by the Will of Florence H. Dinkelspiel, deceased. (Union Oil Company of California, Lessee as to 190 acre-feet of right and as to 152 acre-feet of allowed pumping allocation)	555	444
	El Rancho Unified School District	69	55
	Berton Elson (see listing under name of D. P. Winslow)		
	John H. Emoto and Shizuko Emoto	0	0
	Addie L. Enfield (see listing under name of James L. Stamps)		
	John W. England and Consuello England (see listing under name of Jenkins Realty Mutual Water Co.)		
	Emma Engler (Morris Weiss, tenant)	10	8
	Anthony F. Escobar and Eva M. Escobar (Henry Kampen, tenant)	14	11
	Excelsior Union High School District	381	305
	Kenneth A. Farris and Wanda Farris	1	1
	Federal Ice and Cold Storage Company	92	74
	Fred Fekkes (see listing under name of Steve Stefani, Sr.)		
	Julius Felsenthal and Mrs. Julius Felsenthal, aka Marga Felsenthal	1	1
	Tony Fernandes (see listing under name of U. Stewart Jones)		
	Joe C. Ferreira and Carolina Ferreira (Joe C. Ferreira and Joe C. Ferreira, Jr., operators of well facility)	37	30

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	Mary A. Ferreira (Joe Lucas, tenant)		
4	(see also listing under name of Jack Gonsalves)	1	1
5	John Feuz, Jr.	0	0
6	Fibreboard Paper Products Corporation	1,521	1,217
7	Abe Fien	0	0
8	Alfred Fikse, Jr. and Aggie Fikse	2	2
9	Henry Fikse and Jennie Fikse	4	4
10	Filtrol Corporation	570	456
11	The Firestone Tire & Rubber Co.	1,536	1,229
12	First Western Bank & Trust Co. (see listing under name of Mary Cordeiro)		
13	Clare Fisher	0	0
14			
15	Elizabeth Flesch, James Flesch, Margaret Flesch, Theodore Flesch, Ernest D. Roth and Eva Roth, doing business as Norwalk Mobile Lodge	18	14
16			
17	The Flintkote Company	2,567	2,054
18	Ford Motor Company	11	9
19	Robert G. Foreman (see listing under name of Lakewood Pipe Co.)		
20			
21	Guisseppi Franciosi and Alice Franciosi	2	2
22	Tony V. Freitas (see listing under name of Bank of America, etc.)		
23	S. Fujita	0	0
24	Jun Fukushima (see listing under name of Chige Kawaguchi)		
25			
26	Paul Fultheim and Helga Fultheim	5	4
27	Fumi Garden Farms, Inc. (see listing under name of Southern California Edison Company and also under name of George Yamamoto)		
28			

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	Gabby Louise, Inc. (Arthur Gilbert & Associates, tenant)	58	46
4			
5	Victor E. Gamboni and Barbara H. Gamboni (Jake J. Alewyn and Mrs. Jake J. Alewyn also known as Normalie May Alewyn, tenants as to 13 acre feet of water right and 10 acre feet of allowed pumping allocation)	27	22
6			
7			
8	Nick Gandolfo and Palmera Gandolfo	5	4
9	Freddie A. Garrett and Vivian Marie Garrett	6	5
10	Martha Gatz	15	12
11	General Dynamics Corporation	675	540
12	General Telephone Company of California	2	2
13	Alfred Giacomi and Jennie Giacomi	58	46
14	Arthur Gilbert & Associates (see listing under name of Gabby Louise Inc.)		
15			
16	Mary Godinho	0	0
17	Pauline Godinho (Joe C. Godinho and John C. Godinho, Jr., doing business as Godinho Bros. Dairy, tenants)	31	25
18			
19	Harry N. Goedhart, Henry Otto Goedhart, Hilbrand John Goedhart, John Goedhart, Otto Goedhart, Jr., Peter Goedhart, and Helen Goedhart Van Eik (Paramount Farms, tenant)	21	17
20			
21	Reimer Goedhart	12	10
22			
23	Golden Wool Company	223	178
24	Albert S. Gonsalves and Caroline D. Gonsalves	10	8
25			
26	Frank A. Gonsalves (see listing under name of Bank of America National Trust and Savings Association, etc.; and also under name of Jake De Jong)		
27			
28			

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	Jack Gonsalves, Joe Lucas, Pete Koopmans,		
4	Manuel M. Souza, Sr., Manuel M. Souza,		
5	Jr., Frank M. Souza, Louie J. Souza,	55	44
6	and Mary A. Ferreira		
7	Jack Gonsalves and Mary Gonsalves	31	25
8	Joaquin Gonsalves and Elvira Gonsalves	27	22
9	Joe A. Gonsalves and Virginia Gonsalves	12	10
10	The B. F. Goodrich Company	519	415
11	The Goodyear Tire & Rubber Company	1,141	913
12	Eric Gorden and Hilde Gorden	2	2
13	Fern Ethyl Gordon as to an undivided		
14	1/2 interest; Fay G. Tawzer and		
15	Lawrence R. Tawzer, as to an undivided		
16	1/2 interest	17	14
17	Huntley L. Gordon (appearing by and		
18	through United California Bank, as		
19	Conservator of the Estate of		
20	Huntley L. Gordon)	41	33
21	Robert E. Gordon	5	4
22	Joe Gorzeman and Elsie Gorzeman	13	10
23	Florence M. Graham	7	6
24	Marie Granger	0	0
25	Great Western Malting Company	448	358
26	William H. Green (see listing under name		
27	of Florence Hellman Ehrman)		
28	Greene-Howard Petroleum Corporation (see		
	listing under name of Hathaway Company)		
	John H. Gremmius and Henry W. Gremmius		
	dba Henry and John Gremmius	0	0
	Leonard A. Grenier and Marie Louise		
	Grenier (John Boere, Jr., tenant)	10	8
	Florence Guerrero	2	2

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	<u>Name</u> Louis Guglielmana (see listing under name of Central Manufacturing District, Inc.) George V. Gutierrez and Mrs. Socorro Gutierrez (see listing under name of Associated Southern Investment Company) Salvatore Gutierrez (see listing under name of Southern California Edison Company) H. J. S. Mutual Water Co. H R M Land company (Harron, Rickard & McCone Company of Southern California and Calavar Corporation, tenants) Gerrit Haagsma and Mary Haagsma Ed Haakma and Sjana Haakma (Del Amo Dairy, tenant; Ed Haakma and Pete Vander Kooi, being partners of said Del Amo Dairy) Verney Haas and Adelyne Haas William H. Hadley and Grace Hadley Henry C. Haflinger and Emily Haflinger Clarence Theodore Halburg Fred Hambarian Henry Hamstra and Nelly Hamstra Raymond Hansen and Mary Hansen Earl Haringa; Evert Veenendaal and Gertrude Veenendaal Antoine Harismendy and Claire Harismendy Harron, Rickard & McCone Company of Southern California (see listing under name of H R M Land Company) Jack D. Hastings Kameko Hatanaka	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
		63	50
		3	3
		10	8
		28	22
		4	4
		4	4
		10	8
		3	3
		2	2
		33	26
		12	10
		22	18
		0	0
		0	0
		9	7

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	Kazuo Hatanaka (Minoru Yoshijima, tenant)	10	8
4	Masakazu Hatanaka, Isao Hatanaka, and Kenichi Hatanaka	5	4
5	Mrs. Motoye Hatanaka	0	0
6			
7	Hathaway Company, Richard F. Hathaway, Julian I. Hathaway, and J. Elwood Hathaway (Greene-Howard Petroleum Corporation, tenant utilizing less than 1 acre foot per year)	70	56
8			
9			
10	Clarence E. Heller; Alfred Heller; Elizabeth Heller; Clarence E. Heller; Elinor R. Heller, as co-executors of the Estate of Edward H. Heller, deceased (see listing under name of Florence Hellman Ehrman)		
11			
12			
13	I. W. Hellman, Jr.; Frederick J. Hellman; Marco F. Hellman (see listing under name of Florence Hellman Ehrman)		
14			
15	Ralph Hicks	0	0
16	Alfred V. Highstreet and Evada V. Highstreet	10	8
17	John Highstreet and Eileen M. Highstreet	9	7
18			
19	Bob Hilarides and Maaike Hilarides (Frank Hilarides, tenant)	51	41
20	John Hilarides and Maria Hilarides	26	21
21	Hajime Hirashima (see listing under name of Masaru Uyeda)		
22			
23	Willis G. Hix	1	1
24	Henry H. Hoffman and Apolonia Hoffman	12	10
25	Dick Hofstra	0	0
26	Andrew V. Hohn and Mary G. Hohn	1	1
27			
28	Kyle R. Holmes and Grace Ellen Holmes	20	16
	Home Water Company	35	28

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	Manuel L. Homen	17	14
4	Mrs. Paul Y. Homer (see listing under name of Mrs. Paul Y. Homer (King).)		
5	Cornelis Hoogland and Alice Hoogland	15	12
6	Art Hop, Jr.	0	0
7	Art Hop, Sr. and Johanna Hop (G. A. Van Beek, tenant)	5	4
8			
9	Andrew Hop, Jr. and Muriel Hop	33	26
10	Theodore R. Houseman and Leona M. Houseman	14	11
11			
12	Humphries Investments Incorporated (see listing under name of Copp Equipment Company, Inc.)		
13			
14	Albert Huyg and Marie Huyg	22	18
15	Hygenic Dairy Farms, Inc.	0	0
16	Pete W. Idsinga and Annie Idsinga	13	10
17	Miss Alice M. Imbert	1	1
18	Industrial Asphalt of California, Inc.	116	93
19	Inglewood Park Cemetery Association	285	228
20	International Carbonic, Inc. (see listing under name of P. T. Beeghly)		
21	Jugora Ishii and Mumeno Ishii (Ishii Brothers, tenant)	10	8
22	Robert J. Jamison and Betty Jamison	7	6
23			
24	Jenkins Realty Mutual Water Co. (Clyde H. Jenkins, Minnie R. Jenkins, Mary Wilcox, Ruby F. Marchbank, Robert B. Marchbank, John W. England, and Consuello England, shareholders	10	8
25			
26	John-Wade Co.	1	1
27	Henry S. Jones and Madelynne Jones	1	1
28			

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	U. Stewart Jones and Dorothy E. Jones (Tony Fernandes, tenant)	1	1
4	Harold Jongsma and Mary N. Jongsma	65	52
5	W. P. Jordan (see listing under name of Henry Van Ruiten)		
6			
7	Dave Jorritsma and Elizabeth Jorritsma	27	22
8	Christine Joseph (see listing under name of Helen Wolfsberger)		
9			
10	Junior Water Co., Inc.	737	590
11	Kal Kan Foods, Inc.	120	96
12	Kalico, Inc.	4	4
13	Hagop Kalustian (11 acre feet of total water right attributable to well located at 6629 South Street, Lake- wood and reported to plaintiff under Producer No. 3925. 2 acre feet of total water right attributable to portion of property not sold to State of California formerly served by well located at 10755 Artesia Blvd., Artesia, the production of which well was reported to plaintiff under Producer No. 4030)	13	10
14			
15			
16			
17			
18			
19	Fritz Kampen and Clare Kampen	14	11
20	William Kamstra and Bertha Kamstra	35	28
21	Henry Kampen (see listing under name of Anthony Escobar)		
22			
23	L. Kauffman Company, Inc. (see listing under name of Lorraine K. Meyberg)		
24	Chige Kawaguchi and Masao Kawaguchi (Jun Fukushima, tenant)	4	4
25			
26	King Kelley Marmalade Co. (see listing under name of Roberta M. Magnusson)		
27	Mrs. Paul Y. Homer (King)	17	14
28	Jacob R. Kimm and Bonnie Kimm	36	29

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	Mrs. Oraan Kinne (Nicholaas J. Moons, tenant)	11	9
4			
5	Morris P. Kirk & Son, Inc.	77	62
6	Jake Knevelbaard and Anna Knevelbaard	50	40
7	Willie Knevelbaard and Joreen Knevelbaard	1	1
8	Simon Knorringa	12	10
9	John Koetsier, Jr.	0	0
10	Myron D. Kolstad (see listing under name of Frank Bouma)		
11			
12	Yoshio Kono and Barbara Kono (see listing under name of George Mimaki)		
13	Louis Koolhaas	13	10
14	Simon Koolhaas and Sophie Grace Koolhaas	9	7
15	Pete Koopmans (see listing under name of Jack Gonsalves)		
16			
17	Nick P. Koot (see listing under name of Mary Myrndahl)		
18	Kotake, Inc. (Masao Kotake, Seigo Kotake, William Kotake, dba Kotake Bros., tenants)	83	66
19			
20	Masao Kotake	0	0
21	Walter G. Kruse and Mrs. Walter G. Kruse, aka Vera M. Kruse	11	9
22	Laguna-Maywood Mutual Water Company No. 1	1,604	1,283
23			
24	La Habra Heights Mutual Water Company	3,044	2,435
25	La Hacienda Water Company	46	37
26	Lakewood Pipe Co., a partnership composed of Robert G. Foreman, Frank W. Tybus and June E. Tybus		
27	(Lakewood Pipe Service Co., tenant)	12	10
28			

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	P. Basil Lambros (see listing under name of Nicholas C. Conteas)		
4			
5	La Mirada Drive-in Theater (see listing under name of Cowlitz Amusements, Inc.)		
6	La Mirada Water Company	0	0
7	Calvin E. Langston and Edith Langston	1	1
8	S. M. Lanting and Alice Lanting	15	12
9	Henry Lautenbach and Nellie H. Lautenbach	16	13
10	Norman Lautrup, as Executor of the Estate of Nels Lautrup, deceased; and Minnie Margaret Lautrup	30	24
11			
12	Frank C. Leal and Lois L. Leal (D. V. Dairy, tenant)	15	12
13			
14	Eugene O. LeChasseur and Lillian P. LeChasseur (R. A. LeChasseur, tenant)	2	2
15	Lee Deane Products, Inc.	0	0
16	Harley Lee (see listing under name of Delbert G. Black)		
17			
18	Le Fiell Manufacturing Company	0	0
19	Armand Lescoulie (see listing under name of Southern California Edison Company)		
20	Liberty Vegetable Oil Company	14	11
21	Little Lake Cemetery District	17	14
22	Little Lake School District	0	0
23	Loma Floral Company (see listing under name of George Mimaki)		
24			
25	Melvin L. Long and Stella M. Long	2	2
26	Nick J. Loogman (see listing under name of William Smoorenburg)		
27	Frank Lorenz (see listing under name of Ralph Oosten)		
28			

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	Los Angeles County Waterworks District No. 1 (Base Water Right 22)	113	90
4			
5	Los Angeles County Waterworks District No. 10	842	674
6	Los Angeles County Waterworks District No. 16	412	330
7			
8	Los Angeles Paper Box and Board Mills	321	257
9	Los Angeles Union Stockyards Company	0	0
10	Los Nietos Tract 6192 Water Co.	49	39
11	Alden Lourenco (see listing under name of A. C. Pinheiro)		
12	Lowell Joint School District	0	0
13	Joe Lucas (see listings under names of Mary A. Ferreira and Jack Gonsalves)		
14	Luer Packing Co. (see listing under name of Sam Perricone)		
15			
16	Jake J. Luetto (Orange County Nursery, Inc., tenant)	13	10
17	Lunday-Thagard Oil Co.	265	212
18			
19	Joe Luond (Frieda Roethlisberger, tenant as to portion of rights)	7	6
20	John Luscher and Frieda Luscher	13	10
21	Paul H. Lussman, Jr. and Ann Lussman, Siegfried Binggeli and Trina L. Binggeli (Paul's Dairy, tenant)	8	6
22			
23	Lynwood Gardens Mutual Water Company	205	164
24	Lynwood Park Mutual Water Company	278	222
25	Jerome D. Mack and Joyce Mack (see listing under name of D. S. Moss)		
26			
27	Roberta M. Magnusson (King Kelly Marmalade Co., tenant)	15	12
28	Anthony Mancebo	0	0

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	<u>Name</u> Lorraine K. Meyberg (L. Kauffman Company, Inc., tenant) Midland Park Water trust Midway Gardens Mutual Association Harry C. Miersma and Dorothy L. Miersma Henry Miersma and Susan M. Miersma Willis L. Miller George Mimaki, Mitsuko Mimaki, Yoshio Kono and Barbara Kono (Loma Floral Company, tenant) Ray Mitchell (see listing under name of Corporation of the Presiding Bishop of the Church of Jesus Christ of Latter Day Saints; and also listing under name of Frank Ruggieri) Fumiko Mitsuuchi, aka Mary Mitsuuchi (Z. Van Spanje, tenant as to one acre foot) Yoneichi Miyasaki Glenn Miyoshi, Yosaku Miyoshi, Masayo Miyoshi, Haruo Miyoshi, and Masaru Miyoshi, dba Miyoshi Bros. Jean Mocho and Michel Plaa Modern Imperial Company Montebello Land and Water Company Monterey Acres Mutual Water Company Nicholaas J. Moons (see listing under name of Mrs. Oraan Kinne) Alexander Moore and Betty L. Moore Neal Moore Alyce Mooschekian Reuben Mooschekian	<u>Total Water Right</u> 81 71 59 12 7 0 2 14 0 10 11 71 1,990 128 16 0 0 15	<u>Allowed Pumping Allocation</u> 65 57 47 10 6 0 2 11 0 8 9 57 1,592 102 13 0 0 12
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	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	William R. Morris	1	1
4	(see also listing under name of Associated Southern Investment Company)		
5	D. S. Moss, Lillian Moss, Jerome D. Mack, and Joyce Mack	5	4
6			
7	Mountain View Dairies, Inc.	68	54
8			
9	Kiyoshi Murakawa and Shizuko Murakawa	0	0
10			
11	Daisaku Murata, Fui Murata, Hatsuye Murata, Kenji Murata, Setsuko Murata, and Takeo Murata	15	12
12			
13	Kenji Murata (see listing under name of Southern California Edison Company)		
14	Elmo D. Murphy and Evelene B. Murphy (Morris Weiss, Bessie Weiss, Wilbur Mellema, and Mary Mellema, tenants)	23	18
15			
16	Murphy Ranch Mutual water company	576	461
17			
18	Etta Murr	3	3
19			
20	R. B. Murray and Gladys J. Murray	0	0
21			
22	Tony G. Mussachia and Anna M. Mussachia	10	8
23			
24	Mary Myrndahl (Nick P. Koot, tenant)	11	9
25			
26	Sam Nakamura and Tokiko Nakamura	2	2
27			
28	Leo Nauta (see listing under name of John Osinga)		
29			
30	Pete Nauta (see listing under name of Jacob Vandenberg)		
31			
32	Fred C. Nelles School for Boys of the State of California Department of the Youth Authority (see listing under name of State of California)		
33			
34	Otelia Nelson and Robert Nelson (Shelter Superior Dairy, tenant)	14	11
35			
36	Simon S. Niekerk and Rose Niekerk (Niekerk Hay Company, tenant)	3	3
37			
38			

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	Norris-Thermador Corporation	172	138
4	North Gate Gardens Water Co.	60	48
5	Norwalk-La Mirada City School District	360	288
6	Norwalk Mobile Lodge (see listing under name of Elizabeth Flesch)		
7			
8	Mabel E. Nottingham (Leslie Nottingham, tenant)	25	20
9	William Offinga & Son, including Sidney Offinga (see listing under name of Henry Boer)		
10			
11	Olive Lawn Memorial Park, Inc.	14	11
12	John Oord	0	0
13	Marinus Oosten and Anthonia Oosten	16	13
14	Ralph Oosten and Caroline Oosten (Frank Lorenz, tenant as to 13 acre feet of water right and 10 acre feet of allowed pumping allocation)	51	41
15			
16	Orange County Nursery, Inc. (see also: listing under name of Ruth E. Dever; listing under name of Jake J. Luetto; and listing under name of Mary Ravera)	16	13
17			
18			
19			
20	Orchard Dale County Water District (Base Water Right - 1,382)	1,384	1,107
21	Orchard Park Water Club, Inc.	50	40
22	Oriental Foods, Inc.	34	27
23	Orla Company (John D. Westra, tenant)	7	6
24	Viva Ormonde (see listing under name of Hank Van Dam)		
25			
26	Pablo Oropeza and Aurelia G. Oropeza (Pablo Oropeza, Jr., tenant) (see also listing under name of Tarr and McComb Oil Company, Ltd.)		
27			
28	John Osinga (Leo Nauta, tenant)	6	5

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	Manuel B. Ourique (see listing under name of John Borges)		
4	Owl Constructors	20	16
5	Pacific Electric Railway Company		
6	(Gerrit Van Leeuwen of 15405 Shoemaker Road, Norwalk, tenant as to 11 acre		
7	feet of right and 9 acre feet of allowed pumping allocation)	15	12
8	Packers Mutual Water Company	43	34
9	Edward G. Paddison and Grace M. Paddison	17	14
10	Paramount Farms (see listing under name of Harry N. Goedhart)		
11			
12	Paramount County Water District	2,967	2,374
13	Paramount Unified School District	58	46
14	Park Water Company	24,592	19,674
15	W. J. Parsonson	0	0
16	Rudolph Pasma and Frances C. Pasma	10	8
17	Paul's Dairy (see listing under name of Paul H. Lussman, Jr.)		
18	Mrs. La Verne Payton	1	1
19	Peerless Land & Water Co., Inc.	1,232	986
20	J. C. Pereira, Jr. and Ezaura Pereira	34	27
21	Sam Perricone and Louis Romoff (Luer Packing Co., tenant)	107	86
22	Peterson Manufacturing Co., Inc.	73	58
23	Phelps Dodge Copper Products Corporation	390	312
24	Pico County Water District	3,741	2,993
25	Piedmont Heights Water Club	7	6
26	Lucille C. Pimental (Richard Pimental and Pimental Dairy, tenants)	16	13
27			
28			

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	Zelma Ravera	2	2
4	Rawlins Investment Corporation (Rockview Milk Farms, Inc., tenant)	66	53
5	Hal Rees	0	0
6	Reeves Tract Water Company	36	29
7	Clarence Reinalda	0	0
8	Reliance Dairy Farms	122	98
9	Research Building Corporation		
10	(Dr. Russell B. Clark, tenant)	11	9
11	Richfield Oil Corporation	71	57
12	Richland Farm Water Company	216	173
13	George Rietkerk and Cornelia Rietkerk	7	6
14	Rio Hondo Country Club (see listing under name of James L. Stamps)		
15	Erasmio Rios (see listing under name of Esther Salcido)		
16			
17	Jesus Rios (see listing under name of Esther Salcido)		
18	Frank J. Rocha, Jr. and Elsie M. Rocha	13	10
19	Rockview Milk Farms, Inc. (see listing under name of Rawlins Investment Corporation)		
20			
21	John Rodrigues, Emily S. Rodrigues, and John Rodrigues, Jr. (see also below)	5	4
22	John Rodrigues and John Rodrigues Jr.	1	1
23	Frieda Roethlisberger (see listing under name of Joe Luond)		
24	Patricia L. Davis Rogers, aka Patricia L. Davis	2	2
25			
26	The Roman Catholic Archbishop of Los Angeles, a corporation sole	426	341
27			
28			

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	Gladys Marie Romberg (see listing under name of Bernard William Bootsma)		
4	Alois M. Rombout	0	0
5	Louis Romoff (see listing under name of Sam Perricone)		
6			
7	Elvira C. Rosales	3	3
8	Frank J. Ross	2	2
9	Ernest D. Roth and Eva Roth (see listing under name of Elizabeth Flesch)		
10			
11	Ed Roukema	0	0
12	Herbert N. Royden	31	25
13	Ruchti Brothers	31	25
14	Frank Ruggieri and Vada Ruggieri (see additional listing below)	1	1
15	Frank Ruggieri and Vada Ruggieri; David Seldeen and Fay Seldeen (Ray Mitchell, tenant)	23	18
16			
17	Thomas S. Ryan and Dorothy J. Ryan	19	15
18	Sam Rypkema and Tena Rypkema	8	6
19	St. John Bosco School	53	42
20	James H. Saito and Yoshino Saito	2	2
21	Esther Salcido and Jesus Rios (Erasmus Rios, tenant)	3	3
22			
23	San Gabriel Valley Water Company	6,828	5,462
24	Joe Santana and Palmira Santana	10	8
25	Sasaki Bros. Ranch, Inc.	32	26
26	Sativa L. A. County Water District	592	474
27	Ben Schilder, Jr. and Anna Schilder	28	22
28	Carl Schmid and Olga Schmid	18	14

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
	Mrs. A. Schuur	0	0
	John Schuurman and Isabel Schuurman (James Sieperda, tenant)	15	12
	David Seldeen and Fay Seldeen (see listing under name of Frank Ruggieri)		
	Maurice I. Sessler	8	6
	Chris Shaffer and Celia I. Shaffer	8	6
	Shayman & Wharram, a partnership, consisting of John W. Shayman and Francis O. Wharram	2	2
	Shell Oil Company (see listing under name of Margaret F. Slusher)		
	Shelter Superior Dairy (see listing under name of Otelia Nelson)		
	Tadao Shiba and Harume Shiba, Susumu Shiba, and Mitsuko Shiba	7	6
	Yahiko Shiozaki and Kiyoko Shiozaki; Ken Shiozaki and Grace Shiozaki	6	5
	Shore-Plotkin Enterprises, Inc. (Shore-Calnevar, Inc., tenant)	0	0
	J. E. Siemon	15	12
	James Sieperda (see listing under name of John Schuurman)		
	Sierra Restaurant Corporation	0	0
	Frank Simas and Mabel Simas (Frank Pires, tenant)	11	9
	Bennett E. Simmons and Alice Lorraine Simmons, George K. Simmons and Doris June Simmons (Bell Trailer City, tenant)	41	33
	Margaret F. Slusher (Shell Oil Company, tenant)	7	6
	Lester W. Smith and Donald E. Smith (Lester W. Smith Dairy, tenant)	20	16

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
	Wirt Smith	14	11
	William Smoorenburg and Nick J. Loogman (Smoorenburg & Loogman, a partnership of William Smoorenburg and Nick J. Loogman, operating well facility)	21	17
	Leo Snozzi and Sylvia Snozzi	52	42
	Socony Mobil Oil Company, Inc.	172	138
	Somerset Mutual Water Company	2,744	2,195
	South Montebello Irrigation District	1,238	990
	Southern California Edison Company (Vernon Bacon; Chikami Bros. Farming, consisting of Jack Chikami and Shigeru Chikami; Louis F. De Martini; Armand Lescoulie; C. D. Webster; Kenji Murata; Glenn F. Spiller and Jean H. Spiller; George Yamamoto and Alice Yamamoto, conducting business as Fumi Garden Farms, Inc.; and Salvatore Gutierrez, tenants and licenses)	816	653
	Southern California Water Company	18,937	15,150
	Southern Service Company, Ltd.	81	65
	Henrietta Southfield	4	4
	John Southfield	0	0
	Southwest Water Company	2,895	2,316
	Manuel M. Souza, Sr.; Manuel M. Souza, Jr.; Frank M. Souza and Louie J. Souza (see listing under name of Jack Gonsalves)		
	Nelson Souza and Mary Souza	12	10
	Glenn F. Spiller and Jean H. Spiller (see also listing under name of Southern California Edison company)	24	19
	Farah Sprague	3	3

1	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
2			
3	Herman F. Staat and Charlotte H. Staat	2	2
4	James L. Stamps, as to an undivided 80% interest; Addie L. Enfield, as 5 to an undivided 20% interest (Rio 6 Hondo Country Club, tenant)	443	354
7	Standard Oil Company of California	118	94
8	J. F. Standley and Myrtle M. Standley	1	1
9	Star Dust Lands, Inc.	85	68
10	State of California (included herein are 11 water rights of Fred C. Nelles School 12 for Boys of the State of California 13 Department of the Youth Authority; 14 Metropolitan State Hospital of the 15 State of California Department of 16 Mental Hygiene; and District VII, 17 Division of Highways of the State of 18 California Department of Public Works)	757	606
15	Stauffer Chemical Company	181	145
16	John Steele and Clara D. Steele	4	4
17	Steve Stefani, Jr.	0	0
18	Steve Stefani, Sr., and Dora Stefani (Henry Baar and Fred Fekkes, tenants)	38	30
19	Andrew Stellingwerf	0	0
20	Henry Stellingwerf and Jeanette 21 Stellingwerf	14	11
22	Henry Sterk and Betty S. Sterk	114	91
23	V. C. Stiefel	3	3
24	Sophia J. Stockmal and John F. Stockmal	3	3
25	William Thomas Stover and Gertrude D. 26 Stover	3	3
26	Louis Struikman and Alice Struikman (Louis 27 Struikman and Pete Struikman dba Louis 28 Struikman and Son, tenants as to 43 acre feet of water right and 34 acre feet of allowed pumping allocation; and Sidney		

1	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
2			
3	Van Dyke, tenant as to 10 acre feet of water right and 8 acre feet of allowed pumping allocation) (see also below)	53	42
4			
5	Louis Struikman and Peter Struikman	3	3
6	Cornelius Struikmans and Ida Struikmans	9	7
7	Henry Struikmans and Nellie Struikmans	13	10
8	Henry Struikmans, Jr.	0	0
9	Suburban Mutual Water Co.	0	0
10	Suburban Water Systems	3,666	2,933
11	Kazuo Sumida	2	2
12	Sun Coast Development Company	0	0
13	Sun Holding Corporation (see listing under name of Mausoleum Park, Inc.)		
14			
15	Sunnyside Mausoleum Company	60	48
16	Sunset Cemetery Association	26	21
17	E. A. Sutton and Ramona Sutton	39	31
18	Swift & Company	2,047	1,638
19	Roy Sybrandy and Anne Sybrandy	29	23
20	Sykes Realty Co., Floyd G. Marcusson and Albert C. Sykes	2	2
21	Andy Sytsma and Dorothy Sytsma (Albert Sytsma and Robert Sytsma, doing		
22	business as Sytsma Bros., tenants)	20	16
23	Tarr and McComb Oil Company, Ltd. (Pablo Oropeza, tenant)	86	69
24			
25	Roy Tashima and Shigeo Tashima	1	1
26	Fay G. Tawzer and Lawrence R. Tawzer (see listing under name of Fern Ethyl Gordon)		
27	Dorothy Taylor	0	0
28	Quentin D. Taylor	0	0

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	Carl Teixeira and Evelyn Teixeira	11	9
4	George S. Teixeira and Laura L. Teixeira	17	14
5	Harm Te Velde and Zwaantina Te Velde	253	202
6	Theo Hamm Brewing Co.	150	120
7	Thirty-Three Forty-Five East Forty-Fifth Street, Inc.	17	14
8	O. T. Thompson and Drusilla Thompson	20	16
9			
10	Tract Number One Hundred and Eighty Water Company	1,526	1,221
11	Tract 349 Mutual Water Company	529	423
12	Fred Troost and Annie Troost	53	42
13	Frank W. Tybus and June E. Tybus (see listing under name of Lakewood Pipe Co.)		
14			
15	Uehling Water Company, Inc.	846	677
16	Union Development Co., Inc.	12	10
17	Union Oil Company of California (see listing under name of Florence Hellman Ehrman)		
18			
19	Union Pacific Railroad Company	656	525
20	Union Packing Company	100	80
21	United California Bank (see listing under name of Huntley L. Gordon)		
22	United Dairymen's Association	1	1
23	United States Gypsum Company	1,581	1,265
24	United States Rubber Company	820	656
25	United States Steel Corporation	176	141
26	Masaru Uyeda, Hajime Hirashima, and Tadashi Uyeda	12	10
27			
28	G. A. Van Beek (see listing under name of Art Hop, Sr.)		

