

*City of Lakewood  
Urban Water Management Plan  
Update  
2005*



*December 13, 2005*

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***City of Lakewood***  
***2000 Urban Water Management Plan***  
***Contact Sheet***

Plan Submittal Date:	December 19, 2005
Name of Person Submitting Plan:	Joseph Esquivel, Mayor
Phone Number:	562.866.9771
Water Supplier Type:	Municipality
Water Sales Type:	Retailer
Utility services provided by water utility:	Potable & Recycled Wastewater
Bureau of Reclamation Contractor:	No
State Water Project Contractor:	No

## 1. Agency Coordination, Public Participation & Adoption of the Urban Water Management Plan

The City's Department of Water Resources prepared the 2005 Urban Water Management Plan during September 2005. The department worked with various other departments (Community Development, City Clerk and Finance Departments) to compile the document. The City of Lakewood also relied on information from several regional agencies: Metropolitan Water District of Southern California (MWD), Central Basin Municipal Water District (CBMWD), Los Angeles County Sanitation Districts, and Water Replenishment District of Southern California (WRD). See Table 1 for a summary of inter-agency and public involvement for the development of Lakewood's plan. Attachment A of this plan includes the CBMWD 2005 Urban Water Management Plan, which outlines the regional water issues and goals to the year 2030. The City's plan does not address the regional aspects of long range water supply planning and forecasting, because the CBMWD included these details in the district's plan.

**Table 1-1 Agency Coordination and Public Involvement**

	<i>Coordination and Public Involvement Actions</i>					
	<i>Helped Write the Plan</i>	<i>Contacted for Assistance</i>	<i>Sent a Copy of the Draft</i>	<i>Provided Comments on Draft</i>	<i>Attended Public Meetings</i>	<i>Sent Notice of Intent to Adopt</i>
Wholesaler		X	X			
Retailers		X				X
Wastewater Agency		X				X
Special Interest Groups						
Citizen Groups						X
General Public			X			X
Public Library			X			
Other: Lakewood's City Clerks' Office, Finance, & Community Development Department	X	X	X			X

The Department of Water Resources staff met with the City Council Water Resources Committee on October 4, 2005 to discuss the content of the plan and obtain feedback. Upon approval by the City Council Water Resources Committee, the department forwarded the draft plan to the Lakewood City Council for consideration. On October 11, 2005 the Lakewood City Council reviewed the draft document and opened the public comment period for the UWMP. Staff informed the general public of the comment period in the following manner:

- Posted the notice regarding the Urban Water Management Plan public comment period and public hearing at two City recreation facilities and the City Clerk's office at Lakewood City Hall. This is the standard public hearing protocol, because the city does not have a newspaper of general circulation.
- Included an article regarding the completion of the draft plan and availability for comment in a city publication called *Talk Around Town* on September 28, 2005. Lakewood sends this newsletter to civic minded residents and business owners in the community.
- Included an article on the City's emagazine on the draft plan on October 12, 2005.

- Placed copies of the draft document at the two county libraries located in town and at the Lakewood's City Clerk's Office on October 12, 2005.
- Placed an electronic version of the document on the City's Internet site, [www.lakewoodcity.org](http://www.lakewoodcity.org) on October 12, 2005.

The Lakewood City Council held a public hearing and adopted Resolution No. 2005-77 approving the amended plan on December 13, 2005. A copy of the resolution precedes this plan.

The following outlines the schedule for public review of the 2005 Urban Water Management Plan.

**Schedule for Adoption of the  
Lakewood 2005 Urban Water Management Plan**

<b>Action</b>	<b>Time Line</b>
Informed Outside Agencies Regarding the Preparation of the UWMP	September 6, 2005
Notification to Community Leaders of Public Comment Period in <i>Talk Around Town</i>	October, 2005
Presentation of the UWMP to the City Council Water Resources Committee	October 4 2005
City Council Opens Public Comment Period Aired on Cable Television	October 11, 2005
Notification to public via the internet/emagazine	October 12, 2005
UWMP Available for Public Comment in the City Clerk's Office, Mayfair Park, Nye Library and <a href="http://www.lakewoodcity.org">www.lakewoodcity.org</a>	October 12, 2005
Deadline for Written Comments	December 13, 2005
City Council Holds Public Hearing to Accept Public Comments and Adopts UWMP	December 13, 2005
Submittal to the State of California Department of Water Resources	December 19, 2005

## 2. City of Lakewood Snapshot

The City of Lakewood was incorporated in 1954 as a general law city. Located 20 miles southeast of the city of Los Angeles, Lakewood borders the cities of Long Beach, Hawaiian Gardens, Bellflower and Cerritos, and Orange County.

### Population Trends

The Southern California Area Governments (SCAG) projects that Lakewood's population has increased slightly, and will remain stable during the next 25-30 years. Table 2-1 represents SCAG's population trends and projected growth for the City through 2030. Approximately two-thirds of this population is served by the City's water utility.

**Table 2-1** **Population Projections**

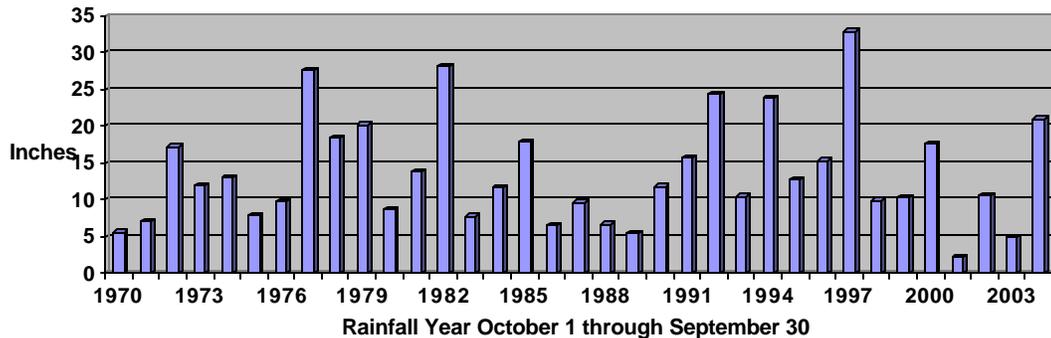
	1990	1995	2000	2005	2010	2015	2020	2025	2030
Population	73,557	77,301	80,586	83,674 <sup>1</sup>	80,093	80,301	80,514	80,725	80,935

<sup>1</sup> 2005 Population estimate from the California Department of Finance

### Climate

Lakewood lies close enough to the ocean to benefit from sea breezes and marine cloud layer. These climatological traits keep the evaporation level lower than other areas in southern California, which reduces water use for landscape irrigation. The temperature averages 80° in the summer months and 68° in the winter months. Rainfall averages 14 inches annually. Rainfall for the 2004-2005 water year reached 21.04 inches. The Figure 2-2 indicates the historical rainfall for the city<sup>1</sup>, while Table 2-1 indicates the average monthly evapotranspiration levels, rainfall and high/low temperatures in the Long Beach/Lakewood area.

**Figure 2-1** **Lakewood's Annual Rainfall 1970 to 2005**



<sup>1</sup> Data gathered from the Los Angeles County Department of Public Works Climatological Record Montana Station 225

**Table 2-2 Lakewood's Average Monthly ETo, Rainfall and Temperature**

	Monthly Average ETo <sup>2</sup>	Monthly Average Rainfall (Inches)	Monthly Average Temperature (Fahrenheit) <sup>3</sup>	
			Low	High
January	1.65	2.96	45.5	66.9
February	2.15	3.54	47.3	67.3
March	3.59	2.37	49.7	68.4
April	4.77	0.64	52.3	71.8
May	5.12	0.27	56.7	73.6
June	5.71	0.09	60.2	77.1
July	5.93	0.04	63.6	82.4
August	5.91	0.11	64.9	84.0
September	4.39	0.25	62.9	82.4
October	3.22	0.58	58.0	78.1
November	2.18	1.05	50.3	72.0
December	1.68	1.83	45.2	67.2
Annual	46.30	13.73	54.7	74.3

***Lakewood Land Use***

Lakewood encompasses 9.5 square miles or 6,108.32 acres. It lies approximately 50 feet above sea level. The terrain is generally flat and regionally slopes to the south. Incorporated in 1954, most of Lakewood's development occurred within a 20-year period. It consists largely of single-family dwellings, and the vast majority of the residential parcels are 50 feet wide and 100 feet deep. The community's housing density is estimated at 2,874.7 housing units per square mile or 4.47 houses per acre.