	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	Bas Van Dam (see listing under name of Gertrude Van Dam)		
4			
5	Carrie Agnes Van Dam (see listing under name of Bernard William Bootsma)		
6	Cornelius A. Van Dam and Florence Van Dam	24	19
7			
8	Dick Van Dam, Jr.	0	0
9	Gerrit Van Dam and Grace Van Dam (William De Kriek, tenant)	13	10
10			
11	Gertrude Van Dam (Bas Van Dam, tenant as to 29 acre feet of water right and 23 acre feet of allowed pumping right; and Henry Van Dam, tenant as to 19 acre feet of water right and 15 acre feet of allowed pumping right)	48	38
12			
13			
14	Hank Van Dam and Jessie Van Dam (Viva Ormonde, tenant)	22	18
15			
16	Henry Van Dam (see listing under name of Gertrude Van Dam)		
17	Jacob Vandenberg and Anna Vandenberg (Pete Nauta, tenant)	8	6
18			
19	August Vandenburg, Ben W. Vandenburg, and Andrew W. Vandenburg (Jan Bokma, tenant)	6	5
20			
21	John Van Den Raadt	4	4
22	M. Vander Dussen and Aletta C. Vander Dussen	12	10
23	Sybrand Vander Dussen and Johanna Vander Dussen	23	18
24			
25	Helen Goedhart Van Eik (see listing under name of Harry N. Goedhart)		
26			
27	Cornelius Vander Eyk, aka Case Vander Eyk, and Nelly Vander Eyk, aka Nellie Vander Eyk	7	6
28			
	George Van Der Ham and Alice Van Der Ham	10	8

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
	Huibert Vander Ham and Henrietta Vander Ham	33	26
	Joe Vanderham and Cornelia Vanderham	13	10
	John Vanderham and Nell M. Vanderham	20	16
	Charlie Vander Kooi and Lena Mae Vander Kooi (see also listing under name of Michel Bordato)	13	10
	Pete Vander Kooi (see listing under name of Ed Haakma)		
	Bert Vander Laan and Stella Vander Laan	10	8
	Matt Vander Sys and Johanna Vander Sys	13	10
	Bill Vander Vegt and Henny Vander Vegt	18	14
	George Vander Vegt and Houjke Vander Vegt	12	10
	Harry J. Vander Wall and Marian E. Vander Wall	12	10
	Bert Vande Vegte and Lillian Vande Vegte	1	1
	Anthony Van Diest	0	0
	Jennie Van Diest, as to undivided 1/3 interest; Ernest Van Diest and Rena Van Diest, as to undivided 1/3 interest; and Cornelius Van Diest and Anna Van Diest, as to undivided 1/3 interest. (Van Diest Dairy, tenant)	20	16
	Katrena Van Diest and/or Margaret Van Diest	92	74
	Henry W. Van Dyk (see listing under name of Henrietta Veenendaal)		
	Wiechert Van Dyk and Jennie Van Dyk	13	10
	Corty Van Dyke (see listing under name of Charles E. Adams)		
	Sidney Van Dyke (see listing under name of Louis Struickman)		

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	<u>Name</u> William Van Foeken Jake Van Haaster and Gerarda Van Haaster Arie C. Van Leeuwen (see listing under name of Sam Bouman) Gerrit Van Leeuwen of 15405 Shoemaker Road, Norwalk (see listing under name of Pacific Electric Railway Company) Henry Van Leeuwen and Caroline P. Van Leeuwen; Gerrit Van Leeuwen of 5948 Lorelei Street, Bellflower, and Ellen Van Leeuwen Jake Van Leeuwen, Jr. and Cornelia J. Van Leeuwen (James C. Boogerd and Jake Van Leeuwen, Jr. dba Van Leeuwen & Boogerd, tenants) Anthony R. Van Loon (see listing under name of Henry Van Ruiten) John Van Nierop and Lily E. Van Nierop Henry Van Ruiten and Mary A. Van Ruiten, as to undivided 1/2 interest; and Jake Van Ruiten and Jacoba Van Ruiten, as to undivided 1/2 interest (W. P. Jordan, Anthony R. Van Loon, and Jules Wesselink, tenants) Pete Van Ruiten and Mary Van Ruiten (for purposes of clarification, this Mary Van Ruiten is also known as Mrs. Pete Van Ruiten and is not the same individual as sued herein as Mary A. Van Ruiten, who is also known as Mrs. Henry G. Van Ruiten) Z. Van Spanje (see listing under name of Fumiko Mitsuuchi) Evert Veenendaal and Gertrude Veenendaal (see listing under name of Earl Haringa) Henrietta Veenendaal (Henry W. Van Dyk, tenant)	<u>Total Water Right</u> 0 0 1 9 0 88 38 10	<u>Allowed Pumping Allocation</u> 0 0 1 7 0 70 30 8
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	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
1			
2			
3	Henry Veenendaal and Henrietta Veenendaal	8	6
4	Joe H. Veenendaal and Margie Veenendaal	34	27
5	John Veenendaal	0	0
6	Vehicle Maintenance & Painting Corporation (see listing under name of Nicholas 7 C. Conteas)		
8	Salvador Velasco	16	13
9	Mike Veldhuis	0	0
10	Albert Veldhuizen and Helen Veldhuizen	23	18
11	Jack Verbree	0	0
12	Mrs. Klaasje Verburg (Leon Verburg to extent of interest under contract 13 to purchase)	12	10
14	John C. Verhoeven and Sadie Verhoeven	25	20
15	Joseph C. Vierra and Caroline Vierra (Joseph C. Vierra and William J. 16 Vierra, doing business as Vierra & Vierra, tenants)	13	10
17	Sieger Vierstra and Nellie G. Vierstra (Jacob J. Bosma, tenant)	12	10
18			
19	Virginia Country Club of Long Beach	340	272
20	Roy Visbeek	0	0
21	Louis Visser	9	7
22	Vista Hill Psychiatric Foundation	39	31
23	Louie Von Ah	0	0
24	Walnut Irrigation District	154	123
25	Walnut Park Mutual Water Co.	1,245	996
26	C. D. Webster (see also listing under name of 27 Southern California Edison Company)	1	1
28			

1	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
2			
3	Morris Weiss and Bessie Weiss (Wilbur Mellema, tenant)	20	16
4	(also see listings under names of Elmo D. Murphy and Emma Engler)		
5			
6	Wells Fargo Bank as Executor of Estate of Edward H. Heller, Deceased, and as Executor of Estate of Lloyd W. Dinkelspiel, Deceased, and as Trustee under Trust created by the Will of Florence H. Dinkelspiel, Deceased (see listing under name of Florence Hellman Ehrman)		
7			
8			
9			
10	Jules Wesselink (see listing under name of Henry Van Ruiten)		
11			
12	West Gateway Mutual Water Co.	105	84
13	Henry Westra and Hilda Westra	40	32
14	John D. Westra (see listing under name of Orla Company)		
15	Francis O. Wharram (see listing under name of Shayman & Wharram)		
16			
17	Whittier Union High School District	125	100
18	Arend Z. Wier	14	11
19	H. Wiersema, aka Harm Wiersema and Pearl Wiersema	16	13
20	William Wiersma and Elbra Wiersma	7	6
21	Richard Wigboly (see listing under name of Central Manufacturing District, Inc.)		
22			
23	Mary Wilcox (see listing under name of Jenkins Realty Mutual Water Co.)		
24			
25	Ralph P. Williams and Mary Williams	14	11
26	Wilshire Oil Company of California	1,795	1,436
27	Melvin L. Wilson and Marie Wilson	1	1
28	D. P. Winslow and Dorothy C. Winslow (Berton Elson, tenant)	15	12

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	<u>Name</u>	<u>Total Water Right</u>	<u>Allowed Pumping Allocation</u>
	Helene K. Winters	1	1
	Fred E. Wiseman and Grayce Anna Wiseman	2	2
	Helen Wolfsberger and Christine Joseph	2	2
	Volney Womack	0	0
	Cho Shee Woo (Hong Woo and Ngorn Seung Woo, as agents of property for Cho Shee Woo)	20	16
	Gerrit Wybenga and Rena Wybenga	10	8
	George Yamamoto and Alice Yamamoto, also known as Fumi Yamamoto (Fumi Garden Farms, Inc., tenant) (see also listing under name of Southern California Edison Company)	17	14
	Paul N. Yokota and Miyo Yokota	4	4
	Minoru Yoshijima (see listing under name of Kazuo Hatanaka)		
	Frank Yoshioka	0	0
	Maxine Young	3	3
	Mrs. A. Zandvliet also known as Anna A. Zandvliet	8	6
	Arnold Zeilstra and Nellie Zeilstra	6	5
	George Zivelonghi and Antonio Zivelonghi	121	97
	Dick Zuidervaart and Janna Zuidervaart (Artesia Milling Company, tenant)	1	1
	Andy Zylstra	0	0
	Zylstra Bros. a partnership consisting of Lammert Zylstra and William Zylstra (see listing under name of John H. Coito)		
	John Zylstra and Leonard J. Zylstra, doing business as The Zylstra Dairy	22	18
	Leonard Zylstra (not the same person as Leonard J. Zylstra)	0	0

1 4. Transition in Administrative Year - Application.

2 "Year" and "Administrative Year" as used throughout this judgment
3 shall mean the water year; provided that with the first fiscal
4 year (July 1 - June 30) commencing at least four months after the
5 "Amended Judgment" became final, and thereafter, said words shall
6 mean the fiscal year. Since this will provide a transitional
7 Administrative year of nine months, October 1 - June 30, ("short
8 year" hereafter), notwithstanding the finding and determinations
9 in the annual Watermaster report for the then last preceding
10 water year, the Allowed Pumping Allocations of the parties and
11 the quantity which Defendant City of Los Angeles is annually
12 permitted to extract from Central Basin for said short year shall
13 be based on three-quarters of the otherwise allowable quantity.
14 During said short year, because of hardships that might otherwise
15 result, any overextractions by a party shall be deemed pursuant
16 to paragraph 2, Subpart B of Part III of this judgment (p. 61),
17 and it shall be deemed that the Watermaster has made the
18 determination of unreasonable hardship to which reference is
19 therein made.

20 II. APPOINTMENT OF WATERMASTER; WATERMASTER ADMINI-
21 STRATION PROVISIONS. Department of Water Resources of the State
22 of California is hereby appointed Watermaster, for an indefinite
23 term, but subject to removal by the Court, to administer this
24 judgment and shall have the following powers, duties and
25 responsibilities:

- 26 1. Duties, Powers and Responsibilities of Watermaster.
27 In order to assist the Court in the administration and enforce-
28 ment of the provisions of this judgment and to keep the Court

1 fully advised in the premises, the Watermaster shall have the
2 following duties, powers and responsibilities in addition to
3 those before or hereafter provided in this judgment:

4 (a) Watermaster May Require Reports, Information and
5 Records. To require of parties the furnishing of such reports,
6 information and records as may be reasonably necessary to
7 determine compliance or lack of compliance by any party with the
8 provisions of this judgment.

9 (b) Requirement of Measuring Devices. To require all
10 parties or any reasonable classification of parties owning or
11 operating any facilities for the extraction of ground water from
12 Central Basin to install and maintain at all times in good
13 working order at such party's own expense, appropriate measuring
14 devices at such times and as often as may be reasonable under the
15 circumstances and to calibrate or test such devices.

16 (c) Inspections by Watermaster. To make inspections
17 of ground water production facilities and measuring devices at
18 such times and as often as may be reasonable under the circum-
19 stances and to calibrate or test such devices.

20 (d) Annual Report. The Watermaster shall prepare,
21 file with the Court and mail to each of the parties on or before
22 the 15th day of the fourth month following the end of the
23 preceding Administrative year, an annual report for such year,
24 the scope of which shall include but not be limited to the
25 following:

- 26 1. Ground Water Extractions
- 27 2. Exchange Pool Operation
- 28 3. Use of Imported Water

- 1 4. Violations of Judgment and Corrective Action Taken
- 2 5. Change of Ownership of Total Water Rights
- 3 6. Watermaster Administration Costs
- 4 7. Recommendations, if any.

5 (e) Annual Budget and Appeal Procedure in Relation
6 Thereeto. The Watermaster shall annually prepare a tentative
7 budget for each Administrative year stating the anticipated
8 expense for administering the provisions of this judgment. The
9 Watermaster shall mail a copy of said tentative budget to each of
10 the parties hereto at least 60 days before the beginning of each
11 Administrative year. For the first Administrative year of
12 operation under this judgment, if the Watermaster is unable to
13 meet the above time requirement, the Watermaster shall mail said
14 copies as soon as possible. If any party hereto has any
15 objection to said tentative budget, it shall present the same in
16 writing to the Watermaster within 15 days after the date of
17 mailing of said tentative budget by the Watermaster. If no
18 objections are received within said period, the tentative budget
19 shall become the final budget. If objections are received, the
20 Watermaster shall, within 10 days thereafter, consider such
21 objections, prepare a final budget and mail a copy thereof to
22 each party hereto, together with a statement of the amount
23 assessed to each party. Any party may apply to the Court within
24 15 days after the mailing of such final budget for a revision
25 thereof based on specific objections thereto. The parties hereto
26 shall make the payments otherwise required of them to the
27 Watermaster even though such a request for revision has been
28 filed with the Court. Upon any revision by the Court the

1 Watermaster shall either remit to the parties their prorata
2 portions of any reduction in the budget, or credit their accounts
3 with respect to their budget assessments for the next ensuing
4 Administrative year, as the Court shall direct.

5 The amount to be assessed to each party shall be
6 determined as follows: If that portion of the final budget to be
7 assessed to the parties is equal to or less than \$20.00 per party
8 then the cost shall be equally apportioned among the parties. If
9 that portion of the final budget to be assessed to parties is
10 greater than \$20.00 per party then each party shall be assessed a
11 minimum of \$20.00. The amount of revenue expected to be received
12 through the foregoing minimum assessments shall be deducted from
13 that portion of the final budget to be assessed to the parties
14 and the balance shall be assessed to the parties having Allowed
15 Pumping Allocations, such balance being divided among them
16 proportionately in accordance with their respective Allowed
17 Pumping Allocations.

18 Payment of the assessment provided for herein, subject
19 to adjustment by the Court as provided, shall be made by each
20 such party prior to beginning of the Administrative year to which
21 the assessment relates, or within 40 days after the mailing of
22 the tentative budget, whichever is later. If such payment by any
23 party is not made on or before said date, the Watermaster shall
24 add a penalty of 5% thereof to such party's statement. Payment
25 required of any party hereunder may be enforced by execution
26 issued out of the Court, or as may be provided by order herein-
27 after made by the Court, or by other proceedings by the
28 Watermaster or by any party hereto on the Watermaster's behalf.

1 Any money unexpended at the end of any Administrative
2 year shall be applied to the budget of the next succeeding
3 Administrative year.

4 Notwithstanding the above, no part of the budget of the
5 Watermaster shall be assessed to the Plaintiff District or to any
6 party who has not extracted water from Central Basin for a period
7 of two successive Administrative years prior to the Administra-
8 tive year in which the tentative budget should be mailed by the
9 Watermaster under the provisions of this subparagraph (e).

10 (f) Rules. The Watermaster may adopt and amend
11 from time to time such rules as may be reasonably necessary to
12 carry out its duties, powers and responsibilities under the
13 provisions of this judgment. The rules shall be effective on
14 such date after the mailing thereof to the parties as is
15 specified by the Watermaster, but not sooner than 30 days after
16 such mailing.

17 2. Use of Facilities and Data Collected by Other
18 Governmental Agencies. The Watermaster is directed not to
19 duplicate the collection of data relative to conditions of the
20 Central Basin which is then being collected by one or more
21 governmental agencies, but where necessary the Watermaster may
22 collect supplemental data. Where it appears more economical to
23 do so, the Watermaster is directed to use such facilities of
24 other governmental agencies as are available to it under either
25 no cost or cost agreements with respect to the receipt of
26 reports, billings to parties, mailings to parties, and similar
27 matters.
28

1 3. Appeal from Watermaster Decisions Other Than With
2 Respect to Budget. Any party interested therein who has
3 objection to any rule, determination, order or finding made by
4 the Watermaster, may make objection thereto in writing delivered
5 to the Watermaster within 30 days after the date the Watermaster
6 mails written notice of the making of such rule, determination,
7 order or finding, and within 30 days after such delivery the
8 Watermaster shall consider said objection and shall amend or
9 affirm his rule, determination, order or finding and shall give
10 notice thereof to all parties. Any such party may file with the
11 Court within 30 days from the date of said notice any objection
12 to such rule, determination, order or finding of the Watermaster
13 and bring the same on for hearing before the Court at such time
14 as the Court may direct, after first having served said objection
15 upon all other parties. The Court may affirm, modify, amend or
16 overrule any such rule, determination, order or finding of the
17 Watermaster. The provisions of this paragraph shall not apply to
18 budgetary matters, as to which the appellate procedure has
19 heretofore been set forth. Any objection under this paragraph
20 shall not stay the rule, determination, order or finding of the
21 Watermaster. However, the Court, by ex parte order, may provide
22 for a stay thereof on application of any interested party on or
23 after the date that any such party delivers to the Watermaster
24 any written objection.

25 4. Effect of Non-Compliance by Watermaster With Time
26 Provisions. Failure of the Watermaster to perform any duty,
27 power or responsibility set forth in this judgment within the
28 time limitation herein set forth shall not deprive the

1 Watermaster of authority to subsequently discharge such duty,
2 power or responsibility, except to the extent that any such
3 failure by the Watermaster may have rendered some otherwise
4 required act by a party impossible.

5 III. PROVISIONS FOR PHYSICAL SOLUTION TO MEET THE WATER
6 REQUIREMENTS IN CENTRAL BASIN. In order to provide flexibility
7 to the injunction set forth in Part I of the judgment, and to
8 assist in a physical solution to meet water requirements in
9 Central Basin, the injunction so set forth is subject to the
10 following provisions.

11 A. Carryover of Portion of Allowed Pumping Allocation.

12 (1) Each party adjudged to have a Total Water
13 Right or water rights and who, during a particular
14 Administrative year, does not extract from Central Basin a
15 total quantity equal to such party's Allowed Pumping
16 Allocation for the particular Administrative year, less any
17 allocated subscriptions by such party to the Exchange Pool,
18 or plus any allocated requests by such party for purchase of
19 Exchange Pool water, is permitted to carry over (the "One
20 Year Carryover") from such Administrative year the right to
21 extract from Central Basin in the next succeeding
22 Administrative year so much of said total quantity as it did
23 not extract in the particular Administrative year, not to
24 exceed 20% of such party's Allowed Pumping Allocation, or 20
25 acre feet, whichever of said 20% or 20 acre feet is the
26 larger.

27 (2) Following the declaration of a Declared Water
28 Emergency and until the Declared Water Emergency ends either

1 by expiration or by resolution of the Board of Directors of
2 the Central and West Basin Water Replenishment District,
3 each party adjudged to have a Total Water Right or water
4 rights and who, during a particular Administrative year,
5 does not extract from Central Basin a total quantity equal
6 to such party's Allowed Pumping Allocation for the
7 particular Administrative year, less any allocated
8 subscriptions by such party to the Exchange Pool, or plus
9 any allocated requests by such party for purchase of
10 Exchange Pool water, is permitted to carry over (the
11 "Drought Carryover") from such Administrative year the right
12 to extract from Central Basin so much of said total quantity
13 as it did not extract during the period of the Declared
14 Water Emergency, to the extent such quantity exceeds the One
15 Year Carryover, not to exceed an additional 35% of such
16 party's Allowed Pumping Allocation, or additional 35 acre
17 feet, whichever of said 35% or 35 acre feet is the larger.
18 Carryover amounts shall first be allocated to the One Year
19 Carryover and any remaining carryover amount for that year
20 shall be allocated to the Drought Carryover.

21 (3) No further amounts shall be added to the
22 Drought Carryover following the end of the Declared Water
23 Emergency, provided however that in the event another
24 Declared Water Emergency is declared, additional Drought
25 Carryover may be added, to the extent such additional
26 Drought Carryover would not cause the total Drought
27 Carryover to exceed the limits set forth above.
28

1 (4) The Drought Carryover shall be supplemental
2 to and shall not affect any previous drought carryover
3 acquired by a party pursuant to previous order of the court.

4 B. When Over-extractions May be Permitted.

5 1. Underestimation of Requirements for Water. Any
6 party hereto having an Allowed Pumping Allocation and not in
7 violation of any provision of this judgment may extract in an
8 Administrative year an additional quantity of water not to
9 exceed: (a) 20% of such party's Allowed Pumping Allocation or 20
10 acre feet, whichever is greater, and (b) any amount in addition
11 thereto which may be approved in advance by the Watermaster.

12 2. Reductions in Allowed Pumping Allocations in
13 Succeeding Years to Compensate for Permissible Overextractions.

14 Any such party's Allowed Pumping Allocation for the following
15 Administrative year shall be reduced by the amount over-extracted
16 pursuant to paragraph 1 above, provided that if the Watermaster
17 determines that such reduction in the party's Allowed Pumping
18 Allocation in one Administrative year will impose upon such a
19 party an unreasonable hardship, the said reduction in said
20 party's Allowed Pumping Allocation shall be prorated over a
21 period of five (5) Administrative years succeeding that in which
22 the excessive extractions by the party occurred. Application for
23 such relief to the Watermaster must be made not later than the
24 40th day after the end of the Administrative year in which such
25 excessive pumping occurred. Watermaster shall grant such relief
26 if such over-extraction, or any portion thereof, occurred during
27 a period of Declared Water Emergency.
28

1 3. Reductions in Allowed Pumping Allocations for the
2 Next Succeeding Administrative Year to Compensate for
3 Overpumping. Whenever a party over-extracts in excess of 20% of
4 such party's Allowed Pumping Allocation, or 20 acre feet,
5 whichever is greater, and such excess has not been approved in
6 advance by the Watermaster, then such party's Allowed Pumping
7 Allocation for the following Administrative year shall be reduced
8 by an amount equivalent to its total over-extractions in the
9 particular Administrative year in which it occurred.

10 4. Reports of Certain Over-extractions to the Court.
11 Whenever a party over-extracts in excess of 20% of such party's
12 Allowed Pumping Allocation, or 20 acre feet, whichever is
13 greater, without having obtained prior approval of the
14 Watermaster, such shall constitute a violation of the judgment
15 and the Watermaster shall make a written report to the Court for
16 such action as the Court may deem necessary. Such party shall be
17 subject to such injunctive and other processes and action as the
18 Court might otherwise take with regard to any other violation of
19 such judgment.

20 5. Effect of Over-extractions on Rights. Any
21 party who over-extracts from Central Basin in any Administrative
22 year shall not acquire any additional rights by reason of such
23 over-extractions; nor, shall any required reductions in
24 extractions during any subsequent years reduce the Total Water
25 Right or water rights of any party to the extent said over-
26 extractions are in compliance with paragraph 1 above.

27 6. Pumping Under Agreement With Plaintiff During
28 Periods of Emergency. Plaintiff overlies Central Basin and

1 engages in activities of replenishing the ground waters thereof.
2 Plaintiff by resolution has appropriated for use during
3 emergencies the quantity of 17,000 acre feet of imported and
4 reclaimed water replenished by it into Central Basin, and
5 pursuant to such resolution Plaintiff reserves the right to use
6 or cause the use of such quantity during such emergency periods.

7 (a) Notwithstanding any other provision of this
8 judgment, parties who are water purveyors (including successors
9 in interest) are authorized to enter into agreements with
10 Plaintiff under which such water purveyors may exceed their
11 respective Allowed Pumping Allocations for the particular
12 administrative year when the following conditions are met:

13 (1) Plaintiff is in receipt of a resolution of the
14 Board of Directors of the Metropolitan Water District
15 of Southern California ("MWD") that there is an actual
16 or immediately threatened temporary shortage of MWD's
17 imported water supply compared to MWD's needs, or a
18 temporary inability to deliver MWD's imported water
19 supply throughout its area, which will be alleviated by
20 overpumping from Central Basin.

21 (2) The Board of Directors of both Plaintiff and
22 Central Basin Municipal Water District by resolutions
23 concur in the resolution of MWD's Board of Directors,
24 and the Board of Directors of Plaintiff finds in its
25 resolution that the average minimum elevation of water
26 surface among those wells in the Montebello Forebay of
27 the Central Basin designated as Los Angeles County
28 Flood Control District Wells Nos. 1601T, 1564P, 1615P,

1 and 1626L, is at least 43.7 feet above sea level. This
2 computation shall be based upon the most recent "static
3 readings" taken, which shall have been taken not more
4 than four weeks prior. Should any of the wells
5 designated above become destroyed or otherwise be in a
6 condition so that readings cannot be made, or the owner
7 prevent their use for such readings the Board of
8 Directors of the Plaintiff may, upon appropriate
9 engineering recommendation substitute such other well
10 or wells as it may deem appropriate.

11 (3) In said resolution, Plaintiff's Board of Directors
12 sets a public hearing, and notice of the time, place
13 and date thereof (which may be continued from time to
14 time without further notice) is given by First Class
15 Mail to the current designees of the parties, filed and
16 served in accordance with Part V, paragraph 3 of this
17 Judgment. Said notice shall be mailed at least five
18 (5) days before the scheduled hearing date.

19 (4) At said public hearing, parties (including succes-
20 sors in interest) are given full opportunity to be
21 heard, and at the conclusion thereof the Board of
22 Directors of Plaintiff by resolution decides to proceed
23 with agreements under this Part III-B.

24 (5) For purposes of this Part III-B, "water purveyors"
25 mean those parties (and successors in interest) which
26 sell water to the public whether regulated public
27 utilities, mutual water companies or public entities,
28 which have a connection or connections for the taking

1 of imported water of MWD, or access to imported water
2 of MWD through a connection, and which normally supply
3 part of their customer's needs with such imported
4 water.

5 (b) All such agreements shall be subject to the fol-
6 lowing requirements, and such others as Plaintiff's Board of
7 Directors shall require:

8 (1) They shall be of uniform content except as to
9 quantity involved, and any special provisions
10 considered necessary or desirable with respect to local
11 hydrological conditions or good hydrologic practice.

12 (2) They shall be offered to all water purveyors,
13 excepting those which Plaintiff's Board of Directors
14 determine should not over pump because such over
15 pumping would occur in undesirable proximity to a sea
16 water barrier project designed to forestall sea water
17 intrusion, or within or in undesirable proximity to an
18 area within Central Basin wherein groundwater levels
19 are at an elevation where over pumping is under all the
20 circumstances then undesirable.

21 (3) The maximum terms for the agreements shall be four
22 months, which agreements shall commence on the same
23 date and end on the same date (and which may be
24 executed at any time within the four month period),
25 unless an extension thereof is authorized by the Court,
26 under Part IV of this judgment.

27 (4) They shall contain provisions that the water
28 purveyor executing the agreement pay to the Plaintiff a

1 price in addition to the applicable replenishment
2 assessment determined on the following formula. The
3 normal price per acre-foot of Central Basin Municipal
4 Water District's (CBMWD) treated domestic and municipal
5 water, as "normal" price of such category of water is
6 defined in Part C, paragraph 10 (price to be paid for
7 Exchange Pool Water) as of the beginning of the
8 contract term less the deductions set forth in said
9 paragraph 10 for the administrative year in which the
10 contract term commences. The agreement shall provide
11 for adjustments in the first of said components for any
12 proportional period of the contract term during which
13 the CBMWD said normal price is changed, and if the
14 agreement straddles two administrative years, the said
15 deductions shall be adjusted for any proportionate
16 period of the contract term in which the amount thereof
17 or of either subcomponent changes for purposes of said
18 paragraph 10. Any price for a partial acre-foot shall
19 be computed prorata. Payments shall be due and payable
20 on the principle that over extractions under the
21 agreement are of the last water pumped in the fiscal
22 year, and shall be payable as the agreement shall
23 provide.

24 (5) They shall contain provisions that:

25 (a) All of such agreements (but not less than all)
26 shall be subject to termination by Plaintiff if, in the
27 Judgment of Plaintiff's Board of Directors, the
28 conditions or threatened conditions upon which they

1 were based have abated to the extent over extractions
2 are no longer considered necessary; and (b) that any
3 individual agreement or agreements may be terminated if
4 the Plaintiff's Board of Directors finds that adverse
5 hydrologic circumstances have developed as a result of
6 over extractions by any water purveyor or purveyors
7 which have executed said agreements, or for any other
8 reason that Plaintiff's Board of Directors finds good
9 and sufficient.

10 (c) Other matters applicable to such agreements and
11 over pumping thereunder are as follows; without need for express
12 provisions in the agreements;

13 (1) The quantity of over pumping permitted shall be
14 additional to that which the water purveyor could
15 otherwise over pump under this Judgment.

16 (2) The total quantity of permitted over pumping under
17 all said agreements during said four months shall not
18 exceed Seventeen thousand (17,000) acre feet, but the
19 individual water purveyor shall not be responsible or
20 affected by any violation of this requirement. That
21 total is additional to over extractions otherwise
22 permitted under this Judgment.

23 (3) Only one four month period may be utilized by
24 Plaintiff in entering into such agreements, as to any
25 one emergency or continuation thereof declared by MWD's
26 Board of Directors under paragraph 6(a).

27 (4) Plaintiff may utilize the ex parte provisions of
28 Part IV of this Judgment in lieu of the authority

1 contained herein (which ex parte provisions are not
2 limited as to time, nature of relief, or terms of any
3 agreements), but neither Plaintiff nor any other party
4 shall utilize both as to any one such emergency or
5 continuation thereof.

6 (5) If any party claims it is being damaged or
7 threatened with damage by the over extractions by any
8 party to such an agreement, the first party or the
9 Watermaster may seek appropriate action of the Court
10 for termination of any such agreement upon notice of
11 hearing to the party complaining, to the party to said
12 agreement, to the plaintiff, and to any parties who
13 have filed a request for special notice. Any
14 termination shall not affect the obligation of the
15 party to make payments under the agreement for over
16 extractions which did occur thereunder.

17 (6) Plaintiff shall maintain separate accounting of
18 the proceeds from payments made pursuant to agreements
19 entered into under this part. Said fund shall be
20 utilized solely for purposes of replenishment in
21 replacement of waters in Central Basin and West Basin.
22 Plaintiff shall as soon as practicable cause replenish-
23 ment in Central Basin by the amounts to be overproduced
24 pursuant to this Paragraph 6 commencing at Page 63,
25 whether through spreading, injection, or in lieu
26 agreements.

27 (7) Over extractions pursuant to the agreements shall
28 not be subject to the "make up" provisions of the

1 Judgment as amended, provided that if any party fails
2 to make payments as required by the agreement,
3 Plaintiff may require such "make up" under Paragraph 3,
4 Subpart B, Part III of the Judgment (Page 62).

5 (8) Water Purveyor under any such agreement may, and
6 is encouraged to enter into appropriate arrangements
7 with customers who have water rights in Central Basin
8 under or pursuant to this Judgment whereby the Water
9 Purveyor will be assisted in meeting the objectives of
10 the agreement.

11 (9) Nothing in this Paragraph 6 limits the exercise of
12 the reserved jurisdiction of the court except as
13 provided in subparagraph (c) (4) above.

14 7. Exemption for Extractors of Contaminated
15 Groundwater. Any party herein may petition the Replenishment
16 District for a Non-consumptive Water Use Permit as part of a
17 project to remedy or ameliorate groundwater contamination. If
18 the petition is granted as set forth in this part, the petitioner
19 may extract the groundwater as permitted hereinafter, without the
20 production counting against the petitioner's production rights.

21 (a) If the Board of the Replenishment District
22 determines by Resolution that there is a problem of groundwater
23 contamination that a proposed program will remedy or ameliorate,
24 an operator may make extractions of groundwater to remedy or
25 ameliorate that problem without the production counting against
26 the petitioner's production rights if the water is not applied to
27 beneficial surface use, its extractions are made in compliance
28 with all the terms and conditions of the Board Resolution, and

1 the Board has determined in the Resolution either of the
2 following:

3 (1) The groundwater to be extracted is unusable and
4 cannot be economically treated or blended for use with
5 other water.

6 (2) The proposed program involves extraction of usable
7 water in the same quantity as will be returned to the
8 underground without degradation of quality.

9 (b) The Resolution may provide those terms and
10 conditions the Board deems appropriate, including, but not
11 limited to, restrictions on the quantity of the extractions to be
12 so exempted, limitations on time, periodic reviews, requirement
13 of submission of test results from a Board-approved laboratory,
14 and any other relevant terms or conditions.

15 (c) Upon written notice to the operator involved, the
16 Board may rescind or modify its Resolution. The rescission or
17 modification of the Resolution shall apply to groundwater
18 extractions occurring more than ten days after the rescission or
19 modification. Notice of rescission or modification shall be
20 either mailed first class mail, postage prepaid, at least two
21 weeks prior to the meeting of the Board at which the rescission
22 or modification will be made to the address of record of the
23 operator or personally delivered two weeks prior to the meeting.

24 (d) The Board's decision to grant, deny, modify or
25 revoke a permit or to interrupt or stop a permitted project may
26 be appealed to this court within thirty days of the notice
27 thereof to the applicant and upon thirty days notice to the
28 designees of all parties herein.

1 (e) The Replenishment District shall monitor and
2 periodically inspect the project for compliance with the terms
3 and conditions for any permit issued pursuant to these
4 provisions.

5 (f) No party shall recover costs from any other party
6 herein ⁱⁿ ~~on~~ connection with ^{determinations} ~~determinators~~ made with respect to this
7 part.

8 C. Exchange Pool Provisions.

9 (1) Definitions.

10 For purposes of these Exchange Pool provisions, the
11 following words and terms have the following meanings:

12 (a) "Exchange Pool" is the arrangement hereinafter set
13 forth whereby certain of the parties, ("Exchangees") may,
14 notwithstanding the other provisions of the judgment, extract
15 additional water from Central Basin to meet their needs, and
16 certain other of the parties ("Exchangors"), reduce their
17 extractions below their Allowed Pumping Allocations in order to
18 permit such additional extractions by others.

19 (b) "Exchangor" is one who offers, voluntarily or
20 otherwise, pursuant to subsequent provisions, to reduce its
21 extractions below its Allowed Pumping Allocation in order to
22 permit such additional extractions by others.

23 (c) "Exchangee" is one who requests permission to
24 extract additional water from Central Basin.

25 (d) "Undue hardship" means unusual and severe economic
26 or operational hardship, other than that arising (i) by reason of
27 any differential in quality that might exist between water
28 extracted from Central Basin and water available for importation

1 or (ii) by reason of any difference in cost to a party in
2 subscribing to the Exchange Pool and reducing its extractions of
3 water from Central Basin in an equivalent amount as opposed to
4 extracting any such quantity itself.

5 2. Parties Who May Purchase Water Through the Exchange
6 Pool. Any party not having existing facilities for the taking of
7 imported water as of the beginning of any Administrative year,
8 and any party having such facilities as of the beginning of any
9 Administrative year who is unable, without undue hardship, to
10 obtain, take, and put to beneficial use, through its distribution
11 system or systems existing as of the beginning of the particular
12 Administrative year, imported water in a quantity which, when
13 added to its Allowed Pumping Allocation for that particular
14 Administrative year, will meet its estimated needs for that
15 particular Administrative year, may purchase water from the
16 Exchange Pool, subject to the limitations contained in this
17 Subpart C of this Part III (Subpart "C" hereinafter).

18 3. Procedure for Purchasing Exchange Pool Water. Not
19 later than the 40th day following the commencement of each
20 Administrative year, each such party desiring to purchase water
21 from the Exchange Pool shall file with the Watermaster a request
22 to so purchase, setting forth the amount of water in acre feet
23 that such party estimates that it will require during the then
24 current Administrative year in excess of the total of:

25 (a) Its Allowed Pumping Allocation for that particular
26 Administrative year; and

27 (b) The imported water, if any, which it estimates it
28 will be able, without undue hardship, to obtain, take and put to

1 beneficial use, through its distribution system or systems
2 existing as of the beginning of that particular Administrative
3 year.

4 Any party who as of the beginning of any Administrative
5 year has existing facilities for the taking of imported water and
6 who makes a request to purchase from the Exchange Pool must
7 provide with such request substantiating data and other proof
8 which, together with any further data and other proof requested
9 by the Watermaster, establishes that such party is unable without
10 undue hardship, to obtain, take and put to beneficial use through
11 its said distribution system or systems a sufficient quantity of
12 imported water which, when added to its said Allowed Pumping
13 Allocation for the particular Administrative year, will meet its
14 estimated needs. As to any such party, the Watermaster shall
15 make a determination whether the party has so established such
16 inability, which determination shall be subject to review by the
17 court under the procedure set forth in Part II of this judgment.
18 Any party making a request to purchase from the Exchange Pool
19 shall either furnish such substantiating data and other proof, or
20 a statement that such party had no existing facilities for the
21 taking of imported water as of the beginning of that
22 Administrative year, and in either event a statement of the basis
23 for the quantity requested to be purchased.

24 4. Subscriptions to Exchange Pool.

25 (a) Required Subscription. Each party having existing
26 facilities for the taking of imported water as of the beginning
27 of any Administrative year hereby subscribed to the Exchange Pool
28 for purposes of meeting Category (a) requests thereon, as more

1 particularly defined in paragraph 5 of this Subpart C, twenty
2 percent (20%) of its Allowed Pumping Allocation, or the quantity
3 of imported water which it is able, without undue hardship, to
4 obtain, take and put to beneficial use through its distribution
5 system or systems existing as of the beginning of the particular
6 Administrative year in addition to such party's own estimated
7 needs for imported water during that water year, whichever is the
8 lesser. A party's subscription under this subparagraph (a) and
9 subparagraph (b) of this paragraph 4 is sometimes hereinafter
10 referred to as a 'required subscription'.

11 (b) Report to Watermaster by Parties with Connections
12 and Unable to Subscribe 20%. Any party having existing
13 facilities for the taking of imported water and estimating that
14 it will be unable, without undue hardship, in that Administrative
15 year to obtain, take and put to beneficial use through its
16 distribution system or systems existing as of the beginning of
17 that Administrative year, sufficient imported water to further
18 reduce its extractions from the Central Basin by twenty percent
19 (20%) of its Allowed Pumping Allocation for purposes of providing
20 water to the Exchange Pool must furnish not later than the 40th
21 day following the commencement of such Administrative year sub-
22 stantiating data and other proof which, together with any further
23 data and other proof requested by the Watermaster, establishes
24 said inability or such party shall be deemed to have subscribed
25 twenty percent (20%) of its Allowed Pumping Allocation for the
26 purpose of providing water to the Exchange Pool. As to any such
27 party so contending such inability, the Watermaster shall make a
28 determination whether the party has so established such

1 inability, which determination shall be subject to review by the
2 Court under the procedure set forth in Part II of this judgment.

3 (c) Voluntary Subscriptions. Any party, whether or
4 not having facilities for the taking of imported water, who
5 desires to subscribe to the Exchange Pool a quantity or further
6 quantity of its Allowed Pumping Allocation, may so notify the
7 Watermaster in writing of the quantity of such offer on or prior
8 to the 40th day following the commencement of the particular
9 Administrative year. Such subscriptions are referred to
10 hereinafter as "voluntary subscriptions." Any Exchangor who
11 desires that any part of its otherwise required subscription not
12 needed to fill Category (a) requests shall be available for
13 Category (b) requests may so notify the Watermaster in writing on
14 or prior to said 40th day. If all of that Exchangor's otherwise
15 required subscription is not needed in order to fill Category (a)
16 requests, the remainder of such required subscription not so
17 used, or such part thereof as such Exchangor may designate, shall
18 be deemed to be a voluntary subscription.

19 5. Limitations on Purchases of Exchange Pool Water and
20 Allocation of Requests to Purchase Exchange Pool Water Among
21 Exchangors.

22 (a) Categories of Requests. Two categories of
23 Exchange Pool requests are established as follows:

24 (1) Category (a) requests. The quantity requested by
25 each Exchangee, whether or not that Exchangee has an Allowed
26 Pumping Allocation, which quantity is not in excess of 150% of
27 its Allowed Pumping Allocation, if any, or 100 acre feet,
28 whichever is greater. Requests or portions thereof within the

1 above criteria are sometimes hereinafter referred to as "Category
2 (a) requests."

3 (2) Category (b) requests. The quantity requested by
4 each Exchangee having an Allowed Pumping Allocation to the extent
5 the request is in excess of 150% of that Allowed Pumping Alloca-
6 tion or 100 acre feet, whichever is greater, and the quantity
7 requested by each Exchangee having no Allowed Pumping Allocation
8 to the extent the request is in excess of 100 acre feet.

9 Portions of requests within the above criteria are sometimes
10 hereinafter referred to as "Category (b) requests."

11 (b) Filling of Category (a) Requests. All Exchange
12 Pool subscriptions, required and voluntary, shall be available to
13 fill Category (a) requests. Category (a) requests shall be
14 filled first from voluntary subscriptions, and if voluntary
15 subscriptions should be insufficient to fill all Category (a)
16 requests required subscriptions shall be then utilized to fill
17 Category (a) requests. All Category (a) requests shall be first
18 filled before any Category (b) requests are filled.

19 (c) Filling of Category (b) Requests. To the extent
20 that voluntary subscriptions have not been utilized in filling
21 Category (a) requests, Category (b) requests shall be filled only
22 out of any remaining voluntary subscriptions. Required subscrip-
23 tions will then be utilized for the filling of any remaining
24 Category (b) requests.

25 (d) Allocation of Requests to Subscriptions When
26 Available Subscriptions Exceed Requests. In the event the
27 quantity of subscriptions available for any category of requests
28 exceeds those requests in that category, or exceeds the remainder

1 of those requests in that category, such requests shall be filled
2 out of such subscriptions proportionately in relation to the
3 quantity of each subscription.

4 (e) Allocation of Subscriptions to Category (b)
5 Requests in the Event of Shortage of Subscriptions. In the event
6 available subscriptions are insufficient to meet Category (b)
7 requests, available subscriptions shall be allocated to each
8 request in the proportion that the particular request bears to
9 the total requests of the particular category.

10 6. Additional Voluntary Subscriptions. If subscrip-
11 tions available to meet the requests of Exchangees are insuffi-
12 cient to meet all requests, additional voluntary subscriptions
13 may be solicited and received from parties by the Watermaster.
14 Such additional subscriptions shall be allocated first to
15 Category (a) requests to the extent unfilled, and next to
16 Category (b) requests to the extent unfilled. All allocations
17 are to be otherwise in the same manner as earlier provided in
18 paragraph 5 (a) through 5 (e) inclusive.

19 7. Effect if Category (a) Requests Exceed Available
20 Subscriptions, Both Required and Voluntary. In the event that
21 the quantity of subscriptions available to fill Category (a)
22 requests is less than the total quantity of such requests, the
23 Exchangees may, nonetheless, extract the full amount of their
24 Category (a) requests otherwise approved by the Watermaster as if
25 sufficient subscriptions were available. The amounts received by
26 the Watermaster on account of that portion of the approved
27 requests in excess of the total quantities available from
28 Exchangors shall either be paid by the Watermaster to Central &

1 West Basin Water Replenishment District in trust for the purpose
2 of purchasing imported water and spreading the same in Central
3 Basin for replenishment thereof, or credited to an account of
4 said Plaintiff District on the books of the Watermaster, at the
5 option of said Plaintiff District. Thereafter said Plaintiff
6 District may, at any time, withdraw said funds or any part
7 thereof so credited in trust for the aforesaid purpose, or may by
8 the 40th day of any Administrative year notify the Watermaster
9 that it desires all or any portion of said funds to be expended
10 by the Watermaster for the purchase of water available from
11 subscriptions by Exchangors in the event the total quantity of
12 such subscriptions exceeds the total quantity of approved
13 requests by parties to purchase Exchange Pool water. To the
14 extent that there is such an excess of available subscriptions
15 over requests and to the extent that the existing credit in favor
16 of Plaintiff District is sufficient to purchase such excess
17 quantity at the price established for Exchange Pool purchases
18 during that Administrative year, the account of the Plaintiff
19 District shall be debited and the money shall be paid to the
20 Exchangors in the same manner as if another party had made such
21 purchase as an Exchangee. The Plaintiff District shall not
22 extract any such Exchange Pool water so purchased.

23 8. Additional Pumping by Exchangees Pursuant to
24 Exchange Pool Provisions. An Exchangee may extract from Central
25 Basin in addition to its Allowed Pumping Allocation for a
26 particular Administrative year that quantity of water which it
27 has requested to purchase from the Exchange Pool during that
28 Administrative year and which has been allocated to it pursuant

1 to the provisions of paragraphs 5, 6 and 7. The first pumping by
2 an Exchangee in any Administrative year shall be deemed to be
3 pumping of the party's allocation of Exchange Pool water.

4 9. Reduction in Pumping by Exchangors. Each Exchangor
5 shall in each Administrative year reduce its extractions of water
6 from Central Basin below its Allowed Pumping Allocation for the
7 particular year in a quantity equal to the quantity of Exchange
8 Pool requests allocated to it pursuant to the provisions of
9 paragraphs 4, 5, 6 and 7 of this Subpart C.

10 10. Price to be Paid for Exchange Pool Water. The
11 price to be paid by Exchangees and to be paid to Exchangors per
12 acre foot for required and voluntary subscriptions of Exchangors
13 utilized to fill requests on the Exchange Pool by Exchangees
14 shall be the dollar amount computed as follows by the Watermaster
15 for each Administrative year. The "normal" price as of the
16 beginning of the Administrative year charged by Central Basin
17 Municipal Water District (CBMWD) for treated MWD (Metropolitan
18 Water District of Southern California) water used for domestic
19 and municipal purposes shall be determined, and if on that date
20 there are any changes scheduled during that Administrative year
21 in CBMWD's "normal" price for such category of water, the
22 weighted daily "normal" CBMWD price shall be determined and used
23 in lieu of the beginning such price; and there shall be deducted
24 from such beginning or weighted price, as the case may be, the
25 "incremental cost of pumping water in Central Basin" at the
26 beginning of the Administrative year and any then current rate or
27 rates, of assessments levied on the pumping of ground water in
28 Central Basin by Plaintiff District and any other governmental

1 agency. The "normal" price charged by CBMWD shall be the highest
2 price of CBMWD for normal service excluding any surcharge or
3 higher rate for emergency deliveries or otherwise failing to
4 comply with CBMWD rates and regulations relating to earlier
5 deliveries. The "incremental cost of pumping water in Central
6 Basin" as of the beginning of the Administrative year shall be
7 deemed to be the Southern California Edison Company Schedule No.
8 PA-1 rate per kilowatt-hour, including all adjustments and all
9 uniform authorized additions to the basic rate, multiplied by 560
10 kilowatt-hours per acre-foot, rounded to the nearest dollar
11 (which number of kilowatt-hours has been determined to represent
12 the average energy consumption to pump an acre-foot of water in
13 Central Basin). In applying said PA-1 rate the charge per
14 kilowatt-hour under the schedule shall be employed and if there
15 are any rate blocks then the last rate block shall be employed.
16 Should a change occur in Edison schedule designations, the
17 Watermaster shall employ that applicable to motors used for
18 pumping water by municipal utilities.

19 11. Carry-over of Exchange Pool Purchases by
20 Exchangees. An Exchangee who does not extract from Central Basin
21 in a particular Administrative year a quantity of water equal to
22 the total of (a) its Allowed Pumping Allocation for that
23 particular Administrative year, reduced by any authorized amount
24 of carry-over into the next succeeding Administrative year
25 pursuant to the provisions of Subpart A of Part III of this
26 judgment, and (b) the quantity that it purchased from the
27 Exchange Pool for that particular Administrative year, may carry
28 over into the next succeeding Administrative year the right to

1 extract from Central Basin a quantity equal to the difference
2 between said total and the quantity actually extracted in that
3 Administrative year, but not exceeding the quantity purchased
4 from the Exchange Pool for that Administrative year. Any such
5 carry-over shall be in addition to that provided in said Subpart
6 A of Part III.

7 If the 'Basinwide Average Exchange Pool Price' in
8 the next succeeding Administrative year exceeds the 'Exchange
9 Pool Price' in the previous Administrative year any such
10 Exchangee exercising such carry-over rights hereinabove provided
11 shall pay to the Watermaster, forthwith upon the determination of
12 the 'Exchange Pool Price' in said succeeding Administrative year,
13 and as a condition to such carry-over rights, an additional
14 amount determined by multiplying the number of acre feet of
15 carry-over by the difference in 'Exchange Pool Price' as between
16 the two Administrative years. Such additional payment shall be
17 miscellaneous income to the Watermaster which shall be applied by
18 him against that share of the Watermaster's budget to be paid by
19 the parties to this Agreement for the second Administrative year
20 succeeding that in which the Exchange Pool water was so
21 purchased.

22 12. Notification by Watermaster to Exchangors and
23 Exchangees of Exchange Pool Requests and Allocations Thereof and
24 Price of Exchange Pool Water. Not later than the 65th day after
25 the commencement of each Administrative year, the Watermaster
26 shall determine and notify all Exchangors and Exchangees of the
27 total of the allocated requests for Exchange Pool water and shall
28 provide a schedule divided into categories of requests showing

1 the quantity allocated to each Exchangee and a schedule of the
2 allocation of the total Exchange Pool requirements among the
3 Exchangors. Such notification shall also advise Exchangors and
4 Exchangees of the prices to be paid to Exchangors for
5 subscriptions utilized and the Exchange Pool Price for that
6 Administrative year as determined by the Watermaster. The
7 determinations of the Watermaster in this regard shall be subject
8 to review by the Court in accordance with the procedure set forth
9 in Part II of this judgment.

10 13. Payment by Exchangees. Each Exchangee shall, on
11 or prior to last day of the third month of each Administrative
12 year, pay to the Watermaster one-quarter of said price per acre-
13 foot multiplied by the number of acre feet of such party's
14 approved request and shall, on or before the last day of each of
15 the next succeeding three months, pay a like sum to the
16 Watermaster. Such amounts must be paid by each Exchangee
17 regardless of whether or not it in fact extracts or uses any of
18 the water it has requested to purchase from the Exchange Pool.

19 14. Payments to Exchangors. As soon as possible after
20 receipt of moneys from Exchangees, the Watermaster shall remit to
21 the Exchangors their prorata portions of the amount so received
22 in accordance with the provisions of paragraph 10 above.

23 15. Delinquent Payments. Any amounts not paid on or
24 prior to any due date above shall carry interest at the rate of
25 1% per month or any part of a month. Any amounts required to be
26 so paid may be enforced by the equitable powers of the Court,
27 including, but not limited to, the injunctive process of the
28 Court. In addition thereto, the Watermaster, as Trustee for the

1 Exchangors, may enforce such payment by any appropriate legal
2 action, and shall be entitled to recover as additional damages
3 reasonable attorneys' fees incurred in connection therewith. If
4 any Exchangee shall fail to make any payments required of it on
5 or before 30 days after the last payment is due, including any
6 accrued interest, said party shall thenceforward not be entitled
7 to purchase water from the Exchange Pool in any succeeding
8 Administrative year except upon order of the Court, upon such
9 conditions as the Court may impose.

10 IV. CONTINUING JURISDICTION OF THE COURT.

11 The Court hereby reserves continuing jurisdiction and
12 upon application of any interested party, or upon its own motion,
13 may review and redetermine the following matters and any matters
14 incident thereto:

15 (a) Its determination of the permissible level of
16 extractions from Central Basin in relation to achieving a
17 balanced basin and an economic utilization of Central Basin for
18 ground water storage, taking into account any then anticipated
19 artificial replenishment of Central Basin by governmental
20 agencies for the purpose of alleviating what would otherwise be
21 annual overdrafts upon Central Basin and all other relevant
22 factors.

23 (b) Whether in accordance with applicable law any
24 party has lost all or any portion of his rights to extract ground
25 water from Central Basin and, if so, to ratably adjust the
26 Allowed Pumping Allocations of the other parties and ratably
27 thereto any remaining Allowed Pumping Allocation of such party.
28

1 (c) To remove any Watermaster appointed from time to
2 time and appoint a new Watermaster; and to review and revise the
3 duties, powers and responsibilities of the Watermaster and to
4 make such other and further provisions and orders of the Court
5 that may be necessary or desirable for the adequate admini-
6 stration and enforcement of the judgment.

7 (d) To revise the price to be paid by Exchangees and
8 to Exchangors for Exchange Pool purchases and subscriptions.

9 (e) In case of emergency or necessity, to permit
10 extractions from Central Basin for such periods as the Court may
11 determine: (i) ratably in excess of the Allowed Pumping
12 Allocations of the parties; or (ii) on a non-ratable basis by
13 certain parties if either compensation or other equitable
14 adjustment for the benefit of the other parties is provided.
15 Such overextractions may be permitted not only for emergency and
16 necessity arising within Central Basin area, but to assist the
17 remainder of the areas within The Metropolitan Water District of
18 Southern California in the event of temporary shortage or
19 threatened temporary shortage of its imported water supply, or
20 temporary inability to deliver the same throughout its area, but
21 only if the court is reasonably satisfied that no party will be
22 irreparably damaged thereby. Increased energy cost for pumping
23 shall not be deemed irreparable damage. Provided, however, that
24 the provisions of this subparagraph will apply only if the
25 temporary shortage, threatened temporary shortage, or temporary
26 inability to deliver was either not reasonably avoidable by the
27 Metropolitan Water District, or if reasonably avoidable, good
28 reason existed for not taking the steps necessary to avoid it.

1 (f) To review actions of the Watermaster.

2 (g) To assist the remainder of the areas within The
3 Metropolitan Water District of Southern California within the
4 parameter set forth in subparagraph (e) above.

5 (h) To provide for such other matters as are not
6 contemplated by the judgment and which might occur in the future,
7 and which if not provided for would defeat any or all of the
8 purposes of this judgment to assure a balanced Central Basin
9 subject to the requirements of Central Basin Area for water
10 required for its needs, growth and development.

11 The exercise of such continuing jurisdiction shall be
12 after 30 days notice to the parties, with the exception of the
13 exercise of such continuing jurisdiction in relation to
14 subparagraphs (e) and (g) above, which may be ex parte, in which
15 event the matter shall be forthwith reviewed either upon the
16 Court's own motion or the motion of any party upon which 30 days
17 notice shall be so given. Within ten (10) days of obtaining any
18 ex parte order, the party so obtaining the same shall mail notice
19 thereof to the other parties. If any other party desires Court
20 review thereof, the party obtaining the ex parte order shall bear
21 the reasonable expenses of mailing notice of the proceedings, or
22 may in lieu thereof undertake the mailing. Any contrary or
23 modified decision upon such review shall not prejudice any party
24 who relied on said ex parte order.

25 V. GENERAL PROVISIONS.

26 1. Judgment Constitutes Inter Se Adjudication. This
27 judgment constitutes an inter se adjudication of the respective
28 rights of all parties, except as may be otherwise specifically

1 indicated in the listing of the rights of the parties at pages 12
2 through 52 of this judgment, or in Appendix "2" hereof.

3 2. Assignment, Transfer, Etc., of Rights. Subject to
4 the other provision of this judgment, and any rules and
5 regulations of the Watermaster requiring reports relative
6 thereto, nothing herein contained shall be deemed to prevent any
7 party hereto from assigning, transferring, licensing or leasing
8 all or any portion of such water rights as it may have with the
9 same force and effect as would otherwise be permissible under
10 applicable rules of law as exist from time to time.

11 3. Service Upon and Delivery to Parties of Various
12 Papers. Service of the judgment on those parties who have
13 executed that certain Stipulation and Agreement for Judgment or
14 who have filed a notice of election to be bound by the Exchange
15 Pool provisions shall be made by first class mail, postage
16 prepaid, addressed to the designee and at the address designated
17 for that purpose in the executed and filed Counterpart of the
18 Stipulation and Agreement for Judgment or in the executed and
19 filed "Notice of Election to be Bound by Exchange Pool
20 Provisions", as the case may be, or in any substitute designation
21 filed with the Court.

22 Each party who has not heretofore made such a
23 designation shall, within 30 days after the judgment shall have
24 been served upon that party, file with the Court, with proof of
25 service of a copy upon the Watermaster, a written designation of
26 the person to whom and the address at which all future notices,
27 determinations, requests, demands, objections, reports and other
28

1 papers and processes to be served upon that party or delivered to
2 that party are to be so served or delivered.

3 A later substitute designation filed and served in the
4 same manner by any party shall be effective from the date of
5 filing as to the then future notices, determinations, requests,
6 demands, objections, reports and other papers and processes to be
7 served upon or delivered to that party.

8 Delivery to or service upon any party by the
9 Watermaster, by any other party, or by the Court, or any item
10 required to be served upon or delivered to a party under or
11 pursuant to the judgment may be by deposit in the mail, first
12 class, postage prepaid, addressed to the designee and at the
13 address in the latest designation filed by that party.

14 4. Judgment Does Not Affect Rights, Powers, Etc., of
15 Plaintiff District. Nothing herein constitutes a determination
16 or adjudication which shall foreclose Plaintiff District from
17 exercising such rights, powers, privileges and prerogatives as it
18 may now have or may hereafter have by reason of provisions of
19 law.

20 5. Continuation of Order Under Interim Agreement. The
21 order of Court made pursuant to the "Stipulation and Interim
22 Agreement and Petition for Order" shall remain in effect through
23 the water year in which this judgment shall become final (subject
24 to the reserved jurisdiction of the Court).

25 6. Effect of: Extractions by Exchangees; Reductions
26 in Extractions. With regard to Exchange Pool purchases, the
27 first extractions by each Exchangee shall be deemed the
28 extractions of the quantities of water which that party is

1 entitled to extract pursuant to his allocation from the Exchange
2 Pool for that Administrative year. Each Exchangee shall be
3 deemed to have pumped his Exchange Pool request so allocated for
4 and on behalf of each Exchangor in proportion to each Exchangor's
5 subscription to the Exchange Pool which is utilized to meet
6 Exchange Pool requests. No Exchangor shall ever be deemed to
7 have relinquished or lost any of its rights determined in this
8 judgment by reason of allocated subscriptions to the Exchange
9 Pool. Each Exchangee shall be responsible as between Exchangors
10 and that Exchangee, for any tax or assessment upon the production
11 of ground water levied for replenishment purposes by the Central
12 and West Basin Water Replenishment District or by any other
13 governmental agency with respect to water extracted by such
14 Exchangee by reason of Exchange Pool allocations and purchases.
15 No Exchangor or Exchangee shall acquire any additional rights,
16 with respect to any party to this action, to extract waters from
17 Central Basin pursuant to Water Code Section 1005.1 by reason of
18 the obligations pursuant to and the operation of the Exchange
19 Pool.

20 7. Judgment Binding on Successors, Etc. This judgment
21 and all provisions thereof are applicable to and binding upon not
22 only the parties to this action, but as well to their respective
23 heirs, executors, administrators, successors, assigns, lessees,
24 licensees and to the agents, employees and attorneys in fact of
25 any such persons.

26 8. Costs. No party shall recover its costs herein as
27 against any other party.
28

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APPENDIX G

**ORDINANCE NO. 925 DECLARING A WATER SHORTAGE EMERGENCY AND
ADOPTING WATER CONSERVATION REGULATIONS AND RESTRICTIONS**

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ORDINANCE NO. 925

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF DOWNEY
DECLARING A WATER SHORTAGE EMERGENCY AND ADDING
SECTIONS 7350 TO 7356 TO THE DOWNEY MUNICIPAL CODE
RELATING TO ADOPTING WATER CONSERVATION REGULATIONS
AND RESTRICTIONS**

**THE CITY COUNCIL OF THE CITY OF DOWNEY DOES ORDAIN AS
FOLLOWS:**

SECTION 1. The City Council of the City of Downey hereby finds, determines, and declares as follows:

A. The City obtains 20 % of the potable water needed to serve its customers from the Central Basin Municipal Water District of Southern California (hereinafter "CBMWD"). CBMWD delivers an average of 3,500 acre feet per year (hereinafter "AFY") of potable water to the City.

B. CBMWD wishes to reduce deliveries to the City by approximately 10% commencing February 1, 1991, due to a water shortage caused by the drought which is affecting most of the State of California. As a result, the supply of water available to the District for distribution to District customers will be reduced by approximately 10% or 350 AFY due to the reductions imposed by CBMWD.

C. The ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply to the extent that there would be insufficient water for human consumption, sanitation, and fire protection due to the reduction in supply imposed by CBMWD and due to the drought. The City must immediately impose regulations and restrictions limiting the amount of water which may be delivered to customers to protect the health, welfare, and safety of the community. If the regulations described in this chapter are not immediately adopted and implemented, there will be insufficient water to satisfy human consumption, sanitation, and fire protection requirements. If these regulations are adopted, the water supply should be adequate to serve these primary health and safety needs.

D. The CBMWD supplies approximately 140,000 AFY of potable water to approximately 350,000 households and approximately 50,000 commercial ventures. In some areas, the CBMWD must serve water entirely from the pipeline from Metropolitan which provides imported water to the District. Most of this water was obtained directly from pipelines connected to the Metropolitan Water District system. A portion of this water is obtained from storage in the Central Basin groundwater aquifers. CBMWD is unable to remove water from the groundwater aquifers for delivery to all parts of the District.

E. The CBMWD has adopted a resolution (April 25, 1990) setting forth an array of water conservation measures which may be adopted depending upon the severity of the water shortage. The CBMWD adopted a Phase I conservation program which encouraged voluntary water conservation. The CBMWD now desires to adopt Phase

II regulations which requires reductions in water consumption and restricts certain water uses. Additional reductions may be required at progressive stages III, IV, and V. The City Council shall approve each stage reduction.

F. The regulations and restrictions set forth herein will not produce any significantly adverse environmental impacts as disclosed by environmental documents prepared and distributed as required by law. A negative declaration covering the adoption of the regulations and restrictions described below is hereby adopted and approved.

G. The purpose of Sections 7350 and 7353 is to reduce the amount of potable water consumed by the City of Downey customers in stages for Metropolitan Water District non-interruptible deliveries in the following percentages:

REDUCTIONS FROM BASE YEAR

PHASE	CONSERVATION OF FIRM DELIVERIES
I	Goal 10%
II	5%
III	10%
IV	15%
V	20%

To this end the amount of water to be delivered to the City of Downey shall be allotted as set forth in this section based upon the percentage target from the 1989-1990 base year.

H. These regulations and restrictions are adopted pursuant to the authority of Water Code Section 350 et seq.

SECTION 2. Chapter 3.5, Water Conservation Regulations and Restrictions, of Article VI[, Streets and Public Works, consisting of Sections 7350 to 7356, is hereby added to the Downey Municipal Code to read as follows:

"WATER CONSERVATION REGULATIONS AND RESTRICTIONS"

Section 7350 Use Restrictions

Customers shall comply with the following restrictions concerning the use of water:

A. With respect to irrigation practices:

(1) Except as provided below, lawn watering and landscape irrigation with potable water is permitted only between the hours of 4:00 p.m. and 10:00 a.m. on designated irrigation days. Golf courses, parks, school grounds, and recreational fields may be irrigated with potable water on any day, and golf course greens and tees may be irrigated at other times when a plan approved by the Director of Public Works is on file with the City. Agricultural users,

commercial nurseries/landscape contractors, and irrigators of propagation beds may continue to irrigate with potable water as management practices dictate, but are required to curtail all nonessential water uses.

(2) Irrigation with reclaimed water is permitted on any day.

(3) Watering is permitted at any time if a hand-held hose equipped with a positive shut-off nozzle is used, a hand--held faucet-filled bucket of five gallons or less is used, or a drip irrigation system is used.

(4) A "designated irrigation day" is determined by the last digit of the street address. Properties with addresses ending in an even-number may irrigate on even-numbered days of the month and addresses ending in an odd-number may irrigate on odd-numbered days of the month. Where the cost of reprogramming automatic irrigation systems is determined by the Director of Public Works to be prohibitive or unfeasible, as with businesses that are not normally open on weekends, such customers may be permitted to irrigate on Mondays, Wednesdays, and Fridays.

B. With respect to exterior washing practices:

(1) Washing of buildings, facilities, equipment, autos, trucks, trailers, boats, airplanes, and other types of mobile equipment is prohibited except where a hand-held hose equipped with a positive shut-off nozzle for quick rinses is used. Whenever possible, such as when washing vehicles, a bucket wash is encouraged.

(2) Washing is permitted at any time on the immediate premises of a commercial car wash.

(3) Washings are exempted from these regulations where the health, safety, and welfare of the public is contingent upon frequent vehicle or other facility or equipment cleaning, such as garbage trucks and vehicles used to transport food and perishables.

(4) Water shall not be used to wash down sidewalks, driveways, parking areas, patios or other paved areas except to alleviate immediate fire, sanitation or health hazards.

(5) Water shall not be allowed to run off landscape areas into adjoining streets, sidewalks, or other paved areas due to incorrectly directed or maintained sprinklers or excessive watering.

C. With respect to ornamental or recreational uses:

(1) Filling and refilling swimming pools and spas is discouraged, but should be permitted only between the hours of 6:00 p.m. and 6:00 a.m.

(2) Filling and refilling of ponds, fountains, and artificial lakes is discouraged, and the recycling of water in ponds, fountains, and artificial lakes should be encouraged.

D. With respect to other uses:

(1) Water from fire hydrants shall be used only for fire fighting and public health, safety and welfare activities.

(2) Flushing of water mains will not be permitted except as necessary to protect the public health.

(3) Restaurants shall not serve water to their customers unless specifically requested.

E. Leaks must be repaired as soon as discovered and shall not be allowed to continue for more than 48 hours.

Section 7353 Administrative Review

A. The City recognizes that the enforcement of this ordinance will impose inconvenience upon the public and desires that hardships shall be mitigated whenever feasible. Water customers shall be afforded the opportunity to contest findings, correct errors, and alleviate unusual and extraordinary hardship. The administrative review process set forth in this section is adopted to further these goals.

B. The Director of Public Works may grant relief to customers to reflect changes in circumstances which have occurred subsequent to the base period. No relief shall be granted unless the customer demonstrates maximum practical water reduction. The Water Board shall review appeals from the decision of the Director of Public Works as soon as practical but in no event later than thirty-five (35) days after the customer files a written request for administrative review.

Section 7356 Reports and Recommendations

The Director of Public Works shall report on compliance with this ordinance in light of future water supply conditions. The Director of Public Works shall also report on the experience of the administration of the ordinance. The reports shall be submitted to the Water Board monthly, commencing March 1991.

SECTION 3. The City Clerk shall certify to the passage of this ordinance and shall cause the same to be published as required by law.

PASSED AND APPROVED this 25th day of February, 1991.

Roy L. Paul
Mayor

ATTEST:

Judith E. McDonnell
City Clerk

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) ss.
CITY OF DOWNEY)

I, JUDITH E., McDONNELL, City Clerk of the City of Downey, do hereby certify that the foregoing Ordinance No. 925 was regularly introduced and placed upon its first reading at a regular meeting of the City Council on the 12th day of February, 1991. That thereafter, said Ordinance was duly adopted and passed at a regular meeting of the City Council on the 26th day of February, 1991, by the following vote, to wit:

AYES:	3	Council Members:	Hayden, Cormack, Paul
NOES:	0	Council Members:	None
ABSENT:	2	Council Members:	Boggs, Brazelton

Judith E. McDonnell
City Clerk

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APPENDIX H

WATER SHORTAGE RATIONING ALLOTMENT METHOD

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Water Shortage Rationing Allotment Method

The following is the City of Downey rationing allocation method for potable water supply, by customer type and stage during declared water shortages.

Priority Allotment for Residential - STAGE II

The Water Purveyor has 75% of average supply available and is in a Stage II Shortage.

Average year residential account water demand¹ = 13,297 AF
Water available for residential accounts in Stage II = 9,973 AF

1. Residential accounts "health & safety" allotment

$$(68 \text{ gpcd}) * (110,457 \text{ people}) * (365 \text{ days}) * (\text{AF}/325,851 \text{ gal}) = 8,413 \text{ AFY}$$

"Health & safety" allotment per single family account

$$(68 \text{ gpcd}) * (3.5 \text{ people})^2 = (238 \text{ gpd}) * (365 \text{ days}) * (\text{HCF}/748 \text{ gal}) = 116 \text{ HCF/year}$$

"Health & safety" allotment per multi-family account

$$(68 \text{ gpcd}) * (3.1 \text{ people})^2 = (211 \text{ gpd}) * (365 \text{ days}) * (\text{HCF}/748 \text{ gal}) = 103 \text{ HCF/year}$$

2. Additional water available for residential add-on

Available res. water - "health & safety" res. allotment = non-essential add-on

$$(9,973 \text{ AFY}) - (8,413 \text{ AFY}) = 1,560 \text{ AFY}$$

Normal use - "health & safety" = normal non-essential water use

$$(13,297 \text{ AFY}) - (8,413 \text{ AFY}) = 4,884 \text{ AF}$$

Residential add-on/Normal non-essential water use = % of non-essential use available

$$1,560 \text{ AFY}/4,884 \text{ AFY} = 32\% \text{ of normal non-essential use available}$$

Notes:

- 1 Based on average demands during the most recent five years (from FY 2005/06 to FY 2009/10) including 3.9% system losses. Demands during the most recent year (2009/10) were lower than average as a partial result of economic conditions that are not expected to continue.
- 2 Based on 2010 Census data, CA Department of Finance Data and discussions with City of Downey Planning Department

Priority Allotment for Residential - STAGE III

The Water Purveyor has 65% of average supply available and is in a Stage III Shortage.

Average year residential account water demand¹ = 13,297 AF

Water available for residential accounts in Stage III = 8,643 AF

1. Residential accounts "health & safety" allotment

$$(68 \text{ gpcd}) * (110,457 \text{ people}) * (365 \text{ days}) * (\text{AF}/325,851 \text{ gal}) = 8,413 \text{ AFY}$$

"Health & safety" allotment per single family account

$$(68 \text{ gpcd}) * (3.5 \text{ people})^2 = (238 \text{ gpd}) * (365 \text{ days}) * (\text{HCF}/748 \text{ gal}) = 116 \text{ HCF/year}$$

"Health & safety" allotment per multi-family account

$$(68 \text{ gpcd}) * (3.1 \text{ people})^2 = (211 \text{ gpd}) * (365 \text{ days}) * (\text{HCF}/748 \text{ gal}) = 103 \text{ HCF/year}$$

2. Additional water available for residential add-on

Available res. water - "health & safety" res. allotment = non-essential add-on

$$(8,643 \text{ AFY}) - (8,413 \text{ AFY}) = 230 \text{ AFY}$$

Normal use - "health & safety" = normal non-essential water use

$$(13,297 \text{ AFY}) - (8,413 \text{ AFY}) = 4,884 \text{ AF}$$

Residential add-on/Normal non-essential water use = % of non-essential use available

$$230 \text{ AFY}/4,884 \text{ AFY} = 5\% \text{ of normal non-essential use available}$$

Notes:

- 1 Based on average demands during the most recent five years (from FY 2005/06 to FY 2009/10) including 3.9% system losses. Demands during the most recent year (2009/10) were lower than average as a partial result of economic conditions that are not expected to continue.
- 2 Based on 2010 Census data, CA Department of Finance Data and discussions with City of Downey Planning Department

Priority Allotment for Residential - STAGE IV

The Water Purveyor has 50% of average supply available and is in a Stage IV Shortage

Average year residential account water demand¹ = 13,297 AF Water
available for residential accounts in Stage IV = 6,649 AF

1. Residential accounts "health & safety" allotment

$$(50 \text{ gpcd}) * (110,457 \text{ people}) * (365 \text{ days}) * (\text{AF}/325,851 \text{ gal}) = 6,186 \text{ AFY}$$

"Health & safety" allotment per single family account

$$(50 \text{ gpcd}) * (3.5 \text{ people})^2 = (175 \text{ gpd}) * (365 \text{ days}) * (\text{HCF}/748 \text{ gal}) = 85 \text{ HCF/year}$$

"Health & safety" allotment per multi-family account

$$(50 \text{ gpcd}) * (3.1 \text{ people})^2 = (155 \text{ gpd}) * (365 \text{ days}) * (\text{HCF}/748 \text{ gal}) = 76 \text{ HCF/year}$$

2. Additional water available for residential add-on

Available res. water - "health & safety" res. allotment = non-essential add-on
 $(6,649 \text{ AFY}) - (6,186 \text{ AFY}) = 463 \text{ AFY}$

Normal use - "health & safety" = normal non-essential water use
 $(13,297 \text{ AFY}) - (6,186 \text{ AFY}) = 7,111 \text{ AF}$

Residential add-on/Normal non-essential water use = % of non-essential use available

$$463 \text{ AFY}/7,111 \text{ AFY} = 7\% \text{ of normal non-essential use available}$$

Notes:

- 1 Based on average demands during the most recent five years (from FY 2005/06 to FY 2009/10) including 3.9% system losses. Demands during the most recent year (2009/10) were lower than average as a partial result of economic conditions that are not expected to continue.
- 2 Based on 2010 Census data, CA Department of Finance Data and discussions with City of Downey Planning Department

Hybrid Allotment Calculation Method

Table1
Historical Water Use For One Single-Family Account

Water Use (HCF) and Corresponding FY					
2005/2006	2006/2007	2007/2008	2008/2009	2009/2010	Average ¹
229	257	231	222	206	229

Notes:

1. Average water use of specified period, including 3.9% system losses.

Example – Non-conserving household, Stage II

- 1 Difference between five-year average water use and “health & safety” SF allotment
 $229 \text{ HCF} - 116 \text{ HCF} = 113 \text{ HCF}$
- 2 Non-essential add-on available to this single-family account
 $(32\%) * (113 \text{ HCF}) = 36 \text{ HCF}$
- 3 Yearly allotment = “health & safety” SF allotment plus the non-essential add-on
 $116 \text{ HCF} + 36 \text{ HCF} = 152 \text{ HCF}$
- 4 Percentage reduction for this household
 $100 * [1 - (\text{this year's water allotment})/(\text{average water use})] = \% \text{ reduction}$
 $100 * [1 - (152 \text{ HCF})/(229 \text{ HCF})] = 34\% \text{ reduction from average use}$

Example – Non-conserving household, Stage III

- 1 Difference between five-year average water use and “health & safety” SF allotment
 $229 \text{ HCF} - 116 \text{ HCF} = 113 \text{ HCF}$
- 2 Non-essential add-on available to this single-family account
 $(5\%) * (113 \text{ HCF}) = 6 \text{ HCF}$
- 3 Yearly allotment = “health & safety” SF allotment plus the non-essential add-on
 $116 \text{ HCF} + 6 \text{ HCF} = 122 \text{ HCF}$
- 4 Percentage reduction for this household
 $100 * [1 - (\text{this year's water allotment})/(\text{average water use})] = \% \text{ reduction}$
 $100 * [1 - (122 \text{ HCF})/(229 \text{ HCF})] = 47\% \text{ reduction from average use}$

Example – Non-conserving household, Stage IV

1 Difference between five-year average water use and “health & safety” SF allotment
 $229 \text{ HCF} - 85 \text{ HCF} = 144 \text{ HCF}$

2 Non-essential add-on available to this single-family account
 $(7\%) * (144 \text{ HCF}) = 10 \text{ HCF}$

3 Yearly allotment = “health & safety” SF allotment plus the non-essential add-on
 $85 \text{ HCF} + 10 \text{ HCF} = 95 \text{ HCF}$

4 Percentage reduction for this household
 $100 * [1 - (\text{this year's water allotment})/(\text{average water use})] = \% \text{ reduction}$

$$100 * [1 - (95 \text{ HCF})/(229 \text{ HCF})] = 59\% \text{ reduction from average use}$$

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APPENDIX I

RESOLUTION NO. 11-7275 ESTABLISHING RATES FOR WATER SERVICE

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RESOLUTION NO. 11-7275

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF DOWNEY
ESTABLISHING RATES FOR WATER SERVICE AND REPEALING SECTIONS 2
AND 3 OF RESOLUTION NO. 05-6861.**

WHEREAS, a water rate increase is necessary to maintain and replace critical/aging infrastructure, and to ensure that the future Water Fund is self-sufficient; and

WHEREAS, increases in property-related fees and charges, including rates for water service, are subject to the requirements of Article XIII D, Section 6 of the California Constitution (Proposition 218); and

WHEREAS, a special notice proceeding on the proposition of increasing rates for water purposes was called by City Council on April 12, 2011 setting the time and place for a public hearing on establishing rates for water service and authorizing staff to notify property owners and ratepayers of affected parcels; and

WHEREAS, pursuant to Proposition 218 requirements, a public notice consisting of the proposed water rates, the basis upon which the proposed rates were calculated, the reason for the proposed rate increase, the date, time, and location of the public hearing, instructions on how to calculate the proposed water charges, and instructions on how to protest against the proposed rate increase was mailed on May 11 and May 12, 2011 to property owners and ratepayers of record within the City as of the latest available Los Angeles County Assessor and City utility billing databases; and

WHEREAS, the City has given notice of the date, time, and location of the public hearing on the proposed water rate increase by publishing such notice in local newspapers in English on June 9 and June 16 and in Spanish on June 10 and June 17, 2011, and by posting copies of the public notice at the Downey City Library, Barbara J. Riley Community and Senior Center, and Downey City Hall; and

WHEREAS, a duly noticed public hearing on the proposed water rate increase was held at 7:30 p.m., or soon thereafter as could be heard, on Tuesday June 28, 2011 in the City Council Chamber at Downey City Hall, 11111 Brookshire Avenue, Downey CA 90241; and

WHEREAS, a majority protest, as contemplated by Article XIII D, Section 6 of the California Constitution (Proposition 218), was not received from property owners and ratepayers of affected City parcels by the conclusion of the public hearing.

**NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF DOWNEY DOES
HEREBY RESOLVE AS FOLLOWS:**

SECTION 1. Pursuant to Title 14, Division 6, Chapter 3, Article 18, Section 15273 of the California Code of Regulations, the California Environmental Quality Act (CEQA) is not applicable to the approval of the water rates and charges set forth herein because such rates and charges are for the purpose of:

- (1) Purchasing or leasing of supplies, equipment, or materials;
- (2) Meeting financial reserve needs and requirements;

RESOLUTION NO. 11-7275
PAGE TWO

- (3) Obtaining funds for capital projects necessary to maintain a service within existing service areas;
- (4) Meeting operating expenses including employee wage rates and fringe benefits.

SECTION 2. Pursuant to the provisions of Article XIII D, Section 6 of the California Constitution (Proposition 218) and Chapter 3 of the Downey Municipal Code, the City Council hereby establishes the following water rate schedule, the fees of which shall appear on the bi-monthly water bill, to become effective with the start of the customer’s next water service cycle on or after the dates provided:

(1) Fixed Bi-monthly Water Meter Charge

All Accounts – Billed by water meter size per the following charges:

<u>Meter Size</u>	<u>Charge</u> <u>(7/1/11)</u>	<u>Charge</u> <u>(7/1/12)</u>	<u>Charge</u> <u>(7/1/13)</u>	<u>Charge</u> <u>(7/1/14)</u>	<u>Charge</u> <u>(7/1/15)</u>
5/8"	\$13.43	\$17.46	\$21.30	\$21.94	\$22.60
3/4"	\$16.92	\$22.00	\$26.84	\$27.64	\$28.47
1"	\$20.55	\$26.72	\$32.59	\$33.57	\$34.58
1-1/2"	\$31.70	\$41.21	\$50.28	\$51.78	\$53.34
2"	\$49.03	\$63.74	\$77.76	\$80.09	\$82.50
3"	\$92.17	\$119.82	\$146.18	\$150.57	\$155.08
4"	\$121.60	\$158.08	\$192.86	\$198.64	\$204.60
6"	\$177.69	\$231.00	\$281.82	\$290.27	\$298.98
8"	\$241.12	\$313.46	\$382.42	\$393.89	\$405.71
10"	\$309.41	\$402.23	\$490.72	\$505.45	\$520.61
12"	\$364.69	\$474.10	\$578.40	\$595.75	\$613.62

Accounts with compound water meters shall be billed one fixed bi-monthly meter charge associated with the larger side of the compound meter.

(2) Variable Bi-Monthly Water Usage Charge

In addition to the fixed bi-monthly water meter charge, each water customer shall pay a bi-monthly variable water usage charge based on units of water flow, determined as bi-monthly metered water use. Each unit of water flow is equal to 100 cu. ft. (hcf) or one Consumption Unit (CU).

Single-Family Residential Accounts – billed per the following charges:

<u>Tiers</u> <u>(100 cu. ft.)</u>	<u>Charge</u> <u>(\$/100 cu. ft.)</u> <u>(7/1/11)</u>	<u>Charge</u> <u>(\$/100 cu. ft.)</u> <u>(7/1/12)</u>	<u>Charge</u> <u>(\$/100 cu. ft.)</u> <u>(7/1/13)</u>	<u>Charge</u> <u>(\$/100 cu. ft.)</u> <u>(7/1/14)</u>	<u>Charge</u> <u>(\$/100 cu. ft.)</u> <u>(7/1/15)</u>
0 - 15	\$0.830	\$1.079	\$1.316	\$1.356	\$1.397
16 - 30	\$1.079	\$1.403	\$1.711	\$1.763	\$1.816
31 - 70	\$1.726	\$2.244	\$2.737	\$2.820	\$2.904
> 70	\$3.280	\$4.264	\$5.202	\$5.358	\$5.519

RESOLUTION NO. 11-7275
PAGE THREE

Multi-Family Residential Accounts – billed per the following charges:

<u>Tiers</u> (100 cu. ft./unit)	Charge (\$/100 cu. ft.) (7/1/11)	Charge (\$/100 cu. ft.) (7/1/12)	Charge (\$/100 cu. ft.) (7/1/13)	Charge (\$/100 cu. ft.) (7/1/14)	Charge (\$/100 cu. ft.) (7/1/15)
0 - 4	\$0.830	\$1.079	\$1.316	\$1.356	\$1.397
5 - 10	\$1.079	\$1.403	\$1.711	\$1.763	\$1.816
11 - 19	\$1.726	\$2.244	\$2.737	\$2.820	\$2.904
> 19	\$3.280	\$4.264	\$5.202	\$5.358	\$5.519

Non-Residential, Dedicated Potable Water Irrigation, and Dedicated Fire Service Accounts – billed per the following charges:

<u>Tiers</u> (100 cu. ft.)	Charge (\$/100 cu. ft.) (7/1/11)	Charge (\$/100 cu. ft.) (7/1/12)	Charge (\$/100 cu. ft.) (7/1/13)	Charge (\$/100 cu. ft.) (7/1/14)	Charge (\$/100 cu. ft.) (7/1/15)
0 - 50	\$1.180	\$1.534	\$1.871	\$1.928	\$1.985
51 – 27,500	\$1.416	\$1.841	\$2.246	\$2.313	\$2.383
27,501 – 30,000	\$1.982	\$2.577	\$3.143	\$3.238	\$3.335
> 30,000	\$3.280	\$4.264	\$5.202	\$5.358	\$5.519

Recycled Water Accounts (Residential or Non-Residential) – billed per the following charges:

<u>Tiers</u> (100 cu. ft.)	Charge (\$/100 cu. ft.) (7/1/11)	Charge (\$/100 cu. ft.) (7/1/12)	Charge (\$/100 cu. ft.) (7/1/13)	Charge (\$/100 cu. ft.) (7/1/14)	Charge (\$/100 cu. ft.) (7/1/15)
0 – 1,000	\$1.003	\$1.304	\$1.591	\$1.638	\$1.688
1,001 – 5,500	\$1.204	\$1.565	\$1.910	\$1.967	\$2.026
> 5,500	\$1.685	\$2.191	\$2.672	\$2.753	\$2.835

Accounts with compound water meters shall be billed one variable bi-monthly usage charge equal to the sum of the water usage associated with both the smaller and larger sides of the compound meter.

(3) Customer Classifications

Customers deemed by the City to qualify under more than one type of customer classification will be charged the higher of the associated rates.

SECTION 3. Sections 2 and 3 of Resolution No. 05-6861 adopted June 28, 2005, containing current rates for water service, are hereby repealed. Remaining provisions of Resolution No. 05-6861 setting rates for the state mandated solid waste recycling program (AB 939 Solid Waste Reduction), excluding Section 4 which was previously repealed, shall remain in full force and effect.

RESOLUTION NO. 11-7275
PAGE FOUR

SECTION 4. The City Clerk shall certify to the adoption of this Resolution and provide for appropriate distribution thereof.

APPROVED AND ADOPTED this 28th day of June, 2011.

LUIS H. MARQUEZ
LUIS H. MARQUEZ, Mayor

ATTEST:

JOYCE E. DOYLE
JOYCE E. DOYLE, Interim City Clerk

I HEREBY CERTIFY that the foregoing Resolution was adopted by the City Council of the City of Downey at a regular meeting held on the 28th day of June, 2011, by the following vote, to wit:

AYES: Council Members: Brossmer, Gafin, Guerra, Vasquez, Mayor Marquez
NOES: Council Member: None
ABSENT: Council Member: None
ABSTAIN: Council Member: None

JOYCE E. DOYLE
JOYCE E. DOYLE, Interim City Clerk

APPENDIX J

**ANNUAL CALIFORNIA URBAN WATER CONSERVATION COUNCIL (CUWCC)
REPORTS**

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2009 Report

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The fields in red are required.



Agency name: First name:

Reporting unit name (District name): Last name:

Reporting unit number: Email:

You must enter the re **Submit Form** w agency. Click here to open a table to obtain this number.

Base Year Data

[Link to FAQs](#)

Reporting Unit Base Year What is your reporting period?

Base Year

BMP 1.3 Metering

Number of unmetered accounts in Base Year

BMP 3.1 & BMP 3.2 & BMP 3.3 Residential Programs

Number of Single Family Customers in Base Year

Number of Multi Family Units in Base Year

BMP 3.4 WaterSense Specification (WSS) Toilets

Number of Single Family Housing Units constructed prior to 1992

Number of Multi Family Units prior to 1992

Average number of toilets per single family household

Average number of toilets per multi family household

Five year average resale rate of single family households

Five-year average resale rate of multi family households

Average number of persons per single family household

Average number of persons per multi family household

BMP 4.0 & BMP 5.0 CII & Landscape

Total water use (in Acre Feet) by CII accounts

Number of accounts with dedicated irrigation meters

Number of CII accounts without meters or with Mixed Use Meters

Number of CII accounts

Comments:

We could not find solid data for the entries of BMP 3.4 above even we follow suggested source of information such as local realtors association and census data etc.

The fields in red are required.



Agency name:

Reporting unit name (District name):

Reporting unit number:

Primary contact:

First name:

Last name:

Email:

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

[Link to FAQs](#)

2009

BMP 1.1 Operations Practices

Comments:

[See the complete MOU:](#) [View MOU](#)

[See the coverage requirements for this BMP:](#)

Conservation Coordinator

Conservation Coordinator Yes No

Contact Information

First Name:

Last Name:

Title:

Phone:

Email:

Note that the contact information may be the same as the primary contact information at the top of the page. If this is your case, excuse the inconvenience but please enter the information again.

Water Waste Prevention

Water Agency shall do one or more of the following:

- a. Enact and enforce an ordinance or establish terms of service that prohibit water waste
- b. Enact and enforce an ordinance or establish terms of service for water efficient design in new development
- c. Support legislation or regulations that prohibit water waste
- d. Enact an ordinance or establish terms of service to facilitate implementation of water shortage response measures
- e. Support local ordinances that prohibit water waste
- f. Support local ordinances that establish permits requirements for water efficient design in new

To document this BMP, provide the following:

- a. A description of, or electronic link to, any ordinances or terms of service
- b. A description of, or electronic link to, any ordinances or requirements adopted by local jurisdictions or regulatory agencies with the water agency's service area.
- c. A description of any water agency efforts to cooperate with other entities in the adoption or enforcement of local requirement
- d. description of agency support positions with respect to adoption of legislation or regulations

You can show your documentation by providing files, links (web addresses), and/or entering a description.

File name(s): Email files to natalie@cuwcc.org

Web address(s) URL: comma-separated list

Enter a description:

The fields in red are required.

Primary contact:



Agency name: City of Downey

First name: Jason

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Reporting unit name (District name): City of Downey

Last name: Wen

Reporting unit number: 6990

Email: jwen@downeyca.org

[Link to FAQs](#)

[View MOU](#)

2009 BMP 1.2 Water Loss Control

Did your agency complete a pre-screening system audit in 2009? Yes No

If yes, answer the following:

Determine metered sales in AF:

Definition: other accountable uses not included in metered sales, such as unbilled water use, fire suppression, etc.

Determine system verifiable uses AF:

Determine total supply into the system in AF:

Does your agency keep necessary data on file to verify the answers above? Yes No

Did your agency complete a full-scale system water audit during 2009? Yes No

Does your agency maintain in-house records of audit results or the completed AWWA worksheet for the completed audit which could be forwarded to CUWCC? Yes No

Did your agency operate a system leak detection program? Yes No

Comments:

We closely monitor the water loss data by water supply and water usage information; respond quickly on any reported leaks; closely monitor any high water use account and followed by field investigation.

The fields in red are required.

Primary contact:

Agency name: City of Downey

First name: Jason

Reporting unit name (District name): City of Downey

Last name: Wen

Reporting unit number: 6990

Email: jwen@downeyca.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.



BMP 1.3 Metering with Commodity

[Link to FAQs](#)

[See the complete MOU: View MOU](#)

[See the coverage requirements for this BMP:](#)

Implementation

Does your agency have any unmetered service connections? Yes No

If YES, has your agency completed a meter retrofit plan? Yes No

Enter the number of previously unmetered accounts fitted with meters during reporting year:

Are all new service connections being metered? Yes No

Are all new service connections being billed volumetrically? Yes No

Has your agency completed and submitted electronically to the Council a written plan, policy or program to test, repair and replace meters? Yes No

Please Fill Out The Following Matrix

Account Type	# Metered Accounts	# Metered Accounts Read	# Metered Accounts Billed by Volume	Billing Frequency Per Year	# of estimated bills/yr
Single-Family	18,658	18,658	18,658	Bi-monthly	
Multi-Family	1,924	1,924	1,924	Bi-monthly	
Commercial	1,266	1,266	1,266	Bi-monthly	
Industrial	39	39	39	Bi-monthly	
Institutional	241	241	241	Bi-monthly	
Dedicated Irrigatic	165	165	165	Bi-monthly	
System Flushing				Bi-monthly	
Fire Lines	298	298	298	Bi-monthly	
Other	4	4	4	Bi-monthly	
Other				Other	

Number of CII Accounts with Mixed-use Meters

Number of CII Accounts with Mixed-use Meters Retrofitted with Dedicated Irrigation Meters during Reporting Period

Feasibility Study

Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? Yes No

If YES, please fill in the following information:

A. When was the Feasibility Study conducted

B. Email or provide a link to the feasibility study (or description of):

File name(s): Email files to natalie@cuwcc.org

Web address(s) URL: comma-separated list

General Comments about BMP 1.3:

The system has 100% metered services and also every metered account is billed by

The fields in red are required.

Agency name: City of Downey

Reporting unit name (District name): City of Downey

Reporting unit number: 6990

Primary contact:

First name: Jason

Last name: Wen

Email: jwen@downeyca.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.



2009

BMP 1.4 Retail Conservation Pricing

[Link to FAQs](#)

[View MOU](#)

If you are reporting more rate structures than this form allows, add the structures to a spreadsheet and send the file to natalie@cuwcc.org.

Implementation (Water Rate Structure)

Enter the Water Rate Structures that are assigned to the majority of your customers, by customer class

Rate Structure	Customer Class	Total Revenue	Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Increasing Block	Select a Customer Ty	7,128,476.00		1,538,453.00
Select a Rate Struc	Other			
Select a Rate Struc	Other			
Select a Rate Struc	Other			
Select a Rate Struc	Other			
Select a Rate Struc	Other			
Select a Rate Struc	Other			

Implementation Option (Conservation Pricing Option)

- Use Annual Revenue As Reported
- Use Canadian Water & Wastewater Association Rate Design Model

If CWWA is select, enter the file name and email the spreadsheet to natalie@cuwcc.org

Retail Waste Water (Sewer) Rate Structure by Customer Class

Agency Provide Sewer Service Yes No

Select the Retail Waste Water(Sewer) Rate Structure assigned to the majority of your customers within a specific customer class.

Rate Structure	Customer Class	Total Revenue	Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Uniform	Other	0.00		160,337.00
Other	Other			
Select a Rate Struc	Other			
Select a Rate Struc	Other			
Select a Rate Struc	Other			
Select a Rate Struc	Other			

Comments:

Water: 3 tiered rates for all types of water customers; Sewer: Uniform Rates based on

Is a Wholesale Agency Performing Website Updates?

Did one or more CUWCC wholesale agencies agree to assume your agency's responsibility for meeting the requirements of and for CUWCC reporting of this BMP?

Yes No

Central Basin MWD
MWDSC

Enter the name(s) of the wholesale agency (comma delimited)

Is Your Agency Performing Website Updates?

Enter your agency's URL (website address):

www.downeyca.org

Describe a minimum of four water conservation related updates to your agency's website that took place during the year:

Water Conservation Tips
Finding leaks
Pool and Spa tips
HETs

Did at least one Website Update take place during each quarter of the reporting year?

Yes No

Public Outreach Annual Budget

Enter budget for public outreach programs. You may enter total budget in a single line or break the budget into discrete categories by entering many rows. Please indicate if personnel costs are included in the entry.

Category	Amount	Personnel Costs Included? <i>If yes, check the box.</i>	Comments
Special Acct	\$50,000	<input type="checkbox"/>	
		<input type="checkbox"/>	

Comments:

The fields in red are required.



Agency name: Primary contact: First name: Last name: Email:

Reporting unit name (District name):

Reporting unit number:

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

[Link to FAQs](#)

2009

BMP 2.1 Public Outreach Cont'd

[View MOU](#)

Public Outreach Expenses

Enter expenses for public outreach programs. Please include the same kind of expenses you included in the question related to your budget (Section 2.1.7, above). For example, if you included personnel costs in the budget entered above, be sure to include them here as well.

Expense Category	Expense Amount	Personnel Costs Included?
Report to customers	\$9,938	<input type="checkbox"/> If yes, check the check box.
LivingWise Program	\$9,682	<input checked="" type="checkbox"/>
Public Events (2)	\$1,000	<input checked="" type="checkbox"/>
Community Papers	\$4,000	<input type="checkbox"/>

Additional Public Information Program

Please report additional public information contacts. List these additional contacts in order of how your agency views their importance / effectiveness with respect to conserving water, with the most important/ effective listed first (where 1 = most important).

Were there additional Public Outreach efforts? Yes No

Public Outreach Additional Information

Public Information Programs	Importance

Social Marketing Programs

Branding

Does your agency have a water conservation "brand," "theme" or mascot? Yes No

Describe the brand, theme or mascot.

Market Research

Have you sponsored or participated in market research to refine your message? Yes No

Market Research Topic	
Brand Message	
Brand Mission Statement	

Community Committees

Do you have a community conservation committee? Yes No

Enter the names of the community committees:

Downey Green Task Force

Training

Training Type	# of Trainings	# of Attendees	Description of Other

Social Marketing Expenditures

Public Outreach Social Marketing Expenses

Expense Category	Expense Amount	Description

Partnering Programs - Partners

Name	Type of Program
<input type="checkbox"/> CLCA?	
<input type="checkbox"/> Green Building Programs?	
<input type="checkbox"/> Master Gardeners?	
<input checked="" type="checkbox"/> Cooperative Extension?	CBMWD on LivingWise Program
<input type="checkbox"/> Local Colleges?	
<input type="checkbox"/> Other	
<input type="checkbox"/> Retail and wholesale outlet; name(s) and type(s) of programs:	

Partnering Programs - Newsletters

Number of newsletters per year

Number of customers per year

22500

Partnering with Other Utilities

Describe other utilities your agency partners with, including electrical utilities

So. Calif. Edison.
The Gas Company

Conservation Gardens

Describe water conservation gardens at your agency or other high traffic areas or new

Landscape contests or awards

Describe water wise landscape contest or awards program conducted by your agency

Comments:

[Redacted area]

The fields in red are required.

Primary contact:

Agency name:

First name:

Reporting unit name (District name):

Last name:

Reporting unit number:

Email:

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.



[Link to FAQs](#)

2009

BMP 2.2 School Education Programs, Retail Agencies School Programs

[View MOU](#)

Is a wholesale agency implementing school programs which can be counted to help your agency comply with this BMP?

Yes No

Enter Wholesaler Names, separated by commas:

Materials meet state education framework requirements?

Description of Materials

Materials distributed to K-6 Students?

Description of materials distributed to K-6 Students

Number of students reached

Materials distributed to 7-12 Students?

Description of materials distributed to 7-12 Students

Number of Distribution

Annual budget for school education program

Description of all other water supplier education programs

School Program Activities

Classroom presentations:

Number of presentations

Number of attendees

Large group assemblies:

Number of presentations

Number of attendees

Children's water festivals or other events:

Number of presentations

Number of attendees

Cooperative efforts with existing science/water education programs (various workshops, science fair awards or judging) and follow-up:

Number of presentations

Number of attendees

Other methods of disseminating information (i.e. themed age-appropriate classroom loaner kits):

Description

Number distributed

Staffing children's booths at events & festivals:

Number of booths Number of attendees

Water conservation contests such as poster and photo:

Description

Number distributed

Offer monetary awards/funding or scholarships to students:

Number Offered Total Funding

Teacher training workshops:

Number of presentations Number of attendees

Fund and/or staff student field trips to treatment facilities, recycling facilities, water conservation gardens, etc.:

Number of tours or field trips Number of participants

College internships in water conservation offered:

Number of internships Total funding

Career fairs/workshops:

Number of presentations Number of attendees

Additional program(s) supported by agency but not mentioned above:

Description

Number of events (if applicable) Number of participants

Total reporting period budget expenditures for school education programs (include all agency costs):

Comments



The fields in red are required.



Agency name:

Reporting unit name (District name):

Reporting unit number:

Primary contact:

First name:

Last name:

Email:

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

[Link to FAQs](#)
[View MOU](#)

2009

BMP 3 Residential

Traditional
 (Sections A - D)

Flex Track
 (All Sections)

For Traditional Track please answer the fields within the traditional boxes.

For Flex Track option, please answer the fields within the flex track boxes.

You must enter all measured water savings manually. For each measure entered, upload a spreadsheet with sufficient information to show the way that water savings were measured and that the measure was adequately tracked (i.e., all relevant data was collected) - in some cases there are specific data points also requested in form which are necessary to show that the measure was implemented as described.

A) Residential Assistance / Leak Detection

			Total Water Savings AF/YR	Measured Water Savings AF/YR
	Single Family	Multi Family		
Traditional	Total Number of Accounts	18,658.00	1,924.00	
	Total Number of Participants Overall			
	Total Number of Leak Det Surveys			
	Total Number of Showerheads			
	Total Number of Faucet Aerators			
	Total Number of Landscape Water Survey			
	Number of Other Components			
Flex Track	Description of Other Components Distributed			

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
 (Enter the file name and Email file to Natalie@cuwcc.org)

B) High Efficiency Clothes Washers (HECWs)

Flex Track	Traditional	Number of incentives for HECWs with an AVERAGE Water Factor of 5.0	<input type="text" value="11.00"/>	Measured water savings (AF/Year)
		Are Financial incentives provided for HECWs ?	<input checked="" type="radio"/> Yes <input type="radio"/> No	
		Has your Agency completed a HECW Market Penetration Study (this question does not impact your coverage report, purely informational)	<input type="radio"/> Yes <input checked="" type="radio"/> No	
		HECW Market Penetration Study Documents (Enter the file name and Email file to Natalie@cuwcc.org)	<input type="text"/>	

If you are using your own water-savings measure, send your supporting spreadsheet
 Enter the file name and Email to Natalie@cuwcc.org

C) WaterSense Specification (WSS) Toilets

(Agency must complete information for at least one coverage option (For Traditional 1, 2, or 3; For Flex Tarck 1, 2, 3, or 4).
 You are encouraged to include information on other coverage options, as available.
 If seeking credit for additional water savings, you must select Flex Track option)

Traditional

1. Retrofit Resale Ordinance is in Place Yes No

If Yes, Choose A File (Enter the file name and Email file to Natalie@cuwcc.org)

2. A 75% Market Saturation Achieved Yes No

If yes, Choose A File (Enter the file name and Email file to Natalie@cuwcc.org)

3. WSS Toilets Installed

	Single Family	Multi Family
Number of WSS Toilets Installed	96.00	538.00
Measured Water Savings AF/YR		

Flex Track

4. Non-WSS Toilets

Type of Toilets	Single Family		Multi Family	
	Number of Toilets	Water Savings	Number of Toilets	Water Savings
Select an Option				

Description of Other Non-WSS Type of Toilets

If you are using your own water-savings measure, send your supporting spreadsheet
 Enter the file name and Email to Natalie@cuwcc.org

D) WSS for New Residential Development

(Agency must complete information for at least one coverage option. You are encouraged to include information on other coverage options, as available. If seeking credit for additional water savings you must select the Flex Track option)

E) High bill contact with single-family and multi-family customers

Measured water savings (AF/Year)

Select the Types of Contact:

- Email
 Phone
 Letter
 Others (describe)

Upload sample of contact contents (email, letter, etc.)

- if applicable; enter the file name and email file to Natalie@cuwcc.org

Who initiated the contact:

(Please Specify customer, agencies, or both)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)

(Enter the file name and Email file to Natalie@cuwcc.org)

F) Educate residential customers about the behavioral aspects of water conservation

Measured water savings (AF/Year)

Select types of educational methods used:

- Workshop
 Community Event
 Letter
 On-Site Visit
 Phone Call
 Water Survey
 Website Hit
 Door Hanger
 Other (Describe)

Events

Customers Reached

<input type="text"/>	<input type="text"/>

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)

(Enter the file name and Email file to Natalie@cuwcc.org)

G) Notify residential customers of leaks on the customer's side of the meter

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

J) Install residence water use monitors.

Type of Monitor	Brand	Number Installed	Measured water savings (AF/Year)
<input type="checkbox"/> Dashboard	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Leak Detector	<input type="text"/>	<input type="text"/>	
<input type="checkbox"/> Data Logger	<input type="text"/>	<input type="text"/>	

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

K) Participate in programs that provide residences with school water conservation kits.

Number of Kits Distributed

Kit contents (including model of fixtures)

List of what was actually installed in the homes (number of showerheads, aerators etc.)

Measured water savings (AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

L) Implement an automatic meter reading program for residential customers.

AMR or AMI Type of Network

Number of connections installed

Is your agency using these to contact high water-use customers?

Measured water savings (AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

OTHER Types of Measures.

Type of Program	Sample / Description	Measured Water Savings (AF/YR)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

Comments

The fields in red are required.



Agency name:

Reporting unit name (District name):

Reporting unit number:

Primary contact:

First name:

Last name:

Email:

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

2009

[Link to FAQs](#)
[View MOU](#)

BMP 4 CII

Traditional
(Section A - L)

Flex Track
(All Sections)

For Traditional Track please answer the fields within the traditional boxes.

For Flex Track option, please answer the fields within the flex track boxes.

You must enter all measured water savings manually in the summary cells on the right. For each measure entered, upload a spreadsheet with sufficient information to show the way that water savings was measured and that the measure was adequately tracked (i.e., all relevant data was collected) - in some cases there are specific data points also requested in the flex track data entry form which are necessary to show that the measure was implemented as described.

CII Type of measure implemented

Traditional	A) High - Efficiency Toilets.		Measured water savings (AF/Year) <input type="text"/>
	Number	<input type="text" value="538"/>	
Flex Track	Type of program	<input type="text" value="Incentive"/>	Council's Annual Water Savings 0.041748 AF per device
	Other type of program	<input type="text" value="Direct Distribution at public event"/>	
	Do you accept the Council's default savings number for this measure? <input checked="" type="radio"/> Yes <input type="radio"/> No		
	If not, Please provide the following:		
Total Measured Water Savings(AF/Year)	<input type="text"/>		
Measure life (years)	<input type="text"/>		
Lifetime water savings (years)	<input type="text"/>		
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org			
<input type="text"/>			

B) High -Efficiency Urinals (0.5 gpf)

Flex Track	Traditional	Number	<input type="text"/>	Measured water savings (AF/Year)	<input type="text"/>
		Type of program	<input type="text"/>		
Other type of program	<input type="text"/>				
		Do you accept the Council's default savings number for this measure?	<input type="radio"/> Yes <input type="radio"/> No	Council's Annual Water Savings 0.069086 AF per device	
		If not, Please provide the following			
		Total Measured Water Savings(AF/Year)	<input type="text"/>		
		Measure life (years)	<input type="text"/>		
		Lifetime water savings (years)	<input type="text"/>		
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org					

C) Ultra Low Volume Urinals (0.125 gpf)

Flex Track	Traditional	Number	<input type="text"/>	Measured water savings (AF/Year)	<input type="text"/>
		Type of program	Select an Option		
Other type of program	<input type="text"/>				
		Do you accept the Council's default savings number for this measure?	<input type="radio"/> Yes <input type="radio"/> No	Council's Annual Water Savings 0.080603 AF per device	
		If not, Please provide the following			
		Total Measured Water Savings(AF/Year)	<input type="text"/>		
		Measure life (years)	<input type="text"/>		
		Lifetime water savings (years)	<input type="text"/>		
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org					

D) Zero Consumption Urinals (0.0 gpf)

Flex Track	Traditional	Number	15	Measured water savings (AF/Year)	<input type="text"/>
		Type of program	Incentive		
Other type of program	<input type="text"/>				
		Do you accept the Council's default savings number for this measure?	<input checked="" type="radio"/> Yes <input type="radio"/> No		

Flex Track	If not, Please provide the following:		Council's Annual Water Savings 0.0921146 AF per device
	Total Measured Water Savings(AF/Year)	<input type="text"/>	
	Measure life (years)	<input type="text"/>	
	Lifetime water savings (years)	<input type="text"/>	
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org			

E) Commercial High - Efficiency Single Load Clothes Washers

Traditional	Number	<input type="text" value="11"/>	Measured water savings (AF/Year) <input type="text"/>
	Type of program	<input type="text" value="Incentive"/>	
	Other type of program	<input type="text"/>	
Flex Track	Do you accept the Council's default savings number for this measure ? <input checked="" type="radio"/> Yes <input type="radio"/> No		Council's Annual Water Savings 0.116618 AF per device
	If not , Please provide the following:		
	Total Measured Water Savings(AF/Year)	<input type="text"/>	
	Measure life (years)	<input type="text"/>	
	Lifetime water savings (years)	<input type="text"/>	
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org			

F) Cooling Tower Conductivity Controllers.

Traditional	Number	<input type="text"/>	Measured water savings (AF/Year) <input type="text"/>
	Type of program	<input type="text" value="Select an Option"/>	
	Other type of program	<input type="text"/>	
Flex Track	Do you accept the Council's default savings number for this measure ? <input type="radio"/> Yes <input type="radio"/> No		Council's Annual Water Savings 1.032250 AF per device
	If not, Please provide the following:		
	Total Measured Water Savings(AF/Year)	<input type="text"/>	
	Measure life (years)	<input type="text"/>	
	Lifetime water savings (years)	<input type="text"/>	
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org			

G) Cooling Tower pH Controllers

Traditional	Number	<input type="text"/>	Measured water savings (AF/Year)
	Type of program	<input type="text" value="Select an Option"/>	
	Other type of program	<input type="text"/>	
Flex Track	Do you accept the Council's default savings number for this measure ? <input type="radio"/> Yes <input type="radio"/> No		Council's Annual Water Savings 3.981543 AF per device
	If not, Please provide the following:		
	Total Measured Water Savings(AF/Year)	<input type="text"/>	
	Measure life (years)	<input type="text"/>	
	Lifetime water savings (years)	<input type="text"/>	
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org			

H) Connectionless Food Steamers.

Traditional	Number	<input type="text"/>	Measured water savings (AF/Year)
	Type of program	<input type="text"/>	
	Other type of program	<input type="text"/>	
Flex Track	Do you accept the Council's default savings number for this measure ? <input type="radio"/> Yes <input type="radio"/> No		Council's Annual Water Savings 0.25 AF per Steamer Compartment
	If not, Please provide the following:		
	Total Measured Water Savings(AF/Year)	<input type="text"/>	
	Measure life (years)	<input type="text"/>	
	Lifetime water savings (years)	<input type="text"/>	
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org			

I) Medical Equipment Steam Sterilizers

Flex Track	Traditional	Number	<input type="text"/>	Measured water savings (AF/Year)
		Type of program	<input type="text"/>	
		Other type of program	<input type="text"/>	

Flex Track	Do you accept the Council's default savings number for this measure? <input type="radio"/> Yes <input type="radio"/> No	Council's Annual Water Savings 1.538 AF per device
	If not, Please provide the following:	
	Total Measured Water Savings(AF/Year) <input type="text"/>	
	Measure life (years) <input type="text"/>	
	Lifetime water savings (years) <input type="text"/>	
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org		

J) Water - Efficient Ice Machines.

Traditional	Number <input type="text"/>	Measured water savings (AF/Year) <input type="text"/>
	Type of program <input type="text" value="Select an Option"/>	
	Other type of program <input type="text"/>	
Flex Track	Do you accept the Council's default savings number for this measure ? <input type="radio"/> Yes <input type="radio"/> No	Council's Annual Water Savings 0.0834507 AF per device
	If not, Please provide the following:	
	Total Measured Water Savings(AF/Year) <input type="text"/>	
	Measure life (years) <input type="text"/>	
	Lifetime water savings (years) <input type="text"/>	
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org		

K) Pressurized Water Brooms.

Traditional	Number <input type="text" value="10"/>	Measured water savings (AF/Year) <input type="text"/>
	Type of program <input type="text" value="Direct install"/>	
	Other type of program <input type="text"/>	
Flex Track	Do you accept the Council's default savings number for this measure? <input type="radio"/> Yes <input type="radio"/> No	Council's Annual Water Savings 0.1534 AF per device

Flex Track

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

L) Dry Vacuum Pumps.