The focal point for commercial activity is the 164-acre Lakewood Center. The mall houses five major retail anchors and over 500 smaller retail/commercial businesses. The city's forefathers also built small commercial centers at most major intersections for easy access by foot to grocery stores and other necessities. The city manufacturing and industrial base is small due to the residential nature of the community. The majority of the manufacturing/industrial businesses are in the southwest corner of the community. Figure 2-2 illustrates the city's zoning designations, and Table 2-3 indicates the city's current distribution of land use.

<sup>2</sup> ETo from CIMIS ([www.cimis.water.ca.gov](http://www.cimis.water.ca.gov))

<sup>3</sup> Monthly Average High and Low Temperatures from Western Regional Climate Center April 1, 1958 to December 31, 2004 ([www.wrcc.dri.edu](http://www.wrcc.dri.edu))

Figure 2-2

Lakewood Zoning Designations

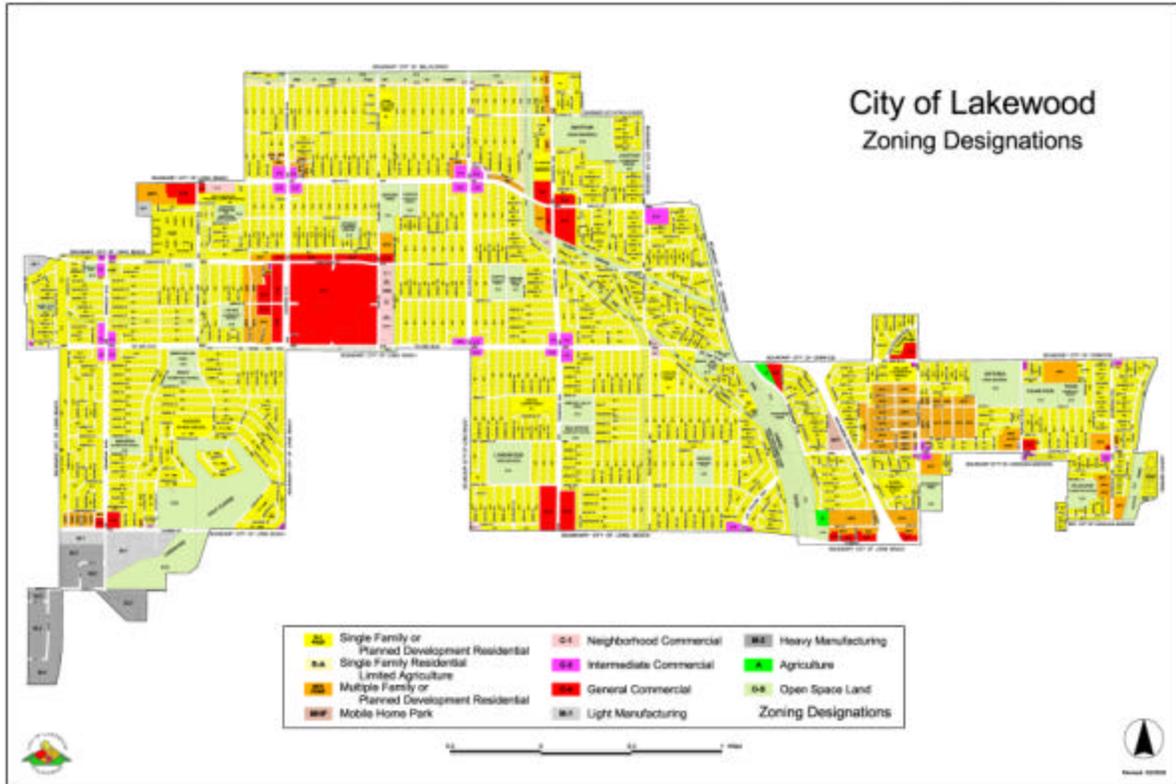


Table 2-3

City of Lakewood Land Use

Type of Land Use	# of Acres	% of Total Acres
Residential	3,117.72	51.01%
Commercial	372.67	6.10%
Manufacturing	92.83	1.52%
Public/Quasi Public	818.42	13.39%
Agriculture	44.23	0.73%
Electric Right of Way	79.11	1.29%
Flood Control	82.7	1.35%
Streets	1,471.82	24.08%
Vacant	32.33	0.53%
<b>Total</b>	<b>6,111.83</b>	<b>100.00%</b>

Lakewood General Plan, Technical Background Report (revised to include recent housing developments)

Redevelopment projects in the utility’s service area within the last five years targeted expansion of the Lakewood Center Mall, the development of a commercial area at Carson Street and Paramount Boulevard, and construction at several small commercial parcels. Several residential projects have also been built since the 2000 Urban Water Management Plan Update. These projects are higher density than the typical Lakewood home, landscaped common areas and homes with small patio yards. The City of Lakewood’s Housing Element of the General Plan indicates a potential increase in housing stock by 971 housing units in the next thirty years. Most of this increase is expected to occur outside the water utility’s service area. Table 2-4 illustrates the distribution of new housing stock in the community.