Traditional	Number	<input type="text"/>	Measured water savings (AF/Year)
	Type of program	<input type="text" value="Select an Option"/>	
	Other type of program	<input type="text"/>	

Flex Track	Do you accept the Council's default savings number for this measure ? <input type="radio"/> Yes <input type="radio"/> No	Council's Annual Water Savings 0.064 AF per device
	If not, Please provide the following:	

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

Traditional Reporting Stop Here, Do not continue

Flex Track Reporting Please Continue...

M) Industrial Process Water Use Reduction.

	Number	<input type="text"/>	Measured water savings (AF/Year)
	Type of program	<input type="text" value="Select an Option"/>	
	Other type of program	<input type="text"/>	

Type of Process Water Reduced

If re-using water, what was the secondary use of the water? (such as pre-rinse cycle or landscaping)

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
 Enter the file name and Email to Natalie@cuwcc.org

N) Commercial Laundry Retrofits.

Number of customers

Type of customer hotels campuses prisons laundromats

Lease / own machines Lease Own Machines Both

Type of program

Other type of program

Measured water savings (AF/Year)

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
 Enter the file name and Email to Natalie@cuwcc.org

O) Industrial Laundry Retrofits.

Total Number of customers

Total Volume of laundry processed annually

Type of program

Measured water savings (AF/Year)

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

P) Filter Upgrades (for pools, spas, and fountains).

Number of pools upgraded

Number of spas upgraded

Number of fountains upgraded

Type of program

Other type of program

Measured water savings (AF/Year)

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

Q) Car Wash Reclamation Systems

Measured water savings (AF/Year)

	Conveyor	In-bay
Total Number of program participants (accounts)	<input type="text"/>	<input type="text"/>
Total Number of vehicles washed annually	<input type="text"/>	<input type="text"/>
Do you accept the Council's default savings number for this measure?	<input type="radio"/> Yes <input type="radio"/> No	
If not, Please provide the following:	Council's Annual Water Savings 0.00004607 (or 15 gals) per vehicle	
Total Measured Water Savings(AF/Year)	<input type="text"/>	
Measure life (years)	<input type="text"/>	
Lifetime water savings (years)	<input type="text"/>	
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org		
<input type="text"/>		

R) Wet Cleaning.

Brief description of program		Measured water savings (AF/Year)
		<input type="text"/>
Total Measured Water Savings(AF/Year)	<input type="text"/>	
Measure life (years)	<input type="text"/>	
Lifetime water savings (years)	<input type="text"/>	
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org		
<input type="text"/>		

S) Water Audits (To avoid double counting, do not include device/replacement water savings.)

Number of water audits by type of business		Measured water savings (AF/Year)
Auto	<input type="text"/>	<input type="text"/>
Food	<input type="text"/>	
Health	<input type="text"/>	
Hotels	<input type="text"/>	

Manufacturing	<input type="text"/>
Membership	<input type="text"/>
Multi-use	<input type="text"/>
Office	<input type="text"/>
Religious	<input type="text"/>
Restaurant	<input type="text"/>
Retail/ Wholesale	<input type="text"/>
School	<input type="text"/>
Other (with description)	<input type="text"/>
Description of Other	<input type="text"/>

Total Measured Water Savings(AF/Year)	<input type="text"/>
Measure life (years)	<input type="text"/>
Lifetime water savings (years)	<input type="text"/>

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org



T) Clean In Place (CIP) Technology
(such as bottle sterilization in a beverage processing plant)

		Measured water savings (AF/Year)
Number of customers	<input type="text"/>	<input type="text"/>
Type of program	<input type="text" value="Select an Option"/>	
Other type of program	<input type="text"/>	

Total Measured Water Savings(AF/Year)	<input type="text"/>
Measure life (years)	<input type="text"/>

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

U) Waterless Wok

Number

Measured
water savings
(AF/Year)

Type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

V) Alternative On-site Water Sources (For Rain Water Harvesting, commercial rain barrels are excluded. For Foundation Drain Water, exclude permeable paving.)

Measured
water savings
(AF/Year)

Select type	Number	Description
<input type="checkbox"/> Cooling Condensate	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Foundation Drain Water	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Gray Water	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Storm Water	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Rain Water	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Pond and Water Feature Recycling	<input type="text"/>	<input type="text"/>

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
 Enter the file name and Email to Natalie@cuwcc.org

W) Sub - metering

**Measured
water savings
(AF/Year)**

Select type	Number	Description	<input type="text"/>
<input type="checkbox"/> Condominiums	<input type="text"/>	<input type="text"/>	
<input type="checkbox"/> Apartments	<input type="text"/>	<input type="text"/>	
<input type="checkbox"/> Mobile Homes	<input type="text"/>	<input type="text"/>	

Do you accept the Council's default savings numbers for this measure? Yes No

Council's Annual Water Savings
 Appartments & Condos=0.024419 AF/YR
 Mobile Home = 0.056774 AF/Yr

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
 Enter the file name and Email to Natalie@cuwcc.org

X) High Efficiency Showerheads

**Measured
water savings
(AF/Year)**

Number	<input type="text"/>	
Type of program	Select an Option	<input type="text"/>
Other type of program	<input type="text"/>	

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

Y) Faucet Flow Restrictors

**Measured
water savings
(AF/Year)**

Number

Type of program

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

Z) Water Efficient Dishwashers

**Measured
water savings
(AF/Year)**

Select type Number

Rack

Conveyor

Other

Description of Other

Type of program

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

AA) Hot Water on Demand

**Measured
water savings
(AF/Year)**

Number

Type of program

Select an Option

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

BB) Pre-rinse Spray Valves of 1.3 gpm (gallons per minute) or less

**Measured
water savings
(AF/Year)**

Number

Type of program

Select an Option

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
 Enter the file name and Email to Natalie@cuwcc.org

CC) Central Flush Systems

Number	<input type="text"/>	Measured water savings (AF/Year)
Type of program	<input type="text" value="Select an Option"/>	<input type="text"/>
Other type of program	<input type="text"/>	

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
 Enter the file name and Email to Natalie@cuwcc.org

Other Measures chosen by the Agency

Description of program	<input type="text"/>	Measured water savings (AF/Year)
Sample (if applicable)	<input type="text"/>	<input type="text"/>

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
 Enter the file name and Email to Natalie@cuwcc.org



The fields in red are required.

Agency name:

Reporting unit name (District name):

Reporting unit number:

Primary contact:
 First name:
 Last name:
 Email:

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

2009

BMP 5 Landscape

[Link to FAQs](#)
[View MOU](#)

Traditional

Flex Track

For Traditional Track please answer the fields within the traditional boxes.

For Flex Track option, please answer the fields within the flex track boxes.

You must enter all measured water savings manually. For each measure entered, upload a spreadsheet with sufficient information to show the way that water savings were measured and that the measure was adequately tracked (i.e., all relevant data was collected) - in some cases there are specific data point also requested in form which are necessary to show that the measure was implemented as described.

Accounts with Dedicated Irrigation Meters

Traditional	Number of dedicated irrigation meter accounts	<input type="text" value="165.00"/>
	Number of dedicated irrigation meter accounts with water budgets	<input type="text"/>
	Aggregate water use for dedicated non-recreational landscape accounts with budgets	<input type="text"/>
	Aggregate acreage assigned water budgets for dedicated non-recreational landscape accounts with budgets	<input type="text"/>
	Preserved water use records and budgets for customers with dedicated landscape irrigation accounts for at least four years	<input checked="" type="radio"/> Yes <input type="radio"/> No
Flex Track	Water Savings from Accounts with dedicated Irrigation meters with water budgets (Acre Feet)	<input type="text"/>
	If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data) (Enter the file name and Email file to Natalie@cuwcc.org)	

Technical Assistance

Traditional	Number of Accounts 20% over-budget	<input type="text"/>	Measured water savings (AF/Year)
	Number of accounts 20% over-budget offered technical assistance	<input type="text"/>	
	Number of accounts 20% over-budget accepting technical assistance	<input type="text"/>	
	If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data) (Enter the file name and Email file to Natalie@cuwcc.org)		
Flex Track			

Irrigation Water Use Surveys for Mixed-use and Un-metered Accounts

Traditional	Number of mixed use and un-metered accounts	<input type="text" value="263.00"/>	Measured water savings (AF/Year) <input type="text"/>
	Number of irrigation water use surveys offered (cumulative, all years)	<input type="text"/>	
	Number of irrigation water use surveys accepted (cumulative)	<input type="text"/>	
	Can your Agency estimate the amount of landscape acreage for mixed use and Un-metered accounts	<input type="radio"/> Yes <input checked="" type="radio"/> No	
	If Yes, Aggregate acreage for mixed use and Un-metered accounts	<input type="text"/>	
	Estimated water demand from acreage for mixed use and Un-metered accounts	<input type="text"/>	
	Annual water savings by customers receiving irrigation water savings surveys and implementing recommendations	<input type="text"/>	
Flex Track	If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data) (Enter the file name and Email file to Natalie@cuwcc.org)		<input type="text"/>

Financial Incentives

Traditional	Have you implemented and maintained an irrigation equipment retrofit incentive program? <input type="radio"/> Yes <input checked="" type="radio"/> No			Measured Water Savings (AF/YR) <input type="text"/>
	Number of incentives	Dollar value of incentives	Incentive Types	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
Flex Track	If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data) (Enter the file name and Email file to Natalie@cuwcc.org)			<input type="text"/>

**Traditional Reporting Stop Here, Do not continue
Flex Track Reporting Please Continue...**

Landscape Flex Track Measure Types

1. Monitor and report on landscape water use

A) Measure landscapes and develop water budgets for customers with dedicated landscape meters. Provide timely water use reports with comparisons of water use to budget that provide customers the information they need to adjust irrigation schedules (such as faxes, twitter, etc. not included in the previous sections).

**Measured
water savings
(AF/Year)**

Enter the Number of sites with:

Dedicated Mixed Meters

Water Budgets

Landscape Measurements

Others (describe)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

B) Measure landscapes and develop water budgets for customers with Mixed Use meters. Provide timely water use reports with comparisons of water use to budget that provide customers the information they need to adjust irrigation schedules.

**Measured
water savings
(AF/Year)**

Enter the Number of sites with:

Dedicated Mixed Meters

Water Budgets

Landscape Measurements

Others (describe)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

C) Establish agency-wide water budget. (Note that: ETo based water budget in the MWELo changed in 2010 from .8ETo to .7ETo.)

Agency-wide total irrigated area

(Acres)

**Measured
water savings
(AF/Year)**

Amount of Water Used

(AF/Acre)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

D) Establish agency-wide, sector-based irrigation goal to reduce water use, based on seasonality.

Number of minimum irrigation goal (AF/Acre)

Amount of Water Used per Period (AF/Period)

**Measured
water savings
(AF/Year)**

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

2. Provide technical landscape resources and training

A) Upon customer requests, provide landscape irrigation management and landscape design information and resources: provide assistance, answer customer questions, respond to run-off and high-bill calls.

Enter the Number of:

Contacts In Person

Contacts over the phone

Contacts via Email

**Measured
water savings
(AF/Year)**

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

B) Perform landscape & irrigation audits: including irrigation scheduling, plant information, and landscape area measurement.

Enter the Number of:

Audits conducted per year

Measurement of square
footage of Turf areas

Measurement of square
footage of NON Turf areas

**Measured
water savings
(AF/Year)**

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

C) Sponsor, co-sponsor, promote, or support landscape workshops, training, presentations and other technical educational events for homeowners and professionals: design, installation, maintenance, water management.

Enter the Number of:

Events

Participants

List Type or
Title of Events

Measured
water savings
(AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

D) Establish Time-of-Day Irrigation Restrictions.

Yes No

Describe Restrictions:

Measured
water savings
(AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

E) Establish Day-of-Week Irrigation Restrictions. Yes No

Describe Restrictions:

Measured
water savings
(AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

3. Provide incentives

A) Establish Landscape budget-based rates. Yes No

Describe Rates:

Measured
water savings
(AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

B) Provide incentives for conversions from mixed-use meters to dedicated landscape meters.

Number of Conversions:

Measured
water savings
(AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

C) Provide incentives for installing sub-meters to separate landscape water use

Number of meters installed:

Measured
water savings
(AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

D) Provide incentives for irrigation equipment upgrades that improve distribution uniformity, irrigation efficiency, or scheduling capabilities.

Select types of irrigation
equipment upgrades:

- Controllers
- Emitters
- Soil moisture sensors
- Pressure Regulators
- Rain shut off devices
- Other (describe)

Number of devices
installed

Measured
water savings
(AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

E) Provide incentives for the reduction of water use over an irrigated area, or reduction in the size of the irrigated area due to replacement of turf or other high water-using plants with low water-using plants, artificial turf, or permeable surfaces.

Acreage of live turf converted to low water-using plants, artificial turf, or permeable surfaces: Acres

Measured water savings (AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

F) Provide incentives for conversions from potable to recycled water.

Number of Conversions:
Number of Incentives:
Funds Invested:

Measured water savings (AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

G) Provide incentives for the use of alternative sources of water in the landscape (i.e. gray water, rainwater, cisterns, etc.)

Number of Conversions:
Number of Incentives:
Funds Invested:

Measured water savings (AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

C) Participate in regional efforts: integrated water resource management, watershed management, NPDES permit agencies, etc.

Yes No

Describe Involvement:

**Measured
water savings
(AF/Year)**

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

5. Develop a holistic approach to landscape water use efficiency

A) Develop and implement a comprehensive landscape water conservation program for all customers. Target marketing efforts to those most likely to result in benefits to both customer and Agency.

Describe Program:

**Measured
water savings
(AF/Year)**

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

6. Other Measures

A) Other Landscape Measures.

Describe Other
Landscape Measures:

**Measured
water savings
(Af/Year)**

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file Natalie@cuwcc.org)

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2010 Report

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The fields in red are required.

Primary contact:

Agency name: First name:

Reporting unit name (District name): Last name:

Reporting unit number: Email:

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.



[Link to FAQs](#)

2010

BMP 1.1 Operations Practices

Comments:

[See the complete MOU:](#) [View MOU](#)

[See the coverage requirements for this BMP:](#)

Conservation Coordinator

Conservation Coordinator Yes No

Contact Information

First Name:

Last Name:

Title:

Phone:

Email:

Note that the contact information may be the same as the primary contact information at the top of the page. If this is your case, excuse the inconvenience but please enter the information again.

Water Waste Prevention

Water Agency shall do one or more of the following:

- a. Enact and enforce an ordinance or establish terms of service that prohibit water waste
- b. Enact and enforce an ordinance or establish terms of service for water efficient design in new development
- c. Support legislation or regulations that prohibit water waste
- d. Enact an ordinance or establish terms of service to facilitate implementation of water shortage response measures
- e. Support local ordinances that prohibit water waste
- f. Support local ordinances that establish permits requirements for water efficient design in new

To document this BMP, provide the following:

- a. A description of, or electronic link to, any ordinances or terms of service
- b. A description of, or electronic link to, any ordinances or requirements adopted by local jurisdictions or regulatory agencies with the water agency's service area.
- c. A description of any water agency efforts to cooperate with other entities in the adoption or enforcement of local requirement
- d. description of agency support positions with respect to adoption of legislation or regulations

You can show your documentation by providing files, links (web addresses), and/or entering a description.

File name(s): Email files to natalie@cuwcc.org

Web address(s) URL: comma-separated list

Enter a description:

The fields in red are required.

Primary contact:

Agency name:

First name:

Reporting unit name (District name)

Last name:

Reporting unit number:

Email:

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.



[Link to FAQs](#)

[View MOU](#)

2010 BMP 1.2 Water Loss Control

AWWA Water Audit

Agency to complete a Water Audit & Balance Using The AWWA Software Yes No
Email to natalie@cuwcc.org - Worksheets (AWWA Water Audit). Enter the name of the file below:

Water Audit Validity Score from AWWA spreadsheet

Agency Completed Training In The AWWA Water Audit Method Yes No

Agency Completed Training In The Component Analysis Process Yes No

Completed/Updated the Component Analysis (at least every 4 years)? Yes No

Component Analysis Completed/Updated Date

Water Loss Performance

Agency Repaired All Reported Leaks & Breaks To The Extent Cost Effective Yes No

Recording Keeping Requirements:

Date/Time Leak Reported	Leak Location
Type of Leaking Pipe Segment or Fitting	Leak Running Time From Report to Repair
Leak Volume Estimate	Cost of Repair

Agency Located and Repaired Unreported Leaks to the Extent Cost Effective Yes No

Type of Program Activities Used to Detect Unreported Leaks

Annual Summary Information

Complete the following table with annual summary information (required for reporting years 2-5 only)

Total Leaks Repaired	Economic Value Of Real Loss	Economic Value Of Apparent Loss	Miles Of System Surveyed For Leaks	Pressure Reduction Undertaken for loss reduction	Cost Of Interventions	Water Saved (AF/Year)

Comments:

The fields in red are required.

Agency name: City of Downey
Reporting unit name (District name): City of Downey
Reporting unit number: 6990

Primary contact:
First name: Jason
Last name: Wen
Email: jwen@downeyca.org

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.



BMP 1.3 Metering with Commodity 2010

[Link to FAQs](#)

[See the complete MOU: View MOU](#)

[See the coverage requirements for this BMP:](#)

Implementation

Does your agency have any unmetered service connections? Yes No

If YES, has your agency completed a meter retrofit plan? Yes No

Enter the number of previously unmetered accounts fitted with meters during reporting year:

Are all new service connections being metered? Yes No

Are all new service connections being billed volumetrically? Yes No

Has your agency completed and submitted electronically to the Council a written plan, policy or program to test, repair and replace meters? Yes No

Please Fill Out The Following Matrix

Account Type	# Metered Accounts	# Metered Accounts Read	# Metered Accounts Billed by Volume	Billing Frequency Per Year	# of estimated bills/yr
Single-Family	18,663	18,663	18,663	Bi-monthly	
Multi-Family	1,925	1,925	1,925	Bi-monthly	
Commercial	1,252	1,252	1,252	Bi-monthly	
Industrial	39	39	39	Bi-monthly	
Institutional	241	241	241	Bi-monthly	
Dedicated Irrigatic	165	165	165	Bi-monthly	
Agricultural	0	0	0	Bi-monthly	
Fire Lines	298	298	298	Bi-monthly	
System Flushing	0	0	0	Bi-monthly	
Other	4	4	4	Bi-monthly	

Number of CII Accounts with Mixed-use Meters

Number of CII Accounts with Mixed-use Meters Retrofitted with Dedicated Irrigation Meters during Reporting Period

Feasibility Study

Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? Yes No

If YES, please fill in the following information:

A. When was the Feasibility Study conducted

B. Describe, upload or provide an electronic link to the Feasibility Study Upload File

File name(s): Email files to natalie@cuwcc.org

Web address(s) URL: comma-separated list

Comments:

The fields in red are required.

Primary contact:

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Agency name:

First name:

Reporting unit name (District name)

Last name:

Reporting unit number:

Email:



2010

BMP 1.4 Retail Conservation Pricing

[Link to FAQs](#)

[View MOU](#)

If you are reporting more rate structures than this form allows, add the structures to a spreadsheet and send the file to natalie@cuwcc.org.

Implementation (Water Rate Structure)

Enter the Water Rate Structures that are assigned to the majority of your customers, by customer class

Rate Structure	Customer Class	Total Revenue	Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Increasing Block	Select a Customer Ty	6,608,038.00		1,534,564.00
Select a Rate Struc	Other			
Select a Rate Struc	Other			
Select a Rate Struc	Other			
Select a Rate Struc	Other			
Select a Rate Struc	Other			
Select a Rate Struc	Other			

Implementation Option (Conservation Pricing Option)

- Use Annual Revenue As Reported
 Use Canadian Water & Wastewater Association Rate Design Model

If CWWA is select, enter the file name and email the spreadsheet to natalie@cuwcc.org

Retail Waste Water (Sewer) Rate Structure by Customer Class

Agency Provide Sewer Service Yes No

Select the Retail Waste Water(Sewer) Rate Structure assigned to the majority of your customers within a specific customer class.

Rate Structure	Customer Class	Total Revenue	Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Uniform	Select a Customer Ty	0.00		315,461.00
Select a Rate Struc	Other			
Select a Rate Struc	Other			
Select a Rate Struc	Other			
Select a Rate Struc	Other			
Select a Rate Struc	Other			
Select a Rate Struc	Other			

Comments:

Waer: 3-tiered rates for all types of accounts; Sewer: uniform rate based on wa

Is a Wholesale Agency Performing Website Updates?

Did one or more CUWCC wholesale agencies agree to assume your agency's responsibility for meeting the requirements of and for CUWCC reporting of this BMP? Yes No

Enter the name(s) of the wholesale agency (comma delimited)
 Central Basin Municipal Water District
 MWDCS

Is Your Agency Performing Website Updates?

Enter your agency's URL (website address):
www.downeyca.org

Describe a minimum of four water conservation related updates to your agency's website that took place during the year:
 Water Saving Tips
 Water Saving Devices
 Regional Rebate Programs
 Landscaps

Did at least one Website Update take place during each quarter of the reporting year? Yes No

Public Outreach Annual Budget

Enter budget for public outreach programs. You may enter total budget in a single line or break the budget into discrete categories by entering many rows. Please indicate if personnel costs are included in the entry.

Category	Amount	Personnel Costs Included? <small>If yes, check the box.</small>	Comments
School Program	\$5,000		
Flyers	\$10,000		
Event	\$2,000		

Comments:

The fields in red are required.



Agency name: Primary contact:
 Reporting unit name (District name): First name:
 Reporting unit number: Last name:
 Email:

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

[Link to FAQs](#)

2010

BMP 2.1 Public Outreach Cont'd

[View MOU](#)

Public Outreach Expenses

Enter expenses for public outreach programs. Please include the same kind of expenses you included in the question related to your budget (Section 2.1.7, above). For example, if you included personnel costs in the budget entered above, be sure to include them here as well.

Expense Category	Expense Amount	Personnel Costs Included?
LivingWise School Program	\$1,856	<input checked="" type="checkbox"/> If yes, check the check box.
CCR Reports	\$10,012	<input type="checkbox"/>
Public Event	\$2,000	<input type="checkbox"/>
		<input type="checkbox"/>

Additional Public Information Program

Please report additional public information contacts. List these additional contacts in order of how your agency views their importance / effectiveness with respect to conserving water, with the most important/ effective listed first (where 1 = most important).

Were there additional Public Outreach efforts?

Yes No

Public Outreach Additional Information

Public Information Programs	Importance
Street Faire	\$2
Kids Day/Environmental Faire Event	\$2

Social Marketing Programs

Branding

Does your agency have a water conservation "brand," "theme" or mascot? Yes No

Describe the brand, theme or mascot.

Deputy Dew Drop

Market Research

Have you sponsored or participated in market research to refine your message? Yes No

Market Research Topic	
Brand Message	
Brand Mission Statement	

Community Committees

Do you have a community conservation committee? Yes No

Enter the names of the community committees:

Downey Green Task Force

Training

Training Type	# of Trainings	# of Attendees	Description of Other

Social Marketing Expenditures

Public Outreach Social Marketing Expenses

Expense Category	Expense Amount	Description
LivingWise	1856	Energy and Water Conservation

Partnering Programs - Partners

Name

Type of Program

CLCA?

Green Building Programs?

Master Gardeners?

Cooperative Extension?

Local Colleges?

Other Downey Middle Schools, Southern California Edison, The Gas Co.

Retail and wholesale outlet; name(s) and type(s) of programs:

Partnering Programs - Newsletters

Number of newsletters per year

4

Number of customers per year

Partnering with Other Utilities

Describe other utilities your agency partners with, including electrical utilities

Gas Co., SC Edison

Conservation Gardens

Describe water conservation gardens at your agency or other high traffic areas or new

Landscape contests or awards

Describe water wise landscape contest or awards program conducted by your agency

Comments:

The fields in red are required.

Primary contact:

Agency name: City of Downey

First name: Jason

Reporting unit name (District name): City of DOWney

Last name: Wen

Reporting unit number: 6990

Email: jwen@downeyca.org

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.



[Link to FAQs](#)

2010

BMP 2.2 School Education Programs, Retail Agencies School Programs

[View MOU](#)

Is a wholesale agency implementing school programs which can be counted to help your agency comply with this BMP? Yes No

Enter Wholesaler Names, separated by commas: Central Basin Municipal Water District
Metropolitan Water District of Southern California

Materials meet state education framework requirements?

Description of Materials: LivingWise Program by Resource Action Programs

Materials distributed to K-6 Students?

Description of materials distributed to K-6 Students: Classroom activities with hands-on home projects to 6th Grade

Number of students reached: 82

Materials distributed to 7-12 Students?

Description of materials distributed to 7-12 Students:

Number of Distribution:

Annual budget for school education program: \$10,000.00

Description of all other water supplier education programs: Flyers in Kids Day/Environmental Faire event

School Program Activities

Classroom presentations:

Number of presentations: 1

Number of attendees: 82

Large group assemblies:

Number of presentations:

Number of attendees:

Children's water festivals or other events:

Number of presentations: 1

Number of attendees: 200

Cooperative efforts with existing science/water education programs (various workshops, science fair awards or judging) and follow-up:

Number of presentations:

Number of attendees:

Other methods of disseminating information (i.e. themed age-appropriate classroom loaner kits):

Description

Number distributed

Staffing children's booths at events & festivals:

Number of booths Number of attendees

Water conservation contests such as poster and photo:

Description

Number distributed

Offer monetary awards/funding or scholarships to students:

Number Offered Total Funding

Teacher training workshops:

Number of presentations Number of attendees

Fund and/or staff student field trips to treatment facilities, recycling facilities, water conservation gardens, etc.:

Number of tours or field trips Number of participants

College internships in water conservation offered:

Number of internships Total funding

Career fairs/workshops:

Number of presentations Number of attendees

Additional program(s) supported by agency but not mentioned above:

Description

Number of events (if applicable) Number of participants

Total reporting period budget expenditures for school education programs (include all agency costs):

Comments



The fields in red are required.



Agency name:

Reporting unit name (District name):

Reporting unit number:

Primary contact:
 First name:
 Last name:
 Email:

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

[Link to FAQs](#)
[View MOU](#)

2010

BMP 3 Residential

Traditional
 (Sections A - D)

Flex Track
 (All Sections)

For Traditional Track please answer the fields within the traditional boxes.

For Flex Track option, please answer the fields within the flex track boxes.

You must enter all measured water savings manually. For each measure entered, upload a spreadsheet with sufficient information to show the way that water savings were measured and that the measure was adequately tracked (i.e., all relevant data was collected) - in some cases there are specific data points also requested in form which are necessary to show that the measure was implemented as described.

A) Residential Assistance / Leak Detection

Flex Track	Traditional		Single Family	Multi Family	Total Water Savings AF/YR	Measured Water Savings AF/YR
		Total Number of Accounts	<input type="text" value="18,663.00"/>	<input type="text" value="1,925.00"/>	<input type="text"/>	<input type="text"/>
		Total Number of Participants Overall	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
		Total Number of Leak Det Surveys	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
		Total Number of Showerheads	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
		Total Number of Faucet Aerators	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
		Total Number of Landscape Water Survey	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
		Number of Other Components	<input type="text"/>			
		Description of Other Components Distributed	<input type="text"/>			

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
 (Enter the file name and Email file to Natalie@cuwcc.org)

B) High Efficiency Clothes Washers (HECWs)

Flex Track	Traditional		Measured water savings (AF/Year)	
				<input type="text"/>
		Number of incentives for HECWs with an AVERAGE Water Factor of 5.0	<input type="text" value="101.00"/>	
		Are Financial Incentives provided for HECWs ?	<input checked="" type="radio"/> Yes <input type="radio"/> No	
		Has your Agency completed a HECW Market Penetration Study (this question does not impact your coverage report, purely informational)	<input type="radio"/> Yes <input checked="" type="radio"/> No	
		HECW Market Penetration Study Documents (Enter the file name and Email file to Natalie@cuwcc.org)	<input type="text"/>	

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

C) WaterSense Specification (WSS) Toilets

(Agency must complete information for at least one coverage option (For Traditional 1, 2, or 3; For Flex Tarck 1, 2, 3, or 4).
You are encouraged to include information on other coverage options, as available.
If seeking credit for additional water savings, you must select Flex Track option)

Traditional

1. Retrofit Resale Ordinances in Place Yes No

If Yes, Choose A File (Enter the file name and Email file to Natalie@cuwcc.org)

2. A 75% Market Saturation Achieved Yes No

If yes, Choose A File (Enter the file name and Email file to Natalie@cuwcc.org)

3. WSS Toilets Installed

	Single Family	Multi Family
Number of WSS Toilets Installed	492.00	
Measured Water Savings AF/YR		

Flex Track

4. Non-WSS Toilets

Type of Toilets	Single Family		Multi Family	
	Number of Toilets	Water Savings	Number of Toilets	Water Savings
Select an Option				

Description of Other Non-WSS Type of Toilets

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

D) WSS for New Residential Development

(Agency must complete information for at least one coverage option. You are encouraged to include information on other coverage options, as available. If seeking credit for additional water savings you must select the Flex Track option)

Traditional

	Single Family	Multi Family
Residential development Rebates	Yes <input type="radio"/> No <input checked="" type="radio"/>	Yes <input type="radio"/> No <input checked="" type="radio"/>
Recognition Programs	Yes <input type="radio"/> No <input type="radio"/>	Yes <input type="radio"/> No <input type="radio"/>
Reduced connection Fees	Yes <input type="radio"/> No <input type="radio"/>	Yes <input type="radio"/> No <input type="radio"/>
Ordinances	Yes <input checked="" type="radio"/> No <input type="radio"/>	Yes <input checked="" type="radio"/> No <input type="radio"/>

New Development Ordinance
 (Enter the file name and Email file to Natalie@cuwcc.org)

Adopt Updated Plumbing Code

Number of new Single Family Units built in Service Area

Number of new Multi Family Units built in Service Area

In the following table, enter one row for each incentive typr program you offer

List of Incentive Amount

Incentive Type	Incentive Amount	Number of WSS fixtures installed	Number of Participating		Measured Water Savings	
			Single Family	Multi Family	Single Family	Multi Family

If you are using your own water-savings measure, send your supporting spreadsheet
 Enter the file name and Email to Natalie@cuwcc.org

Flex Track

For Traditional Option, Stop Here, do not go further.
For Flex Track Option, please continue...

Flex Track Menu Options

In addition to the measures on the BMP List, the Flex Track menu options may be implemented to meet the savings goal for this BMP. Fill in the water savings measures that your agency has implemented.

E) High bill contact with single-family and multi-family customers

Measured water savings (AF/Year)

Select the Types of Contact:

- Email
 Phone
 Letter
 Others (describe)

Upload sample of contact contents (email, letter, etc.)

– if applicable; enter the file name and email file to Natalie@cuwcc.org

Who initiated the contact:

Agencies and/or customers

(Please Specify customer, agencies, or both)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)

(Enter the file name and Email file to Natalie@cuwcc.org)

F) Educate residential customers about the behavioral aspects of water conservation

Measured water savings (AF/Year)

Select types of educational methods used:

- Workshop
 Community Event
 Letter
 On-Site Visit
 Phone Call
 Water Survey
 Website Hit
 Door Hanger
 Other (Describe)

Events

Customers Reached

<input type="text"/>	<input type="text"/>

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)

(Enter the file name and Email file to Natalie@cuwcc.org)

G) Notify residential customers of leaks on the customer's side of the meter

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

J) Install residence water use monitors.

Type of Monitor	Brand	Number Installed	Measured water savings (AF/Year)
<input type="checkbox"/> Dashboard	<input type="text"/>	<input type="text"/>	<input type="text" value="2.90"/>
<input type="checkbox"/> Leak Detector	<input type="text"/>	<input type="text"/>	
<input type="checkbox"/> Data Logger	<input type="text"/>	<input type="text"/>	

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

K) Participate in programs that provide residences with school water conservation kits.

Number of Kits Distributed

Kit contents (including model of fixtures)

High Efficiency Showerheads; Kitchen Aerator; Rain/Drip Guage; Toilet Leak Detector Tablets; Flow Rate Test Bag

List of what was actually installed in the homes (number of showerheads, aerators etc.).

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

L) Implement an automatic meter reading program for residential customers.

AMR or AMI Type of Network

Number of connections installed

Is your agency using these to contact high water-use customers?

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

OTHER Types of Measures.

Type of Program	Sample / Description	Measured Water Savings (AF/YR)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

Comments

The fields in red are required.



Agency name:

Reporting unit name (District name):

Reporting unit number:

Primary contact:

First name:

Last name:

Email:

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.



2010

[Link to FAQs](#)

[View MOU](#)

BMP 4 CII

Traditional (Section A - L)

Flex Track (All Sections)

For Traditional Track please answer the fields within the traditional boxes.

For Flex Track option, please answer the fields within the flex track boxes.

You must enter all measured water savings manually in the summary cells on the right. For each measure entered, upload a spreadsheet with sufficient information to show the way that water savings was measured and that the measure was adequately tracked (i.e., all relevant data was collected) - in some cases there are specific data points also requested in the flex track data entry form which are necessary to show that the measure was implemented as described.

CII Type of measure implemented

Traditional	A) High - Efficiency Toilets.		Measured water savings (AF/Year) <input type="text"/>
	Number	<input type="text" value="435"/>	
Flex Track	Type of program	<input type="text" value="Direct install"/>	Council's Annual Water Savings 0.041748 AF per device
	Other type of program	<input type="text" value="Rebates under SaveABuck"/>	
	Do you accept the Council's default savings number for this measure? <input checked="" type="radio"/> Yes <input type="radio"/> No		
	If not, Please provide the following:		
Total Measured Water Savings(AF/Year)	<input type="text"/>		
Measure life (years)	<input type="text"/>		
Lifetime water savings (years)	<input type="text"/>		
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org			
<input type="text"/>			

B) High -Efficiency Urinals (0.5 gpf)

Flex Track	Traditional	Number	<input type="text"/>	Measured water savings (AF/Year)	<input type="text"/>
		Type of program	Select an Option		
Other type of program	<input type="text"/>				
Do you accept the Council's default savings number for this measure? <input checked="" type="radio"/> Yes <input type="radio"/> No				Council's Annual Water Savings 0.069086 AF per device	
If not, Please provide the following					
Total Measured Water Savings(AF/Year)			<input type="text"/>		
Measure life (years)			<input type="text"/>		
Lifetime water savings (years)			<input type="text"/>		
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org					

C) Ultra Low Volume Urinals (0.125 gpf)

Flex Track	Traditional	Number	<input type="text"/>	Measured water savings (AF/Year)	<input type="text"/>
		Type of program	Select an Option		
Other type of program	<input type="text"/>				
Do you accept the Council's default savings number for this measure? <input type="radio"/> Yes <input type="radio"/> No				Council's Annual Water Savings 0.080603 AF per device	
If not, Please provide the following					
Total Measured Water Savings(AF/Year)			<input type="text"/>		
Measure life (years)			<input type="text"/>		
Lifetime water savings (years)			<input type="text"/>		
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org					

D) Zero Consumption Urinals (0.0 gpf)

Flex Track	Traditional	Number	<input type="text" value="6"/>	Measured water savings (AF/Year)	<input type="text"/>
		Type of program	Direct install		
Other type of program	<input type="text"/>				
Do you accept the Council's default savings number for this measure? <input checked="" type="radio"/> Yes <input type="radio"/> No					

Flex Track	If not, Please provide the following:		Council's Annual Water Savings 0.0921146 AF per device
	Total Measured Water Savings(AF/Year)	<input type="text"/>	
	Measure life (years)	<input type="text"/>	
	Lifetime water savings (years)	<input type="text"/>	
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org			

E) Commercial High - Efficiency Single Load Clothes Washers

Traditional	Number	<input type="text"/>	Measured water savings (AF/Year) <input type="text"/>
	Type of program	<input type="text"/>	
	Other type of program	<input type="text"/>	
Flex Track	Do you accept the Council's default savings number for this measure ? <input type="radio"/> Yes <input type="radio"/> No		Council's Annual Water Savings 0.116618 AF per device
	If not , Please provide the following:		
	Total Measured Water Savings(AF/Year)	<input type="text"/>	
	Measure life (years)	<input type="text"/>	
	Lifetime water savings (years)	<input type="text"/>	
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org			

F) Cooling Tower Conductivity Controllers.

Traditional	Number	<input type="text"/>	Measured water savings (AF/Year) <input type="text"/>
	Type of program	Select an Option	
	Other type of program	<input type="text"/>	
Flex Track	Do you accept the Council's default savings number for this measure ? <input type="radio"/> Yes <input type="radio"/> No		Council's Annual Water Savings 1.032250 AF per device
	If not, Please provide the following:		
	Total Measured Water Savings(AF/Year)	<input type="text"/>	
	Measure life (years)	<input type="text"/>	
	Lifetime water savings (years)	<input type="text"/>	
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org			

G) Cooling Tower pH Controllers

Traditional	Number	<input type="text"/>	Measured water savings (AF/Year)
	Type of program	<input type="text" value="Select an Option"/>	
	Other type of program	<input type="text"/>	
Flex Track	Do you accept the Council's default savings number for this measure ? <input type="radio"/> Yes <input type="radio"/> No		Council's Annual Water Savings 3.981543 AF per device
	If not, Please provide the following:		
	Total Measured Water Savings(AF/Year)	<input type="text"/>	
	Measure life (years)	<input type="text"/>	
	Lifetime water savings (years)	<input type="text"/>	
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org			

H) Connectionless Food Steamers.

Traditional	Number	<input type="text"/>	Measured water savings (AF/Year)
	Type of program	<input type="text"/>	
	Other type of program	<input type="text"/>	
Flex Track	Do you accept the Council's default savings number for this measure ? <input type="radio"/> Yes <input type="radio"/> No		Council's Annual Water Savings 0.25 AF per Steamer Compartment
	If not, Please provide the following:		
	Total Measured Water Savings(AF/Year)	<input type="text"/>	
	Measure life (years)	<input type="text"/>	
	Lifetime water savings (years)	<input type="text"/>	
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org			

I) Medical Equipment Steam Sterilizers

Flex Track	Traditional	Number	<input type="text"/>	Measured water savings (AF/Year)
		Type of program	<input type="text"/>	
		Other type of program	<input type="text"/>	

Flex Track	Do you accept the Council's default savings number for this measure?	<input type="radio"/> Yes <input type="radio"/> No	Council's Annual Water Savings 1.538 AF per device
	If not, Please provide the following:		
	Total Measured Water Savings(AF/Year)	<input type="text"/>	
	Measure life (years)	<input type="text"/>	
	Lifetime water savings (years)	<input type="text"/>	
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org			

J) Water - Efficient Ice Machines.

Traditional	Number	<input type="text"/>	Measured water savings (AF/Year) <input type="text"/>
	Type of program	Select an Option	
	Other type of program	<input type="text"/>	
Flex Track	Do you accept the Council's default savings number for this measure ?	<input type="radio"/> Yes <input type="radio"/> No	Council's Annual Water Savings 0.0834507 AF per device
	If not, Please provide the following:		
	Total Measured Water Savings(AF/Year)	<input type="text"/>	
	Measure life (years)	<input type="text"/>	
	Lifetime water savings (years)	<input type="text"/>	
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org			

K) Pressurized Water Brooms.

Traditional	Number	<input type="text"/>	Measured water savings (AF/Year) <input type="text"/>
	Type of program	Select an Option	
	Other type of program	<input type="text"/>	
Flex Track	Do you accept the Council's default savings number for this measure?	<input type="radio"/> Yes <input type="radio"/> No	Council's Annual Water Savings 0.1534 AF per device

Flex Track

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

L) Dry Vacuum Pumps.

Traditional	Number	<input type="text"/>	Measured water savings (AF/Year)
	Type of program	Select an Option <input type="text"/>	
	Other type of program	<input type="text"/>	
Flex Track	Do you accept the Council's default savings number for this measure ? <input type="radio"/> Yes <input type="radio"/> No		Council's Annual Water Savings 0.064 AF per device
	If not, Please provide the following:		
	Total Measured Water Savings(AF/Year)	<input type="text"/>	
	Measure life (years)	<input type="text"/>	
	Lifetime water savings (years)	<input type="text"/>	
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org			
<input type="text"/>			

Traditional Reporting Stop Here, Do not continue

Flex Track Reporting Please Continue...

M) Industrial Process Water Use Reduction.

	Number	<input type="text"/>	Measured water savings (AF/Year)
	Type of program	Select an Option <input type="text"/>	
	Other type of program	<input type="text"/>	
	Type of Process Water Reduced	<input type="text"/>	
	If re-using water, what was the secondary use of the water? (such as pre-rinse cycle or landscaping)	<input type="text"/>	

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
 Enter the file name and Email to Natalie@cuwcc.org

N) Commercial Laundry Retrofits.

Number of customers **Measured water savings (AF/Year)**

Type of customer hotels campuses prisons laundromats

Lease / own machines Lease Own Machines Both

Type of program

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
 Enter the file name and Email to Natalie@cuwcc.org

O) Industrial Laundry Retrofits.

Measured water savings (AF/Year)

Total Number of customers

Total Volume of laundry processed annually

Type of program

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

P) Filter Upgrades (for pools, spas, and fountains).

Number of pools upgraded

Number of spas upgraded

Number of fountains upgraded

Measured water savings (AF/Year)

Type of program

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

Q) Car Wash Reclamation Systems

Measured water savings (AF/Year)

	Conveyor	In-bay
Total Number of program participants (accounts)	<input type="text"/>	<input type="text"/>
Total Number of vehicles washed annually	<input type="text"/>	<input type="text"/>
Do you accept the Council's default savings number for this measure?	<input type="radio"/> Yes <input type="radio"/> No	
If not, Please provide the following:	Council's Annual Water Savings 0.00004607 (or 15 gals) per vehicle	
Total Measured Water Savings(AF/Year)	<input type="text"/>	
Measure life (years)	<input type="text"/>	
Lifetime water savings (years)	<input type="text"/>	
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org		
<input type="text"/>		

R) Wet Cleaning.

Brief description of program		Measured water savings (AF/Year) <input type="text"/>
Total Measured Water Savings(AF/Year)	<input type="text"/>	
Measure life (years)	<input type="text"/>	
Lifetime water savings (years)	<input type="text"/>	
If you are using your own water-savings measure, send your supporting spreadsheet Enter the file name and Email to Natalie@cuwcc.org		
<input type="text"/>		

S) Water Audits (To avoid double counting, do not include device/replacement water savings.)

Number of water audits by type of business		Measured water savings (AF/Year) <input type="text"/>
Auto		
Food		
Health		
Hotels		

Manufacturing

Membership

Multi-use

Office

Religious

Restaurant

Retail/
Wholesale

School

Other (with
description)

Description of
Other

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

T) Clean In Place (CIP) Technology
(such as bottle sterilization in a beverage processing plant)

		Measured water savings (AF/Year)
Number of customers	<input type="text"/>	<input type="text"/>
Type of program	<input type="text" value="Select an Option"/>	
Other type of program	<input type="text"/>	

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

U) Waterless Wok

Number

Type of program

**Measured
water savings
(AF/Year)**

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

V) Alternative On-site Water Sources (For Rain Water Harvesting, commercial rain barrels are excluded. For Foundation Drain Water, exclude permeable paving.)

**Measured
water savings
(AF/Year)**

Select type	Number	Description
<input type="checkbox"/> Cooling Condensate	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Foundation Drain Water	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Gray Water	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Storm Water	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Rain Water	<input type="text"/>	<input type="text"/>
<input type="checkbox"/> Pond and Water Feature Recycling	<input type="text"/>	<input type="text"/>

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
 Enter the file name and Email to Natalie@cuwcc.org

W) Sub - metering

Measured
water savings
(AF/Year)

Select type	Number	Description	<input type="text"/>
<input type="checkbox"/> Condominiums	<input type="text"/>	<input type="text"/>	
<input type="checkbox"/> Apartments	<input type="text"/>	<input type="text"/>	
<input type="checkbox"/> Mobile Homes	<input type="text"/>	<input type="text"/>	

Do you accept the Council's default savings numbers for this measure?

Yes No

Council's Annual Water Savings
 Appartments & Condos=0.024419 AF/YR
 Mobile Home = 0.056774 AF/Yr

If not, Please provide the following:

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
 Enter the file name and Email to Natalie@cuwcc.org

X) High Efficiency Showerheads

Measured
water savings
(AF/Year)

Number	<input type="text"/>	<input type="text"/>
Type of program	Select an Option	
Other type of program	<input type="text"/>	

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

Y) Faucet Flow Restrictors

Measured
water savings
(AF/Year)

Number

Type of program

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

Z) Water Efficient Dishwashers

Measured
water savings
(AF/Year)

Select type

Number

Rack

Conveyor

Other

Description
of Other

Type of
program

Other type of program

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

AA) Hot Water on Demand

Number

Type of program

Select an Option

Other type of program

Measured water savings (AF/Year)

Total Measured Water Savings(AF/Year)

Measure life (years)

Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

BB) Pre-rinse Spray Valves of 1.3 gpm (gallons per minute) or less

Number

Type of program

Select an Option

Other type of program

Measured water savings (AF/Year)

Total Measured Water Savings(AF/Year)
Measure life (years)
Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

CC) Central Flush Systems

Number **Measured water savings (AF/Year)**
Type of program
Other type of program

Total Measured Water Savings(AF/Year)
Measure life (years)
Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org

Other Measures chosen by the Agency

Description of program **Measured water savings (AF/Year)**
Sample (if applicable)

Total Measured Water Savings(AF/Year)
Measure life (years)
Lifetime water savings (years)

If you are using your own water-savings measure, send your supporting spreadsheet
Enter the file name and Email to Natalie@cuwcc.org



The fields in red are required.

Agency name:

Reporting unit name (District name):

Reporting unit number:

Primary contact:
 First name:
 Last name:
 Email:

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

[Link to FAQs](#)
[View MOU](#)

2010

BMP 5 Landscape

Traditional Flex Track

For Traditional Track please answer the fields within the traditional boxes.
For Flex Track option, please answer the fields within the flex track boxes.

You must enter all measured water savings manually. For each measure entered, upload a spreadsheet with sufficient information to show the way that water savings were measured and that the measure was adequately tracked (i.e., all relevant data was collected) - in some cases there are specific data point also requested in form which are necessary to show that the measure was implemented as described.

Accounts with Dedicated Irrigation Meters

Traditional	Number of dedicated irrigation meter accounts	<input type="text" value="165.00"/>
	Number of dedicated irrigation meter accounts with water budgets	<input type="text"/>
	Aggregate water use for dedicated non-recreational landscape accounts with budgets	<input type="text"/>
	Aggregate acreage assigned water budgets for dedicated non-recreational landscape accounts with budgets	<input type="text"/>
	Preserved water use records and budgets for customers with dedicated landscape irrigation accounts for at least four years	<input checked="" type="radio"/> Yes <input type="radio"/> No
Flex Track	Water Savings from Accounts with dedicated irrigation meters with water budgets (Acre Feet)	<input type="text"/>
	If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data) (Enter the file name and Email file to Natalie@cuwcc.org)	
		<input type="text"/>

Technical Assistance

Traditional	Number of Accounts 20% over-budget	<input type="text"/>	Measured water savings (AF/Year)
	Number of accounts 20% over-budget offered technical assistance	<input type="text"/>	
	Number of accounts 20% over-budget accepting technical assistance	<input type="text"/>	
Flex Track	If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data) (Enter the file name and Email file to Natalie@cuwcc.org)		<input type="text"/>
			<input type="text"/>

Irrigation Water Use Surveys for Mixed-use and Un-metered Accounts

Traditional	Number of mixed use and un-metered accounts	<input type="text"/>	Measured water savings (AF/Year)
	Number of irrigation water use surveys offered (cumulative, all years)	<input type="text"/>	
	Number of irrigation water use surveys accepted (cumulative)	<input type="text"/>	
	Can your Agency estimate the amount of landscape acreage for mixed use and Un-metered accounts	<input type="radio"/> Yes <input type="radio"/> No	
	If Yes, Aggregate acreage for mixed use and Un-metered accounts	<input type="text"/>	
Flex Track	Estimated water demand from acreage for mixed use and Un-metered accounts	<input type="text"/>	
	Annual water savings by customers receiving irrigation water savings surveys and implementing recommendations	<input type="text"/>	
	If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data) (Enter the file name and Email file to Natalie@cuwcc.org)		<input type="text"/>

Financial Incentives

Traditional	Have you implemented and maintained an irrigation equipment retrofit incentive program? <input type="radio"/> Yes <input type="radio"/> No			Measured Water Savings (AF/YR)
	Number of incentives	Dollar value of incentives	Incentive Types	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	
Flex Track	If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data) (Enter the file name and Email file to Natalie@cuwcc.org)			
	<input type="text"/>			

**Traditional Reporting Stop Here, Do not continue
Flex Track Reporting Please Continue...**

Landscape Flex Track Measure Types

1. Monitor and report on landscape water use

A) Measure landscapes and develop water budgets for customers with dedicated landscape meters. Provide timely water use reports with comparisons of water use to budget that provide customers the information they need to adjust irrigation schedules (such as faxes, twitter, etc. not included in the previous sections).

**Measured
water savings
(AF/Year)**

Enter the Number of sites with:

Dedicated Mixed Meters

Water Budgets

Landscape Measurements

Others (describe)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

B) Measure landscapes and develop water budgets for customers with Mixed Use meters. Provide timely water use reports with comparisons of water use to budget that provide customers the information they need to adjust irrigation schedules.

**Measured
water savings
(AF/Year)**

Enter the Number of sites with:

Dedicated Mixed Meters

Water Budgets

Landscape Measurements

Others (describe)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

C) Establish agency-wide water budget. (Note that: ETo based water budget in the MWELo changed in 2010 from .8ETo to .7ETo.)

**Measured
water savings
(AF/Year)**

Agency-wide total irrigated area
Per-2010 (Acres)

Agency-wide total irrigated area
Post-2010 (Acres)

Amount of Water Used (AF/Acre)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

D) Establish agency-wide, sector-based irrigation goal to reduce water use, based on seasonality.

Number of minimum irrigation goal (AF/Acre)

Amount of Water Used per Period (AF/Period)

**Measured
water savings
(AF/Year)**

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

2. Provide technical landscape resources and training

A) Upon customer requests, provide landscape irrigation management and landscape design information and resources: provide assistance, answer customer questions, respond to run-off and high-bill calls.

Enter the Number of:

Contacts In Person

Contacts over the phone

Contacts via Email

**Measured
water savings
(AF/Year)**

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

B) Perform landscape & irrigation audits: including irrigation scheduling, plant information, and landscape area measurement.

Enter the Number of:

Audits conducted per year

Measurement of square
footage of Turf areas

Measurement of square
footage of NON Turf areas

**Measured
water savings
(AF/Year)**

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

C) Sponsor, co-sponsor, promote, or support landscape workshops, training, presentations and other technical educational events for homeowners and professionals: design, installation, maintenance, water management.

Enter the Number of:

Events

Participants

List Type or
Title of Events

Measured
water savings
(AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

D) Establish Time-of-Day Irrigation Restrictions.

Yes No

Describe Restrictions:

City Municipal Code restricts the landscape irrigation with potable water only between the hours of 4 pm and 10 am on designated days.

Measured
water savings
(AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

E) Establish Day-of-Week Irrigation Restrictions. Yes No

Describe Restrictions:

Designated Irrigation Day in City Code: is determined by the last digit of the street address, even number may irrigate on even numbered days; and odd number on odd numbered days.

Measured
water savings
(AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

3. Provide incentives

A) Establish Landscape budget-based rates. Yes No

Describe Rates:

Measured
water savings
(AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

B) Provide incentives for conversions from mixed-use meters to dedicated landscape meters.

Number of Conversions:

Measured
water savings
(AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

C) Provide incentives for installing sub-meters to separate landscape water use

Number of meters installed:

Measured
water savings
(AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

D) Provide incentives for irrigation equipment upgrades that improve distribution uniformity, irrigation efficiency, or scheduling capabilities.

Select types of irrigation equipment upgrades:

- Controllers
- Emitters
- Soil moisture sensors
- Pressure Regulators
- Rain shut off devices
- Other (describe)

Number of devices installed

Measured
water savings
(AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

E) Provide incentives for the reduction of water use over an irrigated area, or reduction in the size of the irrigated area due to replacement of turf or other high water-using plants with low water-using plants, artificial turf, or permeable surfaces.

Acreage of live turf converted to low water-using plants, artificial turf, or permeable surfaces: Acres

Measured water savings (AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

F) Provide incentives for conversions from potable to recycled water.

Number of Conversions:
Number of Incentives:
Funds Invested:

Measured water savings (AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

G) Provide incentives for the use of alternative sources of water in the landscape (i.e. gray water, rainwater, cisterns, etc.)

Number of Conversions:
Number of Incentives:
Funds Invested:

Measured water savings (AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

C) Participate in regional efforts: integrated water resource management, watershed management, NPDES permit agencies, etc.

Yes No

Describe Involvement:

Measured
water savings
(AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

5. Develop a holistic approach to landscape water use efficiency

A) Develop and implement a comprehensive landscape water conservation program for all customers. Target marketing efforts to those most likely to result in benefits to both customer and Agency.

Describe Program:

Measured
water savings
(AF/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file to Natalie@cuwcc.org)

6. Other Measures

A) Other Landscape Measures.

Describe Other
Landscape Measures:

Measured
water savings
(Af/Year)

If there is Water Savings in this measure, upload the Methodology Spreadsheet (backup data)
(Enter the file name and Email file Natalie@cuwcc.org)

AWWA Water Loss Control Committee (WLCC) Free Water Audit Software v4.1

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WAS v4.1

PURPOSE: This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format, and is not meant to take the place of a full-scale, comprehensive water audit format.

USE: The spreadsheet contains several separate worksheets. Sheets can be accessed using the tabs towards the bottom of the screen, or by clicking the buttons on the left below. Descriptions of each sheet are also given below.

THE FOLLOWING KEY APPLIES THROUGHOUT:

- Value can be entered by user
- Value calculated based on input data
- These cells contain recommended default values

Please begin by providing the following information, then proceed through each sheet in the workbook:

NAME OF CITY OR UTILITY: COUNTRY:

REPORTING YEAR: START DATE (MM/YYYY): END DATE (MM/YYYY):

NAME OF CONTACT PERSON: E-MAIL: TELEPHONE: Ext.

PLEASE SELECT PREFERRED REPORTING UNITS FOR WATER VOLUME:

Click to advance to sheet...

Click here: for help about units and conversions

- Instructions**
The current sheet
- Reporting Worksheet**
Enter the required data on this worksheet to calculate the water balance
- Water Balance**
The values entered in the Reporting Worksheet are used to populate the water balance
- Grading Matrix**
Depending on the confidence of audit inputs, a grading is assigned to the audit score
- Service Connections**
Diagrams depicting possible customer service connection configurations
- Definitions**
Use this sheet to understand terms used in the audit process
- Loss Control Planning**
Use this sheet to interpret the results of the audit validity score and performance indicators

Comments:

Add comments here to track additional supporting information, sources or names of participants

If you have questions or comments regarding the software please contact us at: wic@awwa.org

AWWA WLCC Free Water Audit Software: Reporting Worksheet

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WAS v4.1

[Back to Instructions](#)

[Click to access definition](#)

Water Audit Report for: **City of Downey**

Reporting Year: **2010** 7/2009 - 6/2010

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

WATER SUPPLIED

<< Enter grading in column 'E'

Volume from own sources:	9	16,208,720	acre-ft/yr
Master meter error adjustment (enter positive value):	5	0,000	acre-ft/yr
Water imported:	9	742,360	acre-ft/yr
Water exported:	n/a	0,000	acre-ft/yr
WATER SUPPLIED:		16,951,080	acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	7	15,628,000	acre-ft/yr
Billed unmetered:	10	0,000	acre-ft/yr
Unbilled metered:	10	507,000	acre-ft/yr
Unbilled unmetered:	9	29,100	acre-ft/yr
AUTHORIZED CONSUMPTION:		16,164,100	acre-ft/yr

Click here: [?](#) for help using option buttons below

Pcnt: Value:

Use buttons to select percentage of water supplied OR value

WATER LOSSES (Water Supplied - Authorized Consumption)

786,980 acre-ft/yr

Apparent Losses

Unauthorized consumption:	?	42,378	acre-ft/yr
Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed			
Customer metering inaccuracies:	7	162,960	acre-ft/yr
Systematic data handling errors:	?	\$	acre-ft/yr

Pcnt: Value:

Systematic data handling errors are likely, please enter a non-zero value; otherwise grade = 5

Apparent Losses: 205,357

Choose this option to enter a percentage of billed metered consumption. This is NOT a default value

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses:	?	581,623	acre-ft/yr
WATER LOSSES:		786,980	acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER:	?	1,323,080	acre-ft/yr
= Total Water Loss + Unbilled Metered + Unbilled Unmetered			

SYSTEM DATA

Length of mains:	10	270.9	miles
Number of active AND inactive service connections:	10	22,602	
Connection density:		84	conn./mile main
Average length of customer service line:	10	0.0	ft (pipe length between curbstop and customer meter or property boundary)
Average operating pressure:	9	65.0	psi

COST DATA

Total annual cost of operating water system:	10	\$11,145,000	\$/Year
Customer retail unit cost (applied to Apparent Losses):	10		
Variable production cost (applied to Real Losses):	10		\$/acre-ft/yr

PERFORMANCE INDICATORS

Financial Indicators

Non-revenue water as percent by volume of Water Supplied:	7.8%
Non-revenue water as percent by cost of operating system:	#N/A
Annual cost of Apparent Losses:	
Annual cost of Real Losses:	

Operational Efficiency Indicators

Apparent Losses per service connection per day:	5.11	gallons/connection/day
Real Losses per service connection per day*:	22.97	gallons/connection/day
Real Losses per length of main per day*:	N/A	
Real Losses per service connection per day per psi pressure:	0.35	gallons/connection/day/psi
Unavoidable Annual Real Losses (UARL):	115.09	million gallons/year
From Above, Real Losses = Current Annual Real Losses (CARL):	581.62	million gallons/year
Infrastructure Leakage Index (ILI) [CARL/UARL]:	1.65	

* only the most applicable of these two indicators will be calculated

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 86 out of 100 ***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Billed metered
- 2: Volume from own sources
- 3: Unauthorized consumption

[For more information, click here to see the Grading Matrix worksheet](#)

AWWA WLCC Free Water Audit Software: Water Balance

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WAS v4.1

Report Yr:

2010

Water Audit Report For:

City of Downey

Water Exported		Billed Authorized Consumption		Billed Metered Consumption (inc. water exported)		Revenue Water
0.000		15,628.000	15,628.000		15,628.000	
Own Sources (Adjusted for known errors)	Authorized Consumption			Billed Unmetered Consumption	0.000	
16,208.720	16,164.100			Unbilled Metered Consumption	507.000	
				Unbilled Unmetered Consumption	29.100	
Water Supplied				Unauthorized Consumption	42.378	
16,951.080			Apparent Losses	Customer Metering Inaccuracies	162.980	1,323.080
			205.357	Systematic Data Handling Errors	0.000	
	Water Losses			Leakage on Transmission and/or Distribution Mains		
	786.980		Real Losses	Not broken down		
			581.623	Leakage and Overflows at Utility's Storage Tanks		
Water Imported				Not broken down		
742.360				Leakage on Service Connections		
				Not broken down		

In the Reporting Worksheet, grades were assigned to each component of the audit to describe the confidence and accuracy of the input data. The grading assigned to each audit component and the corresponding recommended improvements and actions are highlighted in yellow. Audit accuracy is likely to be improved by prioritizing those items shown in red.

		Grading									
		1	2	3	4	5	6	7	8	9	10
Volume from own sources	Select this grading only if the water utility purchases imports from all of its water resources (i.e. has no sources of its own)										
	Less than 25% of water production sources are metered. Remaining sources are estimated. No regular meter accuracy testing.		Conditions between 2 and 4	50% - 75% of treated water production sources are metered. Other sources estimated. Occasional meter accuracy testing.	Conditions between 4 and 6	At least 75% of treated water production sources are metered. Or at least 90% of the source flow is derived from metered sources. Meter accuracy testing and/or electronic calibration conducted annually. Less than 25% of tested meters are found outside of +/- 6% accuracy.	Conditions between 6 and 8	100% of treated water production sources testing and electronic calibration conducted annually. Less than 10% of meters are found outside of +/- 6% accuracy.	Conditions between 8 and 10	100% of treated water production sources tested. Meter accuracy testing and electronic calibration conducted semi-annually, with less than 10% found outside of +/- 3% accuracy.	
Improvements to attain higher data grading for "Volume from own Sources" component	Locate all water production sources on maps and in field, launch meter accuracy testing for existing meters, begin to install meters on unmetered water production sources, and replace any obsolete/descriptive meters.	To qualify for 2:									
	Organize efforts to begin to collect data for determining volume from own sources										
Master meter error adjustment	No automatic datalogging of production volumes, daily readings are scatted on paper records. Tank/storage elevations are not employed in calculating "Volume from own sources" component. Data is adjusted only when grossly evident data error occurs.										
	Select via only if the water utility has no meters on its sources of supply, either its own source, and/or imported (purchased) water sources										
Improvements to attain higher data grading for "Master Meter Error Adjustment" component	Develop plan to restructure recording system to capture all flow data, set procedure to review data daily to detect input errors	To qualify for 2:									
	Less than 25% of imported water sources are metered. Remaining sources are estimated. No regular meter accuracy testing.		Conditions between 2 and 4	50% - 75% of imported water sources are metered. No regular meter accuracy testing.	Conditions between 4 and 6	At least 75% of imported water sources are metered. Meter accuracy testing and/or electronic calibration conducted annually. Less than 25% of tested meters are found outside of +/- 6% accuracy.	Conditions between 6 and 8	100% of imported water sources are metered. Meter accuracy testing and/or electronic calibration conducted semi-annually, with less than 10% found outside of +/- 3% accuracy.			
Water imported	Select via if the water utility's supply is exclusively from its own water resources (no bulk purchased/ imported water)										
	Review bulk water purchase agreements with purchaser; confirm requirements of source metering; identify needs for new or replacement meters with goal to meter all imported water sources	To qualify for 2:									
Improvements to attain higher data grading for "Water Imported Volume" component	Review bulk water purchase agreements with purchaser; confirm requirements of source metering; identify needs for new or replacement meters with goal to meter all imported water sources										
	Less than 25% of imported water sources are metered. Remaining sources are estimated. No regular meter accuracy testing.		Conditions between 2 and 4	50% - 75% of imported water sources are metered. No regular meter accuracy testing.	Conditions between 4 and 6	At least 75% of imported water sources are metered. Meter accuracy testing and/or electronic calibration conducted annually. Less than 25% of tested meters are found outside of +/- 6% accuracy.	Conditions between 6 and 8	100% of imported water sources are metered. Meter accuracy testing and/or electronic calibration conducted semi-annually, with less than 10% found outside of +/- 3% accuracy.			
Standardize meter accuracy test frequency to semi-annual, or more frequent, for all meters. Repair or replace meters outside of +/- 3% accuracy. Continually investigate emerging metering technology.	Standardize meter accuracy test frequency to semi-annual, or more frequent, for all meters. Repair or replace meters outside of +/- 3% accuracy. Continually investigate emerging metering technology.										
	Hourly production meter data logged automatically & reviewed on at least a weekly basis. Data adjusted to correct gross error from equipment malfunction & reviewed on equipment maintenance and testing. Tank/storage facility elevation changes are automatically used in "Volume from own sources" component.										
Computerized system (SCADA or similar) automatically balances flows from all sources and stores; results reviewed daily. Mass balance technique compares production meter data to raw (untreated) water and treatment volumes to detect anomalies. Regular calibrations between SCADA and source meters ensure minimal data transfer error.	Link all production and transmission facility elevation change data to SCADA. SCADA system or similar computerized monitoring system, and establish automatic flow balancing algorithm and regularly calibrate between SCADA and source meters.										
	Complete installation of elevation instrumentation on all tank/storage facilities. Continue to use daily tank storage changes in "sources" component. Adjust production meter data for gross error and accuracy confirmed by testing.										
Monitor meter innovations for development of more accurate and less expensive flowmeters. Continue to repair or replace meters as they perform outside of desired accuracy limits.	Monitor meter innovations for development of more accurate and less expensive flowmeters. Continue to repair or replace meters as they perform outside of desired accuracy limits.										
	Hourly production meter data logged automatically & reviewed on at least a weekly basis. Data adjusted to correct gross error from equipment malfunction & reviewed on equipment maintenance and testing. Tank/storage facility elevation changes are automatically used in "Volume from own sources" component.										
Standardize meter accuracy test frequency to semi-annual, or more frequent, for all meters. Repair or replace meters outside of +/- 3% accuracy. Continually investigate emerging metering technology.	Standardize meter accuracy test frequency to semi-annual, or more frequent, for all meters. Repair or replace meters outside of +/- 3% accuracy. Continually investigate emerging metering technology.										
	Hourly production meter data logged automatically & reviewed on at least a weekly basis. Data adjusted to correct gross error from equipment malfunction & reviewed on equipment maintenance and testing. Tank/storage facility elevation changes are automatically used in "Volume from own sources" component.										

Grading

	1	2	3	4	5	6	7	8	9	10
Water Exported:	<p>Less than 25% of exported water sources are metered, remaining sources are estimated. No regular meter accuracy testing</p> <p>To qualify for 2: Review both water sales and metering systems to determine if use & volume of accurate metering. Identify needs to replace obsolete/defective meters as needed</p>	<p>25% - 50% of exported water sources are metered, other sources estimated. No regular meter accuracy testing</p> <p>To qualify for 4: Locate all exported water accuracy testing in field, launch meter accuracy testing for existing meters, begin to install meters on unmeasured exported water interconnections and replace obsolete/defective meters</p>	<p>Conditions between 2 and 4</p>	<p>50% - 75% of exported water sources are metered, other sources estimated. Occasional meter accuracy testing</p> <p>To qualify for 6: Formalize annual meter accuracy testing for all exported water meters. Continue installation of meters on unmeasured water interconnections and replacement of obsolete/defective meters</p>	<p>Conditions between 4 and 6</p>	<p>At least 75% of exported water sources are metered, meter calibration conducted annually. Less than 10% of meters are found outside of +/- 6% accuracy</p> <p>To qualify for 8: Complete project to install rate, or replace defective, meters on a representative sample of unmeasured water meters. Repair or replace meters outside of +/- 6% accuracy</p>	<p>Conditions between 6 and 8</p>	<p>100% of exported water sources are metered, meter accuracy testing and/or electronic calibration conducted annually. Less than 10% of meters are found outside of +/- 6% accuracy</p> <p>To qualify for 10: Maintain annual meter accuracy testing for all meters on a representative sample of unmeasured water meters. Investigate meter accuracy. Repair or replace meters outside of +/- 3% accuracy. Continue to improve metering technology</p>	<p>Conditions between 8 and 10</p>	<p>100% of exported water sources are metered, meter accuracy testing and/or electronic calibration conducted annually. Less than 10% of meters are found outside of +/- 3% accuracy</p> <p>Standardize meter accuracy test frequency to semi-annual, or more frequent, for all meters. Repair or replace meters outside of +/- 3% accuracy. Continue to improve metering technology</p>
Improvements to attain higher data grading for "Water Metered Volume" component:	<p>Less than 50% of customers with volume-based billings from meter readings, flat or fixed fee rate billed for the majority of the customer population</p> <p>To qualify for 2: Review both water sales and metering systems to determine if use & volume of accurate metering. Identify needs to replace obsolete/defective meters as needed</p>	<p>At least 50% of customers with volume-based billing from meter readings, flat or fixed fee rate billed for others estimated. Limited meter testing or replacement. Billing data maintained on paper records, with no auditing.</p> <p>Conditions between 2 and 4</p>	<p>Conditions between 2 and 4</p>	<p>At least 75% of customers with volume-based billing from meter readings, flat or fixed fee rate billed for remainder. Manual meter reading used. At least 90% meter read success rate. Purchase records, verify age of customer meters, only very limited meter accuracy testing is conducted. Customer meters replaced only upon complete failure. Computerized billing records, but only periodic internal auditing conducted.</p> <p>Conditions between 4 and 6</p>	<p>At least 90% of customers with volume-based billing from meter reads, remaining accounts are estimated. Manual customer meter reading gives at least 80% customer meter reading success rate. Billing reads are estimated. Good customer meter testing. Regular replacement of oldest meters. Computerized billing records with routine auditing of global statistics.</p> <p>Conditions between 6 and 8</p>	<p>At least 97% of customers with volume-based billing from meter reads. At least 90% customer meter read success rate, or minimum 80% read success rate with planning and budgeting for metering. Manual customer meter reading gives at least 80% customer meter reading success rate. Good customer meter testing. Regular replacement of statistically significant number of meters each year. Routine auditing of computerized billing records for global and detailed statistics, verified periodically by third party.</p> <p>Conditions between 8 and 10</p>	<p>At least 99% of customers with volume-based billing from meter reads. At least 95% customer meter read success rate, or minimum 80% read success rate with planning and budgeting for metering. Manual customer meter reading gives at least 80% customer meter reading success rate. Good customer meter testing. Regular replacement of statistically significant number of meters each year. Routine auditing of computerized billing records for global and detailed statistics, verified periodically by third party.</p> <p>Conditions between 8 and 10</p>	<p>At least 99% of customers with volume-based billing from meter reads. At least 95% customer meter read success rate, or minimum 80% read success rate with planning and budgeting for metering. Manual customer meter reading gives at least 80% customer meter reading success rate. Good customer meter testing. Regular replacement of statistically significant number of meters each year. Routine auditing of computerized billing records for global and detailed statistics, verified periodically by third party.</p> <p>Conditions between 8 and 10</p>	<p>At least 99% of customers with volume-based billing from meter reads. At least 95% customer meter read success rate, or minimum 80% read success rate with planning and budgeting for metering. Manual customer meter reading gives at least 80% customer meter reading success rate. Good customer meter testing. Regular replacement of statistically significant number of meters each year. Routine auditing of computerized billing records for global and detailed statistics, verified periodically by third party.</p> <p>Conditions between 8 and 10</p>	<p>At least 99% of customers with volume-based billing from meter reads. At least 95% customer meter read success rate, or minimum 80% read success rate with planning and budgeting for metering. Manual customer meter reading gives at least 80% customer meter reading success rate. Good customer meter testing. Regular replacement of statistically significant number of meters each year. Routine auditing of computerized billing records for global and detailed statistics, verified periodically by third party.</p> <p>Conditions between 8 and 10</p>
Billed metered:										
Improvements to attain higher data grading for "Billed Metered Consumption" component:	<p>If n/a is selected because the population is unmeasured, consider establishing a new policy to meter the customer population and employ water rates based upon metered volumes.</p>	<p>Purchase and install meters on unmeasured accounts. Implement metering during meter read visits to identify number of meters for accuracy, install computerized billing system.</p> <p>To qualify for 2: Purchase and install meters on unmeasured accounts. Implement metering during meter read visits to identify number of meters for accuracy, install computerized billing system.</p>	<p>Conditions between 2 and 4</p>	<p>Purchase and install meters on unmeasured accounts. Implement metering during meter read visits to identify number of meters for accuracy, install computerized billing system.</p> <p>To qualify for 6: Purchase and install meters on unmeasured accounts. Implement metering during meter read visits to identify number of meters for accuracy, install computerized billing system.</p>	<p>Conditions between 4 and 6</p>	<p>Purchase and install meters on unmeasured accounts. Implement metering during meter read visits to identify number of meters for accuracy, install computerized billing system.</p> <p>To qualify for 8: Purchase and install meters on unmeasured accounts. Implement metering during meter read visits to identify number of meters for accuracy, install computerized billing system.</p>	<p>Conditions between 6 and 8</p>	<p>Purchase and install meters on unmeasured accounts. Implement metering during meter read visits to identify number of meters for accuracy, install computerized billing system.</p> <p>To qualify for 10: Purchase and install meters on unmeasured accounts. Implement metering during meter read visits to identify number of meters for accuracy, install computerized billing system.</p>	<p>Conditions between 8 and 10</p>	<p>Purchase and install meters on unmeasured accounts. Implement metering during meter read visits to identify number of meters for accuracy, install computerized billing system.</p> <p>To qualify for 10: Purchase and install meters on unmeasured accounts. Implement metering during meter read visits to identify number of meters for accuracy, install computerized billing system.</p>
Billed unmeasured:	<p>Select n/a if it is the policy of the water utility to meter all customer connections and it has been confirmed that all customers do indeed have a water meter. If no accounts exist.</p>	<p>Water utility policy does not require customer metering, flat or fixed fee billed. No data collected on customer consumption. Only estimates available are derived from data estimation methods using average future count multiplied by number of connections, or similar approach.</p>	<p>Conditions between 2 and 4</p>	<p>Water utility policy does require metering and volume based billing, but lacks written procedures and employs casual oversight, resulting in up to 20% of billed accounts believed to be unmeasured. A rough estimate of the annual water audit, with no inspection of individual unmeasured accounts</p>	<p>Conditions between 4 and 6</p>	<p>Water utility policy does require metering and volume based billing, but lacks written procedures and employs casual oversight, resulting in up to 20% of billed accounts believed to be unmeasured. A rough estimate of the annual water audit, with no inspection of individual unmeasured accounts</p>	<p>Conditions between 6 and 8</p>	<p>Water utility policy does require metering and volume based billing, but lacks written procedures and employs casual oversight, resulting in up to 20% of billed accounts believed to be unmeasured. A rough estimate of the annual water audit, with no inspection of individual unmeasured accounts</p>	<p>Conditions between 8 and 10</p>	<p>Water utility policy requires metering and volume based billing for all customer accounts. Less than 2% of billed accounts are unmeasured and dual because meter installation is hindered by unusual circumstances. The goal exists to minimize the number of unmeasured accounts to the extent that is acceptable. Reliable estimates of consumption are obtained at these accounts via site specific estimation methods</p>