**Table 2-4**

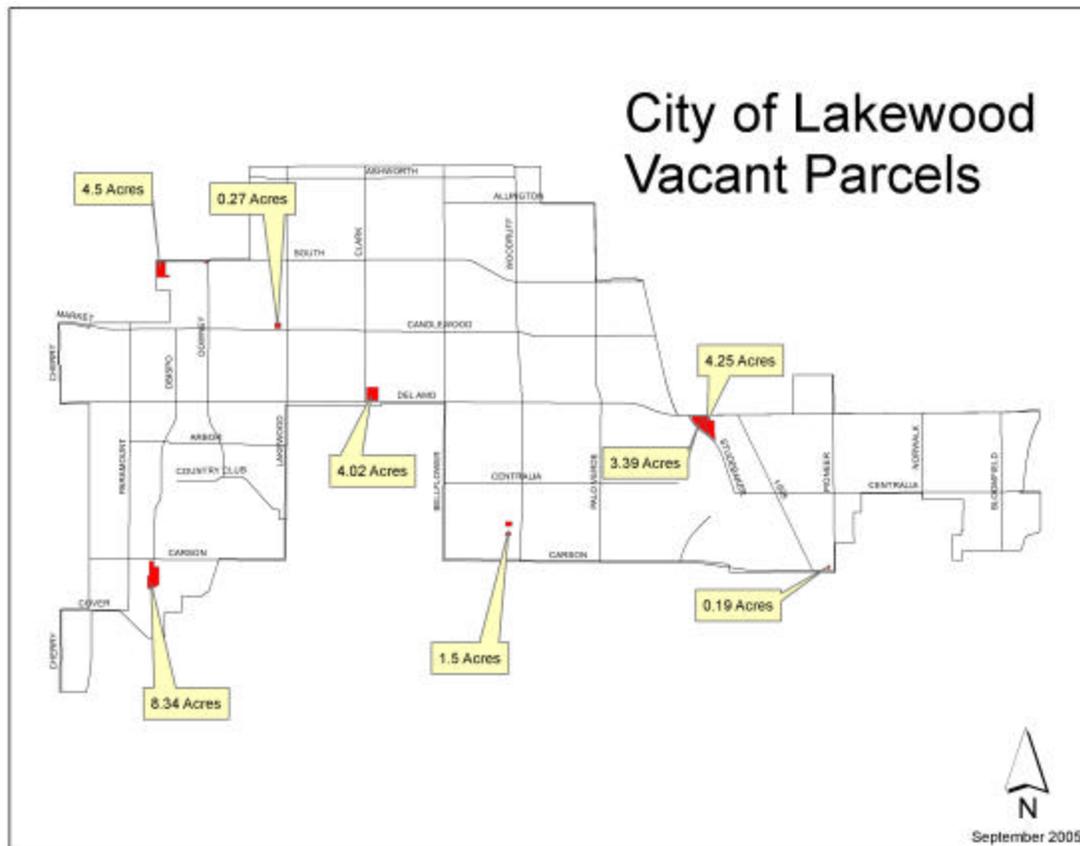
**Potential Additional Housing Stock**

<i>Zoning Designation</i>	<i>Maximum Density (Units/Acre)</i>	<i>Existing Units</i>	<i>New Units on Vacant Land</i>	<i>Net Recycled</i>	<i>Increasing Density</i>	<i>Potential Net Gain of Units</i>
Single Family Residential (SFR)	0.1-8.7	21,579	15	0	0	15
Planned Development SFR	.01-27	496	0	0	0	0
Multifamily Residential (MFR)	8.8-27	4,913	297	474	185	956
Planned Development MFR	8.8-27	108	0	0	0	0
Mobile Home Park	--	85	0	0	0	0
<b>Total</b>		<b>27,181</b>	<b>312</b>	<b>474</b>	<b>185</b>	<b>971</b>

According to the Lakewood General Plan 32.33 acres of land remains vacant. Of this amount 21 acres is located in the water utility’s service area. Approximately 5 acres of this land is currently under redevelopment. The Lakewood Community Development Department estimates that a 4-acre parcel will be developed in the next five years. This project is expected to replace an existing government/quasi-government facility. The remaining 12 acres is expected to remain vacant for ten to 15 years. Any additional development requires the redevelopment of existing sites. Figure 2-3 locates the vacant parcels in Lakewood.

**Figure 2-3**

**Vacant Parcels in Lakewood**



Map does not include parcels currently under construction.

**Lakewood Water Purveyors**

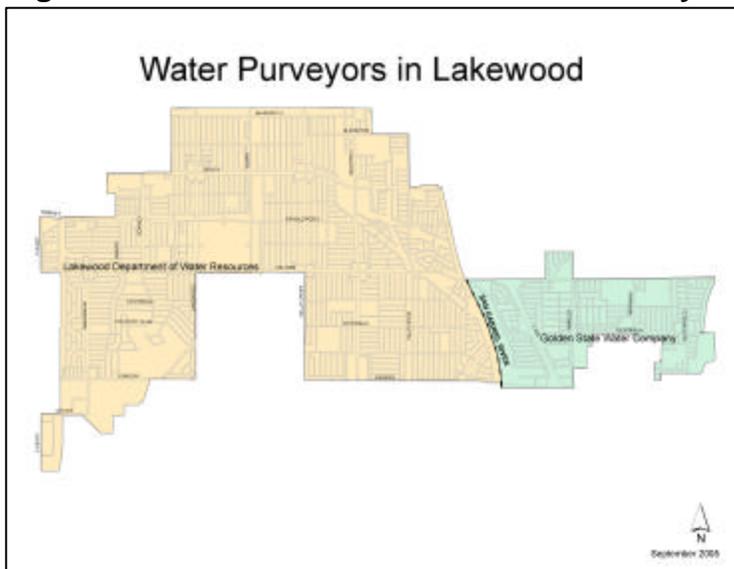
Currently two water purveyors serve Lakewood. The City of Lakewood supplies water to residents and businesses west of the San Gabriel River. Golden State Water Company,

formerly Southern California Water Company, serves customers in the area east of the river. Golden State Water Company is a privately held company governed by the California Public Utilities Commission, which serves approximately 3,673 accounts in Lakewood.

In 2001 the City expanded its service area by purchasing the portion of the Peerless Water Company, which served about 105 Lakewood residents at the northern city boundary in an area adjacent to the city of Bellflower.

Figure 2-4 distinguishes the service areas of the City of Lakewood Department of Water Resources and Golden State Water Company.

**Figure 2-4 Lakewood Water Purveyors**



The City of Lakewood Department of Water Resources operates as a municipal water utility, which relies solely on water revenues from potable and recycled water sales, and other water related funding sources to finance operational and capital expenditures. The City maintains approximately 20,589 service connections, which serves a population of approximately 66,000. Table 2-4 breaks down the service connections by customer type.

**Table 2-4 Water Connections by Customer Account Type**

<i>Type of Account</i>	<i># of Accounts</i>	<i>% of Total</i>
Residential Single Family	19,095	93%
Residential Multiple Family	216	1%
Commercial/Industrial/Government/Quasi Government	1,066	5%
Landscape Irrigation (Includes Recycled Water Accounts)	212	1%
<b>TOTAL</b>	<b>20,589</b>	<b>100%</b>

The predominantly residential character of Lakewood coupled with the community’s retail base that exists in the community creates a stable environment for water demand. The Department of Water Resources anticipates little fluctuation in the type of water account and minimal changes in water demand.

### 3. Water Sources

The City of Lakewood maintains four sources of water supply to meet customer demand: groundwater, imported surface water, recycled wastewater, and emergency interconnections with other water retailers.

The City projects that the groundwater rights and allowable carry over currently owned by the utility will meet water demand during normal water supply periods for the 30-year planning period. Table 3-1 indicates the past, present and projected water production for the City of Lakewood. As indicated, the groundwater and recycled supplies are expected to handle all projected use through 2030. The projections do assume the addition of recycled water customers, which would offset some increase in potable demand.