Grading											
	1	2	3	4	5	6	7	8	9	10	
Improvements to obtain higher data grade for "Unmetered Consumption" component	<p><i>to qualify for 2:</i> Investigate a new water utility policy to require metering of the customer population, and a reduction of unmetered accounts. Conduct pilot metering project by installing water meters in small sample of customer accounts and comparing the water consumption.</p>	<p><i>to qualify for 1:</i> Implement a new metering policy requiring study to include several different meter types, which will provide data for economic assessment of full scale metering options. Assess sites with access difficulties to develop means to obtain water consumption volumes.</p>	<p><i>to qualify for 4:</i> Budget for staff resources to review billing records to identify unmetered properties. Specify metering needs and funding requirements to install/uninstall meters to significant reduce the number of unmetered accounts.</p>	<p><i>to qualify for 6:</i> Initial customer meter installation throughout the service area, with a goal to minimize unmetered accounts. Streamline payment to investigate accounts with access difficulties or otherwise measure water consumption.</p>	<p><i>to qualify for 8:</i> Continue customer meter installation throughout the service area, with a goal to minimize unmetered accounts. Streamline payment to investigate accounts with access difficulties or otherwise measure water consumption.</p>	<p><i>to qualify for 10:</i> Continue to refine estimation methods for unmetered consumption and explore means to establish metering, for as many properties as is economically feasible.</p>	<p><i>to qualify for 10:</i> Clearly written policy identifies the types of accounts given a billing exemption, with emphasis on keeping such accounts to a minimum. Customer meter management and meter reading are considered secondary priorities, but meter reading is conducted at least annually to obtain consumption volumes for the annual billing cycle. Total water consumption for these accounts is taken from reliable readings from accurate meters.</p>	<p><i>to qualify for 10:</i> Reassess philosophy in allowing any water uses to go "unbilled", if possible to meter and bill all accounts, even if the flow charged for water consumption is discounted or waived. Metering and billing exemption is tracked and water waste from plumbing leaks is detected and minimized.</p>	<p><i>to qualify for 10:</i> Clear policies exist to identify permitted use of water with the intention of minimizing this type of consumption. Good records document each occurrence and consumption is quantified via formulae (line x typical flow) or use of temporary meters.</p>	<p><i>to qualify for 10:</i> Clear policies and good recordkeeping exist for some uses (ex. unmetered fire connections registering consumption), but other uses (ex. miscellaneous consumption) are limited oversight. Total consumption is a mix of well quantified use such as from formulae (line x typical flow) and metering subject to estimates of metering subject to estimates of less requested use.</p>	<p><i>to qualify for 10:</i> Conditions between 8 and 10</p>
Unbilled metered	<p>Billing practices exempt certain accounts, such as municipal buildings, but written policies do not exist, and a reliable count of unbilled metered accounts is unavailable. Meter replacement and meter reading occurs on an as-needed basis. The total annual water consumption for all unbilled metered accounts is estimated based upon spot readings and a guess at consumption from actively billed accounts of same meter size.</p>	<p>Billing practices exempt certain accounts, such as municipal buildings, but written policies do not exist, and a reliable count of unbilled metered accounts is unavailable. Meter replacement and meter reading occurs on an as-needed basis. The total annual water consumption for all unbilled metered accounts is estimated based upon spot readings and a guess at consumption from actively billed accounts of same meter size.</p>	<p>Dated written procedures permit billing exemption for specific properties, but are unclear regarding certain types of buildings is reliable but sporadic for other unbilled metered accounts. Periodic auditing of such accounts is conducted yearly. Water consumption is quantified through meter readings, but the majority of the consumption is estimated along with consumption volumes.</p>	<p>Written policy regarding billing exemptions exist but adherence practice is questionable. Metering and meter reading for municipal buildings is reliable but sporadic for other unbilled metered accounts. Periodic auditing of such accounts is conducted yearly. Water consumption is quantified through meter readings, but the majority of the consumption is estimated along with consumption volumes.</p>	<p>Written policy identifies the types of accounts granted a billing exemption. Customer meter management and meter reading are considered secondary priorities, but meter reading is conducted at least annually to obtain consumption volumes for the annual billing cycle. Total water consumption for these accounts exists.</p>	<p>Conditions between 6 and 8</p>	<p>Conditions between 6 and 8</p>	<p>Conditions between 6 and 8</p>	<p>Conditions between 8 and 10</p>	<p>Conditions between 8 and 10</p>	
Improvements to obtain higher data grade for "Unbilled Consumption" component	<p><i>to qualify for 2:</i> Reassess the water utility's policy allowing certain accounts to be granted a billing exemption. Draft an outline of a new written policy on billing auditing, water consumption for all such accounts is purely metered, and with the intention to keep the number of such accounts to a minimum.</p>	<p><i>to qualify for 4:</i> Review historic, written directives and policy documents allowing certain accounts to be billing exempt. Draft an outline of a written policy for billing exemptions. Identify criteria that grants an exemption, with a goal of keeping the number of accounts to a minimum.</p>	<p><i>to qualify for 6:</i> Draft a new written policy regarding billing exemptions based upon consumption criteria allowing this occurrence. Assign resources to audit meter records and billing records to obtain accurate metered and unbilled accounts.</p>	<p><i>to qualify for 8:</i> Communicate the new policy throughout the organization and implement procedures that ensure proper account management. Conduct inspections of accounts confirmed in unbilled metered status and verify that accurate meters exist and are scheduled for routine meter readings.</p>	<p><i>to qualify for 10:</i> Ensure that meter replacement (meter accuracy testing, meter replacement) and meter reading activities are accorded the same priority as billed accounts. Establish ongoing annual auditing process to ensure that water consumption is reliably collected and provided to the annual water audit process.</p>	<p><i>to qualify for 10:</i> Reassess philosophy in allowing any water uses to go "unbilled", if possible to meter and bill all accounts, even if the flow charged for water consumption is discounted or waived. Metering and billing exemption is tracked and water waste from plumbing leaks is detected and minimized.</p>	<p><i>to qualify for 10:</i> Clear policies exist to identify permitted use of water with the intention of minimizing this type of consumption. Good records document each occurrence and consumption is quantified via formulae (line x typical flow) or use of temporary meters.</p>	<p><i>to qualify for 10:</i> Clear policies and good recordkeeping exist for some uses (ex. unmetered fire connections registering consumption), but other uses (ex. miscellaneous consumption) are limited oversight. Total consumption is a mix of well quantified use such as from formulae (line x typical flow) and metering subject to estimates of metering subject to estimates of less requested use.</p>	<p><i>to qualify for 10:</i> Conditions between 8 and 10</p>	<p><i>to qualify for 10:</i> Conditions between 8 and 10</p>	
Unbilled unmetered	<p>Extent of unbilled, unmetered consumption is unknown due to unclear policies and poor recordkeeping. Total consumption is based upon a purely subjective estimate.</p>	<p>Clear extent of unbilled, unmetered consumption is unknown, but a number of events are randomly documented each year, confirming existence of consumption. An accurate accumulation to quantify an estimate of the annual volume consumed.</p>	<p>Extent of unbilled, unmetered consumption is partially known, and procedures exist to document certain events. A system input formula is used to quantify the consumption from such events (line running x typical flow rate x number of events).</p>	<p>Coherent policies exist for some forms of unbilled, unmetered consumption but others are not. Recordkeeping for the metered uses exists and allows for annual volume to be quantified by inference, but unsupervised uses are guesstimated.</p>	<p>Coherent policies exist for some uses (ex. unmetered fire connections registering consumption), but other uses (ex. miscellaneous consumption) are limited oversight. Total consumption is a mix of well quantified use such as from formulae (line x typical flow) and metering subject to estimates of metering subject to estimates of less requested use.</p>	<p><i>to qualify for 10:</i> Clear policies exist to identify permitted use of water with the intention of minimizing this type of consumption. Good records document each occurrence and consumption is quantified via formulae (line x typical flow) or use of temporary meters.</p>	<p><i>to qualify for 10:</i> Clear policies and good recordkeeping exist for some uses (ex. unmetered fire connections registering consumption), but other uses (ex. miscellaneous consumption) are limited oversight. Total consumption is a mix of well quantified use such as from formulae (line x typical flow) and metering subject to estimates of metering subject to estimates of less requested use.</p>	<p><i>to qualify for 10:</i> Conditions between 8 and 10</p>	<p><i>to qualify for 10:</i> Conditions between 8 and 10</p>	<p><i>to qualify for 10:</i> Conditions between 8 and 10</p>	

Grading										
	1	2	3	4	5	6	7	8	9	10
Improvements to attain higher data grading for "Unmetered Consumer" component:	<p>to qualify for 1: Utilize accepted default value of 0.125% of system input volume as an expedient means to gain a reasonable quantification of this use.</p> <p>to qualify for 2: Establish a policy regarding what water uses should be allowed as unmetered and unmeasured. Consider tracking use (ex: fire hydrant flushings)</p>	<p>to qualify for 3: Utilize accepted default value of 1.25% of system input volume as an expedient means to gain a reasonable quantification of this use.</p> <p>to qualify for 4: Evaluate the documented events that have been observed. Meet with user groups (ex: fire hydrants, fire departments, contractors) to ascertain their need for water from fire hydrants.</p>	<p>to qualify for 5: Utilize accepted default value of 0.25% of system input volume as an expedient means to gain a reasonable quantification of all such use. This is particularly appropriate for water utilities who are in the early stages of the auditing process.</p>	<p>to qualify for 6: Assess water use procedures to ensure that all uses of fire hydrants (permits are issued for use by persons outside of the utility. Create written procedures for use and documentation of fire hydrants) by water utility personnel.</p>	<p>to qualify for 7: Refine written procedures to ensure that all uses of fire hydrants (permits are issued for use by persons outside of the utility. Create written procedures for use and documentation of fire hydrants) by water utility personnel.</p>	<p>to qualify for 8: Refine written procedures to ensure that all uses of fire hydrants (permits are issued for use by persons outside of the utility. Create written procedures for use and documentation of fire hydrants) by water utility personnel.</p>	<p>to qualify for 9: Refine written procedures to ensure that all uses of fire hydrants (permits are issued for use by persons outside of the utility. Create written procedures for use and documentation of fire hydrants) by water utility personnel.</p>	<p>to qualify for 10: Continue to refine policy and procedures with intention of reducing the number of allowable uses of water in unlogged and unmeasured fashion. Any uses that cannot be logged or measured should be converted eventually.</p>		
Unmetered consumption	<p>Extent of unmetered consumption is unknown due to unclear policies and procedures. Total unmetered consumption is guesstimated.</p>	<p>Unmetered consumption is a mystery. There are no requirements to document observed events, but periodic field reports capture some of these occurrences. Total unmetered consumption is approximated from this limited data.</p>	<p>Use accepted default of 0.25% of system input volume.</p> <p>to qualify for 4: Review utility policy regarding what water uses are considered unmetered, and consider tracking a small sample of one such occurrence (ex: unmetered fire hydrant openings)</p>	<p>Procedures exist to document some unmetered consumption such as observed unmetered fire hydrant openings. Typical fire hydrant openings are quantified by the number of typical fire hydrant openings (events).</p>	<p>Default value of 0.125% of system input volume is employed.</p>	<p>Coherent policies exist for some forms of unmetered consumption but others await clarification and accounting. Procedures exist for occurrences that fall under this policy. Volumes quantified by inference from these records. Un-supervised uses are guesstimated.</p>	<p>Clear policies and good recordkeeping exist for certain meters (ex: temporary use) but some meters have limited oversight. Total consumption is a combination of volumes from formulae (line x typical flow) and subjective estimates of unconfirmed consumption.</p>	<p>Clear policies exist to identify all uses of unmetered water. Staff and procedures exist to provide enforcement of policies and detect violations. Each occurrence is quantified via formulae (line x typical flow) or similar methods.</p>		
Improvements to attain higher data grading for "Unauthorized Consumption" component:	<p>Customer meters exist but records on meters, no meter accuracy testing or meter replacement program. Workflows are driven chaotically by customer complaints with no proactive management. Loss volume due to aggregate meter inaccuracy is guesstimated.</p>	<p>Poor recordkeeping and meter oversight is recognized by water utility management who has allowed staff and utility recordkeeping and data meter accuracy testing. Existing paper records gathered and organized to provide cursory disposition of meter population.</p>	<p>Reliable recordkeeping exists; meter information is improving as meters are replaced. Limited number of meters replaced each year. Inaccuracy volume is largely an estimate, but refined based upon limited testing data.</p>	<p>Procedures exist to document some unmetered consumption such as observed unmetered fire hydrant openings. Typical fire hydrant openings are quantified by the number of typical fire hydrant openings (events).</p>	<p>Default value of 0.125% of system input volume is employed.</p>	<p>Coherent policies exist for some forms of unmetered consumption but others await clarification and accounting. Procedures exist for occurrences that fall under this policy. Volumes quantified by inference from these records. Un-supervised uses are guesstimated.</p>	<p>Clear policies and good recordkeeping exist for certain meters (ex: temporary use) but some meters have limited oversight. Total consumption is a combination of volumes from formulae (line x typical flow) and subjective estimates of unconfirmed consumption.</p>	<p>Clear policies exist to identify all uses of unmetered water. Staff and procedures exist to provide enforcement of policies and detect violations. Each occurrence is quantified via formulae (line x typical flow) or similar methods.</p>		
Customer metering inaccuracies	<p>select only if the entire customer population is unmetered. In such a case the volume entered must be zero.</p>	<p>Customer meters exist but records on meters, no meter accuracy testing or meter replacement program. Workflows are driven chaotically by customer complaints with no proactive management. Loss volume due to aggregate meter inaccuracy is guesstimated.</p>	<p>Reliable recordkeeping exists; meter information is improving as meters are replaced. Limited number of meters replaced each year. Inaccuracy volume is largely an estimate, but refined based upon limited testing data.</p>	<p>Procedures exist to document some unmetered consumption such as observed unmetered fire hydrant openings. Typical fire hydrant openings are quantified by the number of typical fire hydrant openings (events).</p>	<p>Default value of 0.125% of system input volume is employed.</p>	<p>Coherent policies exist for some forms of unmetered consumption but others await clarification and accounting. Procedures exist for occurrences that fall under this policy. Volumes quantified by inference from these records. Un-supervised uses are guesstimated.</p>	<p>Clear policies and good recordkeeping exist for certain meters (ex: temporary use) but some meters have limited oversight. Total consumption is a combination of volumes from formulae (line x typical flow) and subjective estimates of unconfirmed consumption.</p>	<p>Clear policies exist to identify all uses of unmetered water. Staff and procedures exist to provide enforcement of policies and detect violations. Each occurrence is quantified via formulae (line x typical flow) or similar methods.</p>		
Improvements to attain higher data grading for "Customer meter inaccuracy volume" component:	<p>If it is selected because the population is unmetered, consider establishing a new policy to meter the customer population and employ water rates based upon metered volumes.</p>	<p>Customer meters exist but records on meters, no meter accuracy testing or meter replacement program. Workflows are driven chaotically by customer complaints with no proactive management. Loss volume due to aggregate meter inaccuracy is guesstimated.</p>	<p>Reliable recordkeeping exists; meter information is improving as meters are replaced. Limited number of meters replaced each year. Inaccuracy volume is largely an estimate, but refined based upon limited testing data.</p>	<p>Procedures exist to document some unmetered consumption such as observed unmetered fire hydrant openings. Typical fire hydrant openings are quantified by the number of typical fire hydrant openings (events).</p>	<p>Default value of 0.125% of system input volume is employed.</p>	<p>Coherent policies exist for some forms of unmetered consumption but others await clarification and accounting. Procedures exist for occurrences that fall under this policy. Volumes quantified by inference from these records. Un-supervised uses are guesstimated.</p>	<p>Clear policies and good recordkeeping exist for certain meters (ex: temporary use) but some meters have limited oversight. Total consumption is a combination of volumes from formulae (line x typical flow) and subjective estimates of unconfirmed consumption.</p>	<p>Clear policies exist to identify all uses of unmetered water. Staff and procedures exist to provide enforcement of policies and detect violations. Each occurrence is quantified via formulae (line x typical flow) or similar methods.</p>		

Grading											
	1	2	3	4	5	6	7	8	9	10	
Systematic Data Handling Error	Note: all water utilities incur some amount of this error. Even in water utilities with unimpaired customer record keeping and good rate billing, errors occur in annual billing tabulations. Enter a positive value for the volume and select a grading.	Policy for permitting and billing exists but needs refinement. Billing data maintained on paper records or insufficiently capable electronic database. Only periodic, unstructured auditing work conducted to confirm billing data unless when a billing lapse is a guess.	Conditions between 2 and 4	Policy and procedures for permitting and billing exist but needs refinement. Computerized billing system exists, but is dated or lacks needed functionality. Periodic, limited auditing work is done to confirm billing accuracy. Consumption volumes lost to billing lapses.	Conditions between 4 and 6	Policy for permitting and billing is periodically computerized billing system in use with basic reporting available. Any effect of billing adjustments on measured consumption volumes is well understood. Internal checks of billing data error conducted annually. Reasonably accurate quantification of consumption volume lost to billing lapses is obtained.	Conditions between 6 and 8	Permitting and billing policy reviewed at least biannually. Computerized billing system includes basic checks and system functionality. Annual internal checks conducted with periodic third party audit. Accountability consumption lost to billing lapses is minimized and detected as it occurs.	Conditions between 8 and 10	Sound policy exists for permitting of all customer billing and bills. Computerized billing system covers high functionality and reporting capabilities. Assessment of policy and data handling errors conducted externally and audited by third party annually, ensuring consumption lost to billing lapses is minimized and detected as it occurs.	
	Improvements to attain higher data grading for "Systematic Data Handling Error volume" component:	to qualify for 2: Develop policy for permitting and billing. Investigate and budget for computerized customer billing system. Conduct initial audit of billing records by flow-charting the basic business processes of the customer account/billing function.	to qualify for 4: Finalize within policy for permitting and billing system. Conduct initial audit of billing records as part of this process.	to qualify for 6: Refine permitting and billing policy, regarding billing, and minimize opportunity for missed billings. Upgrade or replace customer billing system for needed functionality - ensure that billing adjustments don't corrupt the value of consumption volumes. Procedure internal annual audit process.	to qualify for 8: Formalize regular review of permitting and billing procedures. Enhance reporting capability of computerized billing system. Formalize regular auditing process. Review scope of data handling error.	to qualify for 10: Close policy/procedure loopholes that allow some customer accounts to go unbilled, or data handling errors to exist. Ensure that internal and third party audits are conducted annually.	to maintain 10: Stay abreast of customer information management developments and innovations. Monitor developments of Advanced Metering Infrastructure (AMI) and integrate technology to ensure that customer endpoint information is well-integrated and errors/lapses are at an economic minimum.		Sound policy exists for managing water mains extensions and replacements. Geographic Information System (GIS) data and asset management database agree and random field validation proves truth of databases.		
Length of mains	Poorly assembled and maintained paper as-built records of existing water main installations makes accurate determination of system pipe length impossible. Length of mains is gross/estimated.	Paper records in poor condition (no annual tracking of installations & abandonments). Poor procedures to ensure that new water main installations and devices are accurately documented.	Conditions between 2 and 4	Sound policy and procedures for permitting and documenting new water main installations, but gaps in management result in a uncertain degree of error in tabulation of mains length.	Conditions between 4 and 6	Sound policy and procedures exist for permitting and commissioning new water mains. Highly accurate paper records with regular field validation, or electronic records and asset management system in good condition. Includes system backup.	Conditions between 6 and 8	Sound policy and procedures exist for permitting and commissioning new water mains. Electronic records and asset management database are used to above and manage data.	Conditions between 8 and 10	Sound policy exists for managing water mains extensions and replacements. Geographic Information System (GIS) data and asset management database agree and random field validation proves truth of databases.	
Improvements to obtain higher data grading for "Length of Water Mains" component:	to qualify for 2: Assign personnel to inventory current as-built records and compare with customer billing system records and highway plans. Assemble policy documents regarding permitting and documentation of water main installations by the utility and building in procedures. Identify gaps in poor documentation.	to qualify for 4: Complete inventory of paper records of water main installations & abandonments for a number of years prior to audit year. Review policy and procedures for commissioning and documenting new water main installation and abandonments.	to qualify for 6: Finalize updates/improvements to policy and procedures for permitting/commissioning new main installations. Confirm inventory of records for five years prior to audit year; correct any errors or omissions.	to qualify for 8: Launch random field checks of limited number of locations. Convert to electronic databases with backup as justified.	to qualify for 10: Link Geographic Information System (GIS) and asset management databases, conduct field verification of data.	to maintain 10: Continue with standardization and random field validation to improve knowledge of system.		Sound permitting policy and well managed and audited procedures ensure reliable management of service connection population. Computerized information management system includes GIS information across field validation proves truth of databases. Count of connections believed to be in error by less than 1%.			
Number of active AND inactive service connections:	Vague permitting (or new service connections) policy and poor paper record-keeping of customer connections/billings result in suspect determination of the number of service connections, which may be 10-15% in error from actual count.	General permitting policy exists but paper records, procedural gaps, and weak oversight result in questionable total for number of connections, which may vary 5-10% of actual count.	Conditions between 2 and 4	Permitting policy and procedures exist, but with some gaps in performance and oversight. Computerized information management system is in use with annual installations & abandonments tabulated. Reasonably accurate tracking of service connection installations & abandonments, but count can be up to 5% in error from actual total.	Conditions between 4 and 6	Permitting policy and procedures are adequate and reviewed periodically. Computerized information management system is in use with annual installations & abandonments tabulated. Very limited field verifications and audits. Error in count of number of service connections believed to be no more than 3%.	Conditions between 6 and 8	Permitting policy and procedures reviewed at least biannually. Well managed computerized information management system includes periodic field checks and routine, periodic field verifications and audits. Error in count of number of connections that is no more than 2% in error.	Conditions between 8 and 10	Sound permitting policy and well managed and audited procedures ensure reliable management of service connection population. Computerized information management system includes GIS information across field validation proves truth of databases. Count of connections believed to be in error by less than 1%.	

Grading										
	1	2	3	4	5	6	7	8	9	10
Improvements to attain higher data grading for "Number of Active and Inactive Customer Service Connections" component	<p>to qualify for 1:</p> <p>Draft new policy and procedures for permitting and billing. Research and collect paper records of installations & abandonment for several years prior to audit year.</p>	<p>to qualify for 2:</p> <p>Refine policy and procedures for permitting and billing. Research computerized recordkeeping system (Customer Information System or Customer Billing System) to improve documentation format for service connections.</p>	<p>to qualify for 3:</p> <p>Refine procedures to ensure consistency with permitting policy to establish new, service connections or disconnections existing information management system.</p>	<p>to qualify for 4:</p> <p>Formalize regular review of permitting policy and procedures. Launch random field checks of limited number of locations. Develop reports and auditing mechanisms for computerized information management system.</p>	<p>to qualify for 5:</p> <p>Close any procedural loopholes that allow installations to go undocumented. Link computerized information management system with Geographic Information System (GIS) and formalize field inspection and information system auditing processes. Documentation of new or discontinued service connections encourages several levels of checks and balances.</p>	<p>to qualify for 6:</p> <p>Formalize regular review of permitting policy and procedures. Launch random field checks of limited number of locations. Develop reports and auditing mechanisms for computerized information management system.</p>	<p>to qualify for 7:</p> <p>Formalize regular review of permitting policy and procedures. Launch random field checks of limited number of locations. Develop reports and auditing mechanisms for computerized information management system.</p>	<p>to qualify for 8:</p> <p>Formalize regular review of permitting policy and procedures. Launch random field checks of limited number of locations. Develop reports and auditing mechanisms for computerized information management system.</p>	<p>to qualify for 9:</p> <p>Formalize regular review of permitting policy and procedures. Launch random field checks of limited number of locations. Develop reports and auditing mechanisms for computerized information management system.</p>	<p>to maintain 10:</p> <p>Continue with standardization and random field validation to improve knowledge of system.</p>
Average length of customer service line	<p>Note if customer water meters are located outside of building next to the curbstop or boundary separating utility/customer responsibility, follow the grading description for 10(a). Also see the Service Connection Diagram worksheet.</p>	<p>Policy requires that the curbstop between water utility ownership and customer ownership of the service connection piping. The curbstop is the property of the water utility, and the piping from the curbstop to the customer building is owned by the customer. Curbstop locations are not well documented and the average distance is based upon a limited number of locations measured in the field.</p>	<p>Conditions between 2 and 4.</p>	<p>Good policy requires that the curbstop serves as the delineation point between water utility ownership and customer ownership of the service connection piping. Curbstops are generally installed as needed and are reasonably located. Curbstop locations are not well documented and the average distance is based upon a limited availability of paper records.</p>	<p>Conditions between 4 and 6.</p>	<p>Clear policy exists to define utility/customer responsibility for accurate, well-maintained paper or electronic records exist with periodic field checks to confirm curbstop and customer meter locations and customer meter customer propensities from the consistent rating system. No routine averaging of this length.</p>	<p>Conditions between 6 and 8.</p>	<p>Clearly worded policy standards and meters, which are respected upon installation. Accurate and well maintained electronic records exist with periodic field checks to confirm curbstop and customer meter locations and customer meter customer propensities from the consistent rating system. No routine averaging of this length.</p>	<p>Conditions between 8 and 10.</p>	<p>Either of two conditions can be met to obtain a grade of 10:</p> <p>a) The customer water meter is located outside of the customer building adjacent to the curbstop or boundary separating utility/customer responsibility for the service connection piping. In this case enter a value of zero in the Reporting Worksheet with a grade of 10.</p> <p>b) Customer water meters are located inside customer buildings or the properties are unimproved. In either case the distance is highly reliable since data is drawn from a Geographic Information System (GIS) and confirmed by routine field checks.</p>
Improvements to obtain higher data grading for "Average Length of Customer Service Line" component:	<p>to qualify for 2:</p> <p>Research and collect paper records of service line installations. Inspect several sites in the field using pipe locators to locate curbstops. Obtain the length of this small sample of connections in this manner.</p>	<p>to qualify for 3:</p> <p>Formalize and communicate policy delineating utility/customer responsibility for service connection piping. Assess accuracy of paper records by field inspection of a small sample of service connections using pipe locators as needed. Research the potential migration to a computerized information management system to store service connection data.</p>	<p>Conditions between 2 and 4.</p>	<p>Establish coherent policy, delineating policy for curbstop meter installation and documentation is followed. Gain consensus within the water utility for the establishment of a computerized information management system.</p>	<p>to qualify for 4:</p> <p>Implement electronic means of recordkeeping, typically via a customer information system or customer billing system. Standardize the process to conduct field checks of limited number of locations.</p>	<p>Conditions between 4 and 6.</p>	<p>Implement electronic means of recordkeeping, typically via a customer information system or customer billing system. Standardize the process to conduct field checks of limited number of locations.</p>	<p>Link customer information management system and Geographic Information System (GIS) and standardize process for field verification of data.</p>	<p>Conditions between 8 and 10.</p>	<p>Continue with standardization and random field validation to improve knowledge of system.</p>
Average operating pressure	<p>Available records are poorly assembled and maintained. Paper records of supply pump characteristics and water distribution system operating conditions. Average pressure is guessed based upon topographical maps. Widely varying distribution system pressures due to undulating terrain, high system head loss and weak/erratic pressure controls further compromise the validity of the average pressure calculation.</p>	<p>Limited telemetry monitoring of customer sites provides some static pressure data which is recorded in handwritten logbooks. Pressure data is gathered at individual sites only when low pressure complaints arise. Average pressure is determined by averaging relatively crude data and is affected by significant variation in ground elevations, system head loss and pressure controls in the distribution system.</p>	<p>Conditions between 2 and 4.</p>	<p>Effective pressure controls separate different pressure zones across the system, occasional open boundary valves are documented. Telemetry monitoring of the distribution system logs pressure data gathered by gauges or dataloggers at fire hydrants or buildings when low pressure complaints arise, and during fire flow tests and system flushing. Reliable topographical data exists. Average pressure is calculated using this mix of data.</p>	<p>Establish coherent policy, delineating policy for curbstop meter installation and documentation is followed. Gain consensus within the water utility for the establishment of a computerized information management system.</p>	<p>Conditions between 4 and 6.</p>	<p>Reliable pressure controls separate different pressure zones across the system, occasional open boundary valves are documented. Telemetry monitoring of the distribution system logs pressure data gathered by gauges or dataloggers at fire hydrants or buildings when low pressure complaints arise, and during fire flow tests and system flushing. Average pressure is determined by using this mix of reliable data.</p>	<p>Well-managed, discrete pressure zones exist with generally predictable pressure fluctuations. A current, full-scale SCADA system exists to monitor the water distribution system and collect readings at representative sites across the system. The average system pressure is reliably calculated from extensive, reliable, and cross-checked data.</p>	<p>Conditions between 8 and 10.</p>	<p>Well-managed pressure distributions, SCADA system and hydraulic models to give the water distribution system. Average system pressure is reliably calculated from extensive, reliable, and cross-checked data.</p>

	1	2	3	4	5	6	7	8	9	10
Improvements to obtain higher data grading for "Average Operating Pressure" component.	to qualify for 2: Employ datalogging equipment to obtain pressure measurements from fire hydrants. Locate accurate topographical maps of service area in order to confirm ground elevations. Research pump data sheets to find pump pressure/flow characteristics.	to qualify for 1: Formulate a plan to use pressure data during various system events such as low pressure complaints, or operational testing. Gather pump pressure and flow data at different flow regimes. Identify faulty pressure controls (pressure reducing valves, altitude valves, partially open boundary valves) and plan to properly configure pressure zone data sheets to find pump pressure.	to qualify for 4: Expand the use of pressure gauging/datalogging equipment to gather scaled pressure data at a representative set of sites, based upon pressure zones or areas. Utilize pump pressure and flow data to determine pressure zone boundaries. Consider pressure zone or district. Consider any faulty pressure controls (pressure reducing valves, altitude valves, partially open boundary valves) to ensure properly configured pressure zones. Use expanded pressure dataset from these activities to generate system-wide average pressure.	to qualify for 5: Install a Supervisory Control and Data Acquisition (SCADA) system to monitor system parameters and control operations. Set regular calibration schedule for instrumentation to insure data accuracy. Obtain accurate topographical data and utilize pressure data gathered from field surveys to provide extensive, reliable data for pressure averaging.	to qualify for 10: Obtain average pressure data from hydraulic model of the system and compare with SCADA data. Validate field measurements to the water distribution system and confirmed in comparisons with SCADA system data.	to maintain 10: Continue to refine the hydraulic model and compare with SCADA data. System for real-time pressure data calibration, and averaging.				
COST DATA										
Total annual cost of operating water system.	Incomplete paper records and lack of data functions make calculation of water system operating costs a pure guessimate.	Reasonably maintained, but incomplete, paper or electronic accounting provides data to estimate the major portion of water system operating costs.	Conditions between 2 and 4.	Electronic, industry-standard cost accounting system in place. Gaps in data known to exist. Periodic internal reviews conducted but not a structured audit.	Conditions between 4 and 6.	Reliable electronic, industry-standard cost accounting system in place, with all pertinent water system operating costs tracked. Data audited periodically by utility personnel, and periodically by third-party CPA.	Conditions between 6 and 8.	Reliable electronic, industry-standard cost accounting system in place, with all pertinent water system operating costs tracked. Data audited at least annually by utility personnel, and periodically by third-party CPA.	Conditions between 8 and 10.	Reliable electronic, industry-standard cost accounting system in place, with all pertinent water system operating costs tracked. Data audited annually by utility personnel and by third-party CPA.
Improvements to allow higher data grading for "Total Annual Cost of Operating the Water System" component.	to qualify for 2: Gather available records, institute new procedures to regularly collect and audit basic cost data of most important operations functions.	to qualify for 4: Implement an electronic cost accounting system, standardize accounting standards for water utility.	to qualify for 4: Establish process for periodic internal audit of water system operating costs; identify cost data gaps and institute procedures for tracking these outstanding costs.	to qualify for 6: Standardize the process to conduct routine financial audit on an annual basis.	to qualify for 10: Standardize the process to conduct a third-party financial audit by a CPA on an annual basis.					
Customer retail unit cost (applied to Apparent Losses).	Misquoted, cumbersome water rate structure is use, with periodic historic amendments that were poorly documented and implemented, resulting in classes of customers being billed inconsistent charges. The actual composite billing rate likely differs significantly from the published water rate structure, but degree of error indeterminable.	Dated, cumbersome water rate structure, not always employed consistently in actual billing. Billing rate is known to differ from the published water rate structure, and a reasonable estimate of the degree of error is determined, allowing a composite billing rate to be quantified.	Customer population estimates are used to charge single composite rate to all customer classes.	Clearly written, up-to-date water rate structure in force and is applied reliably in billing operations. Composite rate is determined using a weighted average composite consumption rate, including residential and any other customer classes within the water rate structure.	Effective water rate structure is in force and is applied reliably in billing operations. Composite rate is determined using a weighted average composite consumption rate, including residential, commercial, industrial, etc.)					
Improvements to obtain higher data grading for "Customer Retail Unit Cost" component.	to qualify for 2: Formalize the process to implement water rates, including a secure documentation procedure. Create a current, formal water rate document and gain approval from all stakeholders.	to qualify for 4: Review the water rate structure and update/formalize as needed. Assess billing operations to ensure their actual billing rate structure.	to qualify for 6: Evaluate volume of water used in each usage block by residential users. Multiply volumes by full rate structure.	to qualify for 10: Conduct a periodic third-party audit of water used in each usage block by all classifications of users. Multiply volumes by full rate structure.	to maintain 10: Keep water rate structure current in addressing the water utility's revenue needs. Update the calculation of the customer unit rate as new rate components, customer classes, or other components are modified.					
Variable production cost (applied to Real Losses)	Incomplete paper records and lack of documentation on primary operating functions (electric power and treatment costs most importantly) makes production costs a pure guessimate.	Reasonably maintained, but incomplete, paper or electronic accounting provides data to roughly estimate the basic operations costs (pumping power costs, and other) and calculate a unit variable production cost.	Electronic, industry-standard cost accounting system in place. Electric power and treatment costs are reliably tracked and allow accurate calculation of unit variable production costs based on these two inputs only. All costs are audited internally on a periodic basis.	Reliable electronic, industry-standard cost accounting system in place, with all pertinent water system operating costs tracked. Permit adjustments for energy, residuals management, etc. are included in the unit variable production cost. Data audited at least annually by utility personnel.	Reliable electronic, industry-standard cost accounting system in place, with all pertinent water system operating costs tracked. Data audited at least annually by utility personnel, and periodically by third-party.	Either of two conditions can be met to obtain a grading of 10: 1) Third party CPA audit of all primary and secondary cost components on an annual basis. 2) Water supply is entirely purchased as bulk imported water and unit purchase cost serves as the variable production cost.				