**Table 3-1 Current and Projected Water Production (Acre Feet)**

<i>Water Supply Sources</i>	<i>Fiscal Year</i>									
	1990	1995	2000	2005	2010	2015	2020	2025	2030	
Purchased from Wholesaler: CBMWD	592	0	0	0	0	0	0	0	0	0
Supplier produced groundwater	8,943	8,703	9,167	8,869	8,925	8,970	9,015	9,060	9,105	
Groundwater Storage Program Water Extractions							1,200			
Recycled Water	344	406	477	352	450	450	550	550	550	
<b>TOTAL</b>	<b>9,279</b>	<b>9,109</b>	<b>9,644</b>	<b>9,221</b>	<b>9,375</b>	<b>9,420</b>	<b>10,765</b>	<b>9,610</b>	<b>9,655</b>	

Production estimates are based on an increase of ½ percent every five years. The projected increase in recycled water use during 2020 is based on the proposed expansion of the recycled distribution system after year 2015. Table 3-1 estimates projected water production; based solely on water rights allocation, water storage program extraction obligations and the recycled water contract with the City of Cerritos.

#### **Groundwater**

The City currently relies on groundwater for 100 percent of its potable water supply. The installation of the recycled water distribution system in 1989 freed the City from dependence on supplementary import water from Metropolitan Water District of Southern California purchased through the Central Basin Municipal Water District.

The City draws its supply from the Central Groundwater Basin. This source annually supplies approximately 200,000 acre feet of potable water to the area south of the Whittier Narrows to the Pacific Ocean and from the Orange County line to the city of Compton. The Central Groundwater Basin became an adjudicated basin in 1966. The Los Angeles County Superior Court oversees the adjudication and the California Department of Water Resources serves as the court appointed watermaster. The Court established groundwater pumping rights at the time of adjudication, and the total allowable extractions from the basin in a given year are 217,367 acre feet. Groundwater producers may also carry over up to 20 percent of the allowable pumping rights to the next fiscal year.

Maintenance of the basin and the groundwater pumping allocation requires recharging; accomplished through facilities operated by the Los Angeles County Department of Public Works. The groundwater basin is replenished with three sources of water: import supplies from Metropolitan Water District of Southern California (MWD), local supplies from storm flows and allocations from the Upper San Gabriel Groundwater Basin, and recycled wastewater from the Los Angeles County Sanitation Districts. The Water Replenishment District of Southern California (WRD) purchases import supplies and recycled wastewater for groundwater replenishment. The District also purchases import supplies to maintain seawater intrusion barriers.

Table 3-2 indicates the historical recharge in the Central Groundwater Basin. The WRD optimizes the use of local and recycled water supplies to replenish the basin. The agency has also taken advantage of surplus water offered at reduced rates from MWD to increase the reliability of this essential supply. Until recently, the WRD offered groundwater producers a program that traded reduced import water supply costs in exchange for setting aside the annual groundwater pumping rights to remain in the ground. The bottom row of Table 3-1 provides an historical prospective of groundwater recharge that occurred through the in lieu program.

**Table 3-2 Historical Groundwater Recharge in the Central Groundwater Basin**

<i>Type of Supply</i>	<i>1990</i>	<i>1995</i>	<i>2000</i>	<i>2004</i>
Import Water	56,611	21,838	45,037	20,369
Recycled Wastewater	47,054	23,293	34,708	35,819
Local Runoff	2,098	107,673	39,767	36,128
<b>TOTAL</b>	<b>105,763</b>	<b>152,804</b>	<b>119,512</b>	<b>92,316</b>
Groundwater Recharge Through In Lieu Program	16,858	32,903	18,799	0

Information supplied by the annual report of the Watermaster Service in the Central Basin, Los Angeles County

The City of Lakewood owns 9,423 acre feet of groundwater rights in the Central Groundwater Basin. Since 2000, the City has increased its groundwater pumping rights by purchasing 60 acre feet of additional rights. This purchase increases the reliability of the utility to meet future increases in demand. Table 3-3 contains the annual groundwater production for the City. The thirteen groundwater production wells extract enough water to meet average and peak demand. Attachment B locates all of the City's water supplies. The recycled water supply makes up the remainder of the City's total water supply.

**Table 3-3 Annual Groundwater Production (Acre Feet)**

<i>Groundwater Basin</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2010</i>	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Central Groundwater Basin	9,166	8,758	9,239	9,024	9,491	8,869	8,925	8,970	9,015	9,060	9,105
% of Total Water Supply	95%	96%	95%	96%	96%	96%	95%	95%	84%	94%	94%

Lakewood produces an average of 8,895 acre feet of potable water annually. Increase in groundwater extractions during Fiscal Years 2002 through 2004 are in part due to the lack of rainfall during the winter months.

**Import Water Supplies**

Prior to 1991, the department supplemented the potable water supply with imported water from Metropolitan Water District of Southern California (MWD). The City purchased this supply through two Central Basin Municipal Water District (CBMWD) connections. Attachment B locates the two connections to MWD. The capacity of each connection is 15 cubic feet per second. This supply is currently the most expensive of available sources of supply. CBMWD charges water purveyors \$489 an acre foot for treated uninterrupted water.

Any need to return to purchasing MWD supplies would require significant operational changes. The City can, however, purchase limited additional supplies from the City of Cerritos or Golden State Water Company through two emergency inter-connections.

**Reliability of Supply**

Lakewood averages 14 inches of rain annually. Fiscal Year 1995-96 will serve as the normal water year. Lakewood received less than 13 inches of rainfall during this period, according to the Los Angeles County Department of Public Works Climatological Record Montana Station 225. The driest year since 1970 was FY2001-02 with 2.27 inches of rainfall. FY2001-02 through FY2003-04 saw the lowest amount of rainfall in a multiple year period, totaling 17.75 inches. However, this large fluctuation in rainfall over multiple years did not reduce the reliability of the water supply. As Table 3-4 indicates, the City of Lakewood’s water supply remains constant through multiple dry years due to the adjudication of the groundwater basin and the City’s contract with the City of Cerritos for recycled wastewater.

**Table 3-4 Water Supply Reliability**

<b>Supplies</b>	<b>Normal Water Year FY1995-96</b>	<b>Single Dry Water Year FY2001-02</b>	<b>Multiple Dry Water Years</b>		
			<b>Year 1 FY2001-02</b>	<b>Year 2 FY2002-03</b>	<b>Year 3 FY2003-04</b>
Groundwater	9,423	9,423	9,423	9,423	9,423
Recycled Water	450	450	450	450	450
<b>TOTAL SUPPLY</b>	<b>9,873</b>	<b>9,873</b>	<b>9,873</b>	<b>9,873</b>	<b>9,873</b>

The City expects the availability of groundwater supplies to remain constant over the next 30 years in this managed basin. The supply estimates are based on the annual allowable pumping rights and carryover from the previous year. Increases in demand above the City’s allowable extraction rights would require the lease or purchase of groundwater rights from other groundwater producers. The actual demand will vary based on weather conditions and additional uses for recycled wastewater, gray water and installation of water conserving devices.

However, prolonged drought, more than multiple dry years, could result in a water supply shortfall. The City’s ability to maintain reliable water supplies hinges on the maintenance of the groundwater basin. The Los Angeles County Department of Public Works operates two spreading grounds in the Central Basin: Rio Hondo and San Gabriel River. The ability to “stockpile” water during wet years increases the reliability in dry years.

A prolonged drought without recharge of the groundwater table could eventually lower the groundwater table and impact the ability to pump water from the basin. A significant drop in the groundwater table could mean the loss in groundwater production wells and additional seawater intrusion into the basin. The City estimates that a 50 percent loss in the groundwater supply would have to occur to affect the City's water production. If the drought lasted several more years and no groundwater recharge occurred for at least two years, the City could lose two or three production facilities; that is the groundwater table would drop to a level that the water bearing strata would lie below the well perforations. In such situations the Watermaster could reduce the amount of allowed pumping allocation by local groundwater producers.

The Department of Water Resources can manage localized water supply shortages in several ways—leasing groundwater rights from other basin producers or purchasing water through Cerritos or Golden State Water Company emergency interconnections. These alternatives increase the cost of water production, but serve to meet the “short term gap” between demand and supply. For example, any water exchanged through the emergency interconnection is charged at the current rate for imported water from MWD. Though there are no additional costs associated with this water supply, MWD supplies cost approximately \$329 more than groundwater supplies.