Grading										
	1	2	3	4	5	6	7	8	9	10
Improve ability to enter higher level grading for Variable Production Cost component	n/a									
	<p>to qualify for 2:</p> <p>Gather available records, institute new procedures to regularly collect and audit basic cost data and most important operations functions.</p>	<p>to qualify for 2:</p> <p>Implement an electronic cost accounting system, structured according to accounting standards for water utilities.</p>	<p>to qualify for 3:</p> <p>Formalize process for regular internal audits of production costs. Assess whether additional costs (quality, maintenance, etc.) should be included in accounting variable production cost.</p>	<p>to qualify for 4:</p> <p>Formalize the accounting process to include primary cost components (power, treatment) as well as secondary costs (quality, maintenance, etc.). Conduct periodic recalculate internal cost. Conduct periodic third-party audits.</p>	<p>to qualify for 5:</p> <p>Formalize the accounting process to include primary cost components (power, treatment) as well as secondary costs (quality, maintenance, etc.). Conduct periodic recalculate internal cost. Conduct periodic third-party audits.</p>	<p>to qualify for 6:</p> <p>Standardize the process to conduct a third-party financial audit by a CPA on an annual basis.</p>	<p>to qualify for 7:</p> <p>Maintain program, stay abreast of expenses subject to make cost changes and budgetback costs proactively.</p>			

[Return to Reporting Worksheet](#)

Average Length of Customer Service Line

The three figures shown on this worksheet display the assignment of the Average Length of Customer Service Line, L_p , for the three most common piping configurations.

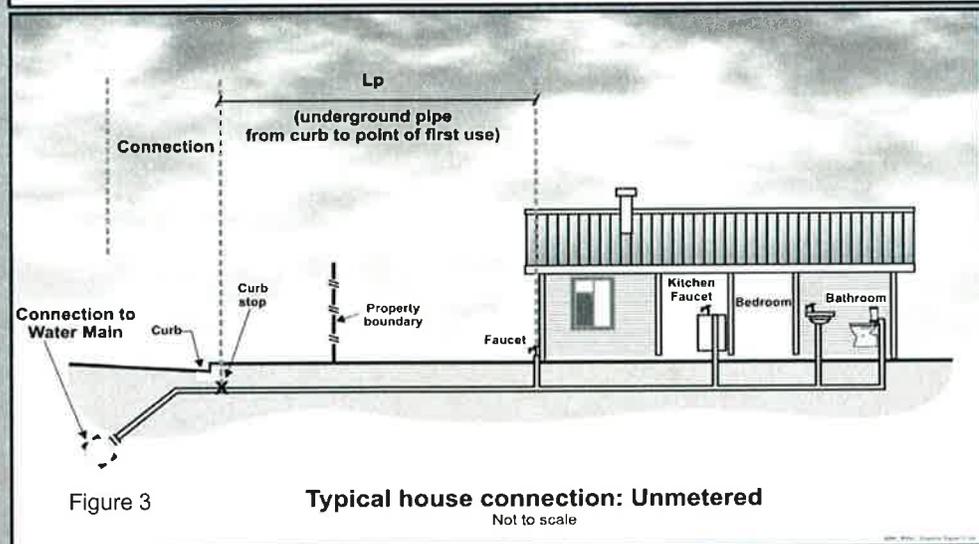
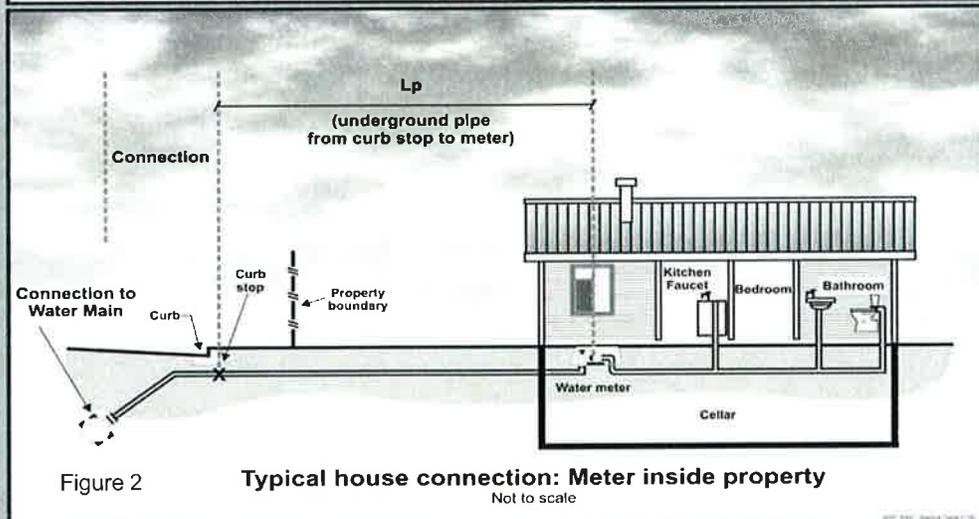
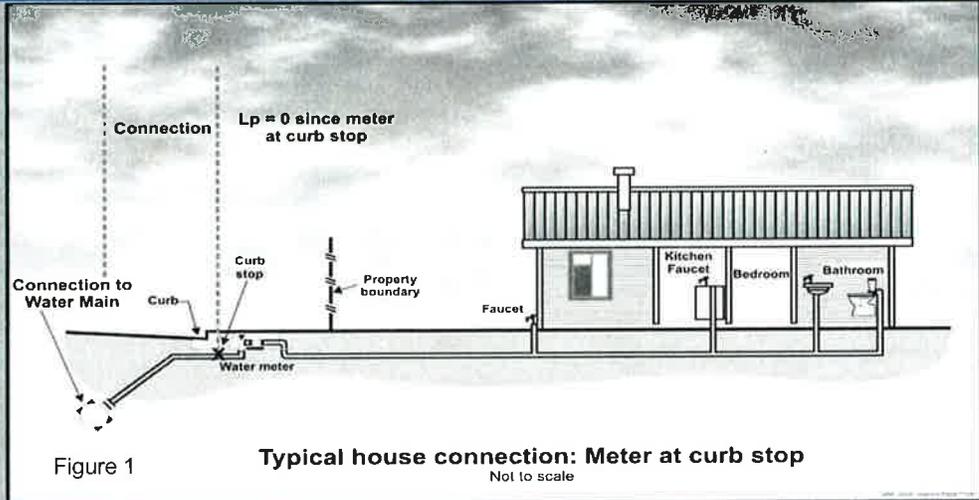
Figure 1 shows the configuration of the water meter outside of the customer building next to the curbstop valve. In this configuration $L_p = 0$ since the distance between the curbstop and the customer metering point is essentially zero.

Figure 2 shows the configuration of the customer water meter located inside the customer building, where L_p is the distance from the curbstop to the water meter.

Figure 3 shows the configuration of an unmetered customer building, where L_p is the distance from the curbstop to the first point of customer water consumption, or, more simply, the building line.

In any water system the L_p will vary notably in a community of different structures, therefore the average L_p value is used and this should be approximated or calculated if a sample of service line measurements has been gathered.

[Click for more information](#)



AWWA WLCC Free Water Audit Software: Definitions

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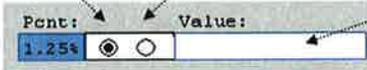
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Item Name	Description
Apparent Losses	<p>= unauthorized consumption + meter under-registration + data handling errors</p> <p>Includes all types of inaccuracies associated with customer metering as well as data handling errors (meter reading and billing), plus unauthorized consumption (theft or illegal use).</p> <p>NOTE: Over-registration of customer meters, leads to under-estimation of Real Losses. Under-registration of customer meters, leads to over-estimation of Real Losses.</p>
AUTHORIZED CONSUMPTION	<p>= billed metered + billed unmetered + unbilled metered + unbilled unmetered</p> <p>The volume of metered and/or unmetered water taken by registered customers, the water supplier and others who are implicitly or explicitly authorized to do so by the water supplier, for residential, commercial and industrial purposes. This does NOT include water sold to neighboring utilities (water exported).</p> <p>Authorized consumption may include items such as fire fighting and training, flushing of mains and sewers, street cleaning, watering of municipal gardens, public fountains, frost protection, building water, etc. These may be billed or unbilled, metered or unmetered.</p>
Average length of customer service line	<p>This is entered for unmetered services and in cold or other areas where meters are installed inside homes and buildings. It is the length of customer service line either between the utility's service connection (often at the curbstop) and the meter, or to the building line (first point of customer consumption) if customers are unmetered. Note that the length of service connection between the main and customer service line is owned by the utility and its length and potential leakage is accounted for in the UARL formula by the number of service connections.</p> <p>What role does the "Average Length of Customer Service Line" parameter serve in the Water Audit?</p> <p>In many water distribution systems the water utility has maintenance responsibility for a portion of the customer service piping from its connection point at the water main to the curbstop valve located midway to the customer building. The customer is responsible to maintain the customer service piping from the curbstop to the building premises. When leaks arise on customer service piping, water utilities respond faster to repair leaks than customers when the leak is on piping under their responsibility. Leak durations are longer on the customer-maintained piping than the utility-maintained piping. The total length of pipe maintained by customers is one of the components of the Unavoidable Annual Real Loss (UARL) equation and is determined by multiplying the average length of customer maintained pipe, L_p by the number of customer service connections. Therefore this parameter is important to the calculation of the UARL and the Infrastructure leakage Index (ILI).</p> <p style="text-align: right;">Click to see Service Connection Diagram</p>
Average operating pressure	<p>The average pressure may be approximated when compiling the preliminary water audit. Once routine water auditing has been established, a more accurate assessment of average pressure should be pursued. If the water utility infrastructure is recorded in a Geographical Information System (GIS) the average pressure at many locations in the distribution system can be readily obtained. If a GIS does not exist, a weighted average of pressure data can be calculated from water pressure measured at various fire hydrants scattered across the water distribution system.</p>
Billed Authorized Consumption	<p>All consumption that is billed and authorized by the utility. This may include both metered and unmetered consumption. See "Authorized Consumption" for more information.</p>
Billed metered consumption	<p>All metered consumption which is billed. This includes all groups of customers such as domestic, commercial, industrial or institutional. It does NOT include water sold to neighboring utilities (water exported) which is metered and billed. The metered consumption data can be taken directly from billing records for the water audit period. The accuracy of yearly metered consumption data can be refined by including an adjustment to account for customer meter reading lagtime, however additional analysis is necessary to determine the adjustment value, which may or may not be significant.</p>
Billed unmetered consumption	<p>All billed consumption which is calculated based on estimates or norms but is not metered. This might be a very small component in fully metered systems (for example billing based on estimates for the period a customer meter is out of order) but can be the key consumption component in systems without universal metering. It does NOT include water sold to neighboring utilities (water exported) which is unmetered but billed.</p>
Connection density	<p>=number of connections / length of mains</p>

Item Name		Description
Customer metering inaccuracies	Find	Apparent water losses caused by the collective under-registration of customer water meters. Many customer water meters will wear as large cumulative volumes of water are passed through them over time. This causes the meters to under-register. The auditor has two options for entering data for this component of the audit. The auditor can enter a percentage under-registration (typically an estimated value), this will apply the selected percentage to the two categories of metered consumption to determine the volume of water not recorded due to customer meter inaccuracy. Alternatively, if the auditor has substantial data from meter testing to arrive at their own volumes of such losses, this volume may be entered directly. Note that a value of zero will be accepted but an alert will appear asking if the customer population is unmetered. Since all metered systems have some degree of inaccuracy, then a positive value should be entered. A value of zero in this component is valid only if the water utility does not meter its customer population.
Customer retail unit cost	Find	The Customer Retail Unit Cost represents the charge that customers pay for water service. This unit cost is applied to the components of apparent loss, since these losses represent water reaching customers but not (fully) paid for. It is important to compile these costs per the same unit cost basis as the volume measure included in the water audit. For example, if all water volumes are measured in million gallons, then the unit cost should be dollars per million gallon (\$/mil gal). The software allows the user to select the units that are charged to customers (either \$/1,000 gallons, \$/hundred cubic feet or \$/1,000 litres) and automatically converts these units to the units that appear in the "WATER SUPPLIED" box. Since most water utilities have a rate structure that includes a variety of different costs based upon class of customer, a weighted average of individual costs and number of customer accounts in each class can be calculated to determine a single composite cost that should be entered into this cell. Finally, the weighted average cost should also include additional charges for sewer charges are based upon the volume of potable water consumed.
Infrastructure Leakage Index (ILI)	Find	The ratio of the Current Annual Real Losses (Real Losses) to the Unavoidable Annual Real Losses (UARL). The ILI is a highly effective performance indicator for comparing (benchmarking) the performance of utilities in operational management of real losses.
Length of mains	Find	<p>Length of all pipelines (except service connections) in the system starting from the point of system input metering (for example at the outlet of the treatment plant). It is also recommended to include in this measure the total length of fire hydrant lead pipe. Hydrant lead pipe is the pipe branching from the water main to the fire hydrant. Fire hydrant leads are typically of a sufficiently large size that is more representative of a pipeline than a service connection. The average length of hydrant leads across the entire system can be assumed if not known, and multiplied by the number of fire hydrants in the system, which can also be assumed if not known. This value can then be added to the total pipeline length. Total length of mains can therefore be calculated as:</p> <p>Length of Mains, miles = (total pipeline length, miles) + [((average fire hydrant lead length, ft) x (number of fire hydrants)) / 5,280 ft/mile]</p> <p>or</p> <p>Length of Mains, kilometres = (total pipeline length, kilometres) + [((average fire hydrant lead length, metres) x (number of fire hydrants)) / 1,000 metres/kilometre]</p>
Master meter error adjustment	Find	An estimate or measure of the degree of any inaccuracy that exists in the master meters measuring the Volume from own sources. Please also indicate if this adjustment is because the master meters under-registered (did not capture all the flow) or over-registered (overstated the actual flow). All systems encounter some degree of error in their Master Meter data. Please enter a positive value.
NON-REVENUE WATER	Find	= Apparent Losses + Real Losses + Unbilled Metered + Unbilled Unmetered Water which does not provide any revenue to the utility
Number of active AND inactive service connections	Find	Number of service connections, main to curb stop. Please note that this includes the actual number of distinct piping connections including fire connections whether active or inactive. This may differ substantially from the number of Customers (or number of accounts)
Real Losses	Find	Physical water losses from the pressurized system and the utility's storage tanks, up to the point of customer consumption. In metered systems this is the customer meter, in unmetered situations this is the first point of consumption (stop tap/tap) within the property. The annual volume lost through all types of leaks, breaks and overflows depends on frequencies, flow rates, and average duration of individual leaks, breaks and overflows.
Revenue Water		Water which is charged to customers to provide revenue to the utility.
Systematic data handling errors	Find	Apparent water losses caused by systematic data handling errors in the meter reading and billing system.
Total annual cost of operating the water system	Find	These costs include those for operations, maintenance and any annually incurred costs for long-term upkeep of the system, such as repayment of capital bonds for infrastructure expansion or improvement. Typical costs include employee salaries and benefits, materials, equipment, insurance, fees, administrative costs and all other costs that exist to sustain the drinking water supply. These costs should not include any costs to operate wastewater, biosolids or other systems outside of drinking water.

Item Name		Description												
Unauthorized consumption	Find	<p>Includes water illegally withdrawn from hydrants, illegal connections, bypasses to consumption meter or meter reading equipment tampering. While this component has a direct impact on revenue, in most water utilities the volume is low and it is recommended that the auditor apply a default value of 0.25% of the volume from own sources. If the auditor has well validated data that indicates the volume from unauthorized consumption is substantially higher or lower than that generated by the default value then this value can be entered. However, for most water utilities it is recommended to apply the default value. Note that a value of zero will not be accepted since all water utilities have some volume of unauthorized consumption occurring in their system.</p>												
Unavoidable Annual Real Losses (UARL)	Find	<p>UARL (gallons/day)=(5.41Lm + 0.15Nc + 7.5Lc) xP, or UARL (litres/day)=(18.0Lm + 0.8Nc + 25.0Lc) xP</p> <p>where: Lm = length of mains (miles or kilometres) Nc = number of service connections Lc = total length of customer service lines (miles or km) P = Nc multiplied by the average distance of customer service line, Lp (miles or km) P = Pressure (psi or metres) Click to see Service Connection Diagram</p> <p>The UARL is a theoretical reference value representing the technical low limit of leakage that could be achieved if all of today's best technology could be successfully applied. It is a key variable in the calculation of the Infrastructure Leakage Index (ILI). It is not necessary that water utilities set this level as the target level of leakage, unless water is unusually expensive, scarce or both.</p> <p>NOTE: The UARL calculation has not yet been fully proven as effective for very small, or low pressure water distribution systems. If, <u>in gallons per day:</u> (Lm x 32) + Nc < 3000 or P < 35psi <u>in litres per day:</u> (Lm x 20) + Nc < 3000 or P < 25m then the calculated UARL value may not be valid. The software does not display a value of UARL or ILI if either of these conditions is true.</p>												
Unbilled Authorized Consumption		<p>All consumption that is unbilled, but still authorized by the utility. See "Authorized Consumption" for more information.</p>												
Unbilled metered consumption	Find	<p>Metered Consumption which is for any reason unbilled. This might for example include metered consumption of the utility itself or water provided to institutions free of charge. It does NOT include water sold to neighboring utilities (water exported) which is metered but unbilled.</p>												
Unbilled unmetered consumption	Find	<p>Any kind of Authorized Consumption which is neither billed nor metered. This component typically includes items such as fire fighting, flushing of mains and sewers, street cleaning, frost protection, etc. In most water utilities it is a small component which is very often substantially overestimated. It does NOT include water sold to neighboring utilities (water exported) which is unmetered and unbilled - an unlikely case. This component has many sub-components of water use which are often tedious to identify and quantify. Because of this, and the fact that it is usually a small portion of the water supplied, it is recommended that the auditor apply the default value of 1.25% of the volume from own sources. Select the default percentage to enter this value. If the water utility already has well validated data that gives a value substantially higher or lower than the default volume, then the auditor should enter their own volume. However the default approach is recommended for most water utilities. Note that a value of zero is not permitted, since all water utilities have some volume of water in this component occurring in their system.</p>												
Units and Conversions	Find	<p>The user may develop an audit based on one of three unit selections: 1) Million Gallons (US) 2) Megalitres (Thousand Cubic Metres) 3) Acre-feet Once this selection has been made in the instructions sheet, all calculations are made on the basis of the chosen units. Should the user wish to make additional conversions, a unit converter is provided below (use drop down menus to select units from the yellow unit boxes):</p> <table border="1"> <tr> <td>Enter Units:</td> <td>Convert From...</td> <td>=</td> <td>Converts to....</td> </tr> <tr> <td>1</td> <td>Million Gallons (US)</td> <td>=</td> <td>1 Million Gallons (US)</td> </tr> <tr> <td colspan="4" style="text-align: center;">(conversion factor = 1)</td> </tr> </table>	Enter Units:	Convert From...	=	Converts to....	1	Million Gallons (US)	=	1 Million Gallons (US)	(conversion factor = 1)			
Enter Units:	Convert From...	=	Converts to....											
1	Million Gallons (US)	=	1 Million Gallons (US)											
(conversion factor = 1)														

Item Name		Description
Use of Option Buttons	Find	<p>To use the percent value choose this button</p> <p>To enter a value choose this button and enter the value in the cell to the right</p>  <p>NOTE: For unbilled unmetered consumption and unauthorized consumption, a recommended default value can be applied by selecting the Percent option. The default values are based on fixed percentages of water supplied and are recommended for use in this audit unless the auditor has well validated data for their system. Default values are shown by purple cells, as shown in the example above.</p> <p>If a default value is selected, the user does not need to grade the item; a grading value of 3 is automatically applied (however, this grade will not be displayed).</p>
Variable production cost (applied to Real Losses)	Find	The cost to produce and supply the next unit of water. (E.g., \$/million gallons) This cost is determined by calculating the summed unit costs for ground and surface water treatment and all power used for pumping from the source to the customer. It should also include the unit cost of bulk water purchased as an import if applicable.
Volume from own sources	Find	The volume of treated water input to system from own production facilities
Water exported	Find	Bulk water sold and conveyed out of the water distribution system. Typically this is water sold to a neighboring water utility. Be sure to account for any export meter inaccuracy in reporting this volume
Water imported	Find	Bulk water purchased to become part of the water supplied. Typically this is water purchased from a neighboring water utility or regional water authority. Be sure to account for any import meter inaccuracy in reporting this volume
WATER LOSSES	Find	<p>= apparent losses + real losses</p> <p>The difference between System Input and Authorized Consumption. Water losses can be considered as a total volume for the whole system, or for partial systems such as transmission or distribution systems, or individual zones. Water Losses consist of Real Losses and Apparent Losses.</p>

Water Loss Control Planning Guide

		Water Audit Data Validity Level / Score				
Functional Focus Area	Level I (0-25)	Level II (26-50)	Level III (51-70)	Level IV (71-90)	Level V (91-100)	
Audit Data Collection	Launch auditing and loss control team; address production metering deficiencies	Analyze business process for customer metering and billing functions and water supply operations. Identify data gaps.	Establish/revise policies and procedures for data collection	Refine data collection practices and establish as routine business process	Annual water audit is a reliable gauge of year-to-year water efficiency standing	
Short-term loss control	Research information on leak detection programs. Begin flowcharting analysis of customer billing system	Conduct loss assessment investigations on a sample portion of the system: customer meter testing, leak survey, unauthorized consumption, etc.	Establish ongoing mechanisms for customer meter accuracy testing, active leakage control and infrastructure monitoring	Refine, enhance or expand ongoing programs based upon economic justification	Stay abreast of improvements in metering, meter reading, billing, leakage management and infrastructure rehabilitation	
Long-term loss control		Begin to assess long-term needs requiring large expenditure: customer meter replacement, water main replacement program, new customer billing system or Automatic Meter Reading (AMR) system.	Begin to assemble economic business case for long-term needs based upon improved data becoming available through the water audit process.	Conduct detailed planning, budgeting and launch of comprehensive improvements for metering, billing or infrastructure management	Continue incremental improvements in short-term and long-term loss control interventions	
Target-setting			Establish long-term apparent and real loss reduction goals (+10 year horizon)	Establish mid-range (5 year horizon) apparent and real loss reduction goals	Evaluate and refine loss control goals on a yearly basis	
Benchmarking			Preliminary Comparisons - can begin to rely upon the Infrastructure Leakage Index (ILI) for performance comparisons for real losses (see below table)	Performance Benchmarking - ILI is meaningful in comparing real loss standing	Identify Best Practices/ Best in class - the ILI is very reliable as a real loss performance indicator for best in class service	

For validity scores of 50 or below, the shaded blocks should not be focus areas until better data validity is achieved.

Once data has been entered into the Reporting Worksheet, the performance indicators are automatically calculated. How does a water utility operator know how well his or her system is performing? The AWWA Water Loss Control Committee provided the following table to assist water utilities in gauging an approximate Infrastructure Leakage Index (ILI) that is appropriate for their water system and local conditions. The lower the amount of leakage and real losses that exist in the system, then the lower the ILI value will be.

Note: this table offers an approximate guideline for leakage reduction target-setting. The best means of setting such targets include performing an economic assessment of various loss control methods. However, this table is useful if such an assessment is not possible.

**General Guidelines for Setting a Target ILI
(without doing a full economic analysis of leakage control options)**

Target ILI Range	Financial Considerations	Operational Considerations	Water Resources Considerations
1.0 - 3.0	Water resources are costly to develop or purchase; ability to increase revenues via water rates is greatly limited because of regulation or low ratepayer affordability.	Operating with system leakage above this level would require expansion of existing infrastructure and/or additional water resources to meet the demand.	Available resources are greatly limited and are very difficult and/or environmentally unsound to develop.
>3.0 -5.0	Water resources can be developed or purchased at reasonable expense; periodic water rate increases can be feasibly imposed and are tolerated by the customer population.	Existing water supply infrastructure capability is sufficient to meet long-term demand as long as reasonable leakage management controls are in place.	Water resources are believed to be sufficient to meet long-term needs, but demand management interventions (leakage management, water conservation) are included in the long-term planning.
>5.0 - 8.0	Cost to purchase or obtain/treat water is low, as are rates charged to customers.	Superior reliability, capacity and integrity of the water supply infrastructure make it relatively immune to supply shortages.	Water resources are plentiful, reliable, and easily extracted.
Greater than 8.0	Although operational and financial considerations may allow a long-term ILI greater than 8.0, such a level of leakage is not an effective utilization of water as a resource. Setting a target level greater than 8.0 - other than as an incremental goal to a smaller long-term target - is discouraged.		
Less than 1.0	If the calculated Infrastructure Leakage Index (ILI) value for your system is 1.0 or less, two possibilities exist. a) you are maintaining your leakage at low levels in a class with the top worldwide performers in leakage control. b) A portion of your data may be flawed, causing your losses to be greatly understated. This is likely if you calculate a low ILI value but do not employ extensive leakage control practices in your operations. In such cases it is beneficial to validate the data by performing field measurements to confirm the accuracy of production and customer meters, or to identify any other potential sources of error in the data.		

AWWA WLCC Free Water Audit Software: Acknowledgements

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WAS v4.1

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AWWA Water Audit Software Version 4.1 Developed by the Water Loss Control Committee of the American Water Works Association January 2010

This software is intended to serve as a basic tool to compile a preliminary, or "top-down", water audit. It is recommended that users also refer to the 3rd Edition AWWA M36 Publication, Water Audits and Loss Control Programs, for detailed guidance on compiling a comprehensive, or "bottom-up", water audit using the same water audit methodology.

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- Service Connection Diagrams courtesy of Ronnie McKenzie, WRP Pty Ltd.

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APPENDIX K

COMPLETED URBAN WATER MANAGEMENT PLAN CHECKLIST

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Table I-2 Urban Water Management Plan checklist, organized by subject

No.	UWWMP requirement ^a	Calif. Water Code reference	Additional clarification	UWWMP location
PLAN PREPARATION				
4	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	10620(d)(2)		
6	Notify, at least 60 days prior to the public hearing on the plan required by Section 10642, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Any city or county receiving the notice may be consulted and provide comments.	10621(b)		
7	Provide supporting documentation that the UWWMP or any amendments to, or changes in, have been adopted as described in Section 10640 et seq.	10621(c)		
54	Provide supporting documentation that the urban water management plan has been or will be provided to any city or county within which it provides water, no later than 60 days after the submission of this urban water management plan.	10635(b)		
55	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	10642		
56	Provide supporting documentation that the urban water supplier made the plan available for public inspection and held a public hearing about the plan. For public agencies, the hearing notice is to be provided pursuant to Section 6066 of the Government Code. The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water. Privately-owned water suppliers shall provide an equivalent notice within its service area.	10642		
57	Provide supporting documentation that the plan has been adopted as prepared or modified.	10642		
58	Provide supporting documentation as to how the water supplier plans to implement its plan.	10643		

No.	UWMP requirement ^a	Calif. Water Code reference	Additional clarification	UWMP location
59	Provide supporting documentation that, in addition to submittal to DWR, the urban water supplier has submitted this UWMP to the California State Library and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. This also includes amendments or changes.	10644(a)		
60	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the urban water supplier has or will make the plan available for public review during normal business hours	10645		
SYSTEM DESCRIPTION				
8	Describe the water supplier service area.	10631(a)		
9	Describe the climate and other demographic factors of the service area of the supplier	10631(a)		
10	Indicate the current population of the service area	10631(a)	Provide the most recent population data possible. Use the method described in "Baseline Daily Per Capita Water Use." See Section M.	
11	Provide population projections for 2015, 2020, 2025, and 2030, based on data from State, regional, or local service area population projections.	10631(a)	2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	
12	Describe other demographic factors affecting the supplier's water management planning.	10631(a)		
SYSTEM DEMANDS				
1	Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	10608.20(e)		
2	<i>Wholesalers:</i> Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. <i>Retailers:</i> Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009.	10608.36 10608.26(a)	Retailers and wholesalers have slightly different requirements	

No.	UWMP requirement ^a	Calif. Water Code reference	Additional clarification	UWMP location
3	Report progress in meeting urban water use targets using the standardized form.	10608.40		
25	Quantify past, current, and projected water use, identifying the uses among water use sectors, for the following: (A) single-family residential, (B) multifamily, (C) commercial, (D) industrial, (E) institutional and governmental, (F) landscape, (G) sales to other agencies, (H) saline water intrusion barriers, groundwater recharge, conjunctive use, and (I) agriculture.	10631(e)(1)	Consider 'past' to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years.	
33	Provide documentation that either the retail agency provided the wholesale agency with water use projections for at least 20 years, if the UWMP agency is a retail agency, OR, if a wholesale agency, it provided its urban retail customers with future planned and existing water source available to it from the wholesale agency during the required water-year types	10631(k)	Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030.	
34	Include projected water use for single-family and multifamily residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)		
SYSTEM SUPPLIES				
13	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, and 2030.	10631(b)	The 'existing' water sources should be for the same year as the "current population" in line 10. 2035 and 2040 can also be provided.	
14	Indicate whether groundwater is an existing or planned source of water available to the supplier. If yes, then complete 15 through 21 of the UWMP Checklist. If no, then indicate "not applicable" in lines 15 through 21 under the UWMP location column.	10631(b)	Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other.	
15	Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	10631(b)(1)		
16	Describe the groundwater basin.	10631(b)(2)		
17	Indicate whether the groundwater basin is adjudicated? Include a copy of the court order or decree.	10631(b)(2)		

No.	UWMP requirement ^a	Calif. Water Code reference	Additional clarification	UWMP location
18	Describe the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. If the basin is not adjudicated, indicate "not applicable" in the UWMP location column.	10631(b)(2)		
19	For groundwater basins that are not adjudicated, provide information as to whether DWR has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition. If the basin is adjudicated, indicate "not applicable" in the UWMP location column.	10631(b)(2)		
20	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	10631(b)(3)		
21	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	10631(b)(4)	Provide projections for 2015, 2020, 2025, and 2030.	
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)		
30	Include a detailed description of all water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years, excluding demand management programs addressed in (f)(1). Include specific projects, describe water supply impacts, and provide a timeline for each project.	10631(h)		
31	Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and groundwater.	10631(i)		
44	Provide information on recycled water and its potential for use as a water source in the service area of the urban water supplier. Coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	10633		
45	Describe the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	10633(a)		

No.	UWMWP requirement ^a	Calif. Water Code reference	Additional clarification	UWMWP location
46	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	10633(b)		
47	Describe the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633(c)		
48	Describe and quantify the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633(d)		
49	The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	10633(e)		
50	Describe the actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633(f)		
51	Provide a plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633(g)		
WATER SHORTAGE RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING^b				
5	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	10620(f)		
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage and provide data for (A) an average water year, (B) a single dry water year, and (C) multiple dry water years.	10631(c)(1)		
23	For any water source that may not be available at a consistent level of use - given specific legal, environmental, water quality, or climatic factors - describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631(c)(2)		
35	Provide an urban water shortage contingency analysis that specifies stages of action, including up to a 50-percent water supply reduction, and an outline of specific water supply conditions at each stage	10632(a)		

No.	UWMWP requirement ^a	Calif. Water	
		Code reference	UWMWP location
36	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.	10632(b)	
37	Identify actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.	10632(c)	
38	Identify additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.	10632(d)	
39	Specify consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.	10632(e)	
40	Indicated penalties or charges for excessive use, where applicable.	10632(f)	
41	Provide an analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.	10632(g)	
42	Provide a draft water shortage contingency resolution or ordinance.	10632(h)	
43	Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)	
52	Provide information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments, and the manner in which water quality affects water management strategies and supply reliability	10634	For years 2010, 2015, 2020, 2025, and 2030

No.	UWMMP requirement ^a	Calif. Water Code reference	Additional clarification	UWMMP location
53	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. Base the assessment on the information compiled under Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.	10635(a)		
DEMAND MANAGEMENT MEASURES				
26	Describe how each water demand management measure is being implemented or scheduled for implementation. Use the list provided.	10631(f)(1)	Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules.	
27	Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMMP.	10631(f)(3)		
28	Provide an estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the ability to further reduce demand.	10631(f)(4)		
29	Evaluate each water demand management measure that is not currently being implemented or scheduled for implementation. The evaluation should include economic and non-economic factors, cost-benefit analysis, available funding, and the water suppliers' legal authority to implement the work.	10631(g)	See 10631(g) for additional wording.	
32	Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29.	

^a The UWMMP Requirement descriptions are general summaries of what is provided in the legislation. Urban water suppliers should review the exact legislative wording prior to submitting its UWMMP.

^b The Subject classification is provided for clarification only. It is aligned with the organization presented in Part I of this guidebook. A water supplier is free to address the UWMMP Requirement anywhere with its UWMMP, but is urged to provide clarification to DWR to facilitate review.

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