Groundwater leasing remains a viable source of supply as long as the City's production facilities operate at existing levels. The cost of leasing groundwater rights fluctuates from year to year. The current rate of \$140 an acre foot is considerably lower than the previous year due to the heavy rainfall during the winter of 2004-2005.

The long-term solution to water supply reliability lies in the purchase of additional groundwater pumping rights. Water rights are considered property rights and do not often become available. The City allocates funds annually for the purchase or lease of groundwater extraction rights.

### ***Inconsistent Water Sources***

The City does not rely on any inconsistent sources of potable water supply.

### ***Transfer or Exchange Opportunities***

The City of Lakewood currently maintains three emergency water supply interconnections with adjacent water purveyors, the Cities of Cerritos and Long Beach, and Golden State Water Company. The existing Long Beach connection operates manually while the Cerritos and Golden State Water Company connections operate with an automatic bi-directional flow valve.

These connections have the potential for transfer or exchange of water supply during water shortages associated with water quality problems, disaster, drought and system maintenance. Each connection can provide up to 5,000 gallons per minute. All water that passes through any emergency interconnection is charged at the current rate charged by Metropolitan Water District of Southern California for non-interruptible water. Attachment B locates the emergency interconnections.

In June 2005 the Cities of Lakewood and Long Beach entered into a 25-year agreement for the storage of import water supplies through an aquifer storage and recovery well (ASR). The project funded by Metropolitan Water District of Southern California through the State of California Department of Water Resources Proposition 13 funds provides for the construction of an ASR well in Lakewood. The well, which is expected to produce approximately 3,000 gallons per minute, will also be capable of injecting import water supplies into the groundwater basin. The project also requires the installation of a pipeline from the new well to the City of Long Beach Water Department's well field.

Scheduled for completion in 2008, the ASR well will operate as an extraction well to meet the City of Lakewood's potable water demand approximately 70 percent of the time. The remaining 30 percent of the time the ASR well will be used for import water supply storage and eventual extraction for use by Long Beach. Metropolitan could store up to 3,600 acre feet of surplus water, 900 acre feet annually, and extract up to 1,200 acre feet of the stored water in any given year. Since the Central Groundwater Basin is adjudicated, the project must operate within the provisions of the court judgment. The project requires that Lakewood set aside up to 3,600 acre feet of its groundwater rights for the storage and extraction program. This water will be extracted using Lakewood's 20 percent carry over water rights and 20 percent emergency carry over water rights.

#### 4. Water Use

The City retails both potable and recycled wastewater to the community. The cost of water varies based on the type of water consumed. All water delivered to the utility's customers is metered. The customer pays a basic charge for service based on the meter size and a quantity charge based on water consumption. Single family residential units receive 7 hundred cubic feet (hcf) with the basic charge for service. The average Lakewood residential customer consumes 36 hcf during a bi-monthly billing period.

##### **Potable Water Use**

The prolonged drought that struck the state between 1987-1991 required the implementation of water conservation measures by the Lakewood City Council. The community reduced consumption 30 percent during this crisis. The initiation of the recycled water distribution system played a key role in reducing potable water demand. The water conservation rate structure, adopted during this drought, remains at the "Voluntary" enforcement level today; a residential water customer must consume over 108 hcf of water during a billing period before paying penalties.

The Department of Water Resources anticipates a gradual rise in water use, which comes with the passage of time and an increase in the economic vitality in the region. The water use is expected to stay within the City's allowable pumping and carry over rights through 2030. Table 4-1 provides the historical metered water use by customer class and the projected water use through 2030.

The City's production facilities can produce up to 27 million gallons per day to meet peak demand. However, the City's water facilities can only maintain this volume of production for 24 hours. Continued need for maximum production would not allow for adequate recovery time. In these instances the total production capacity would drop to 15 million gallons per day. The average daily demand is approximately 7.19 million gallons per day and the peak day demand during Fiscal Year 2004-05 was 9.95 million gallons.

**Table 4-1 Past, Current and Projected Potable Water Use (Metered, Acre Feet)**

<i>Water User</i>	<i>1990</i>	<i>1995</i>	<i>2000</i>	<i>2005</i>	<i>2010</i>	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Single Family Residential	8,214	7,697	8,108	7,845	7,894	7,934	7,974	8,014	8,053
Multi-family Residential	92	86	90	88	88	88	89	89	90
Commercial/Industrial/ Government/Quasi- Government/Landscape	748	701	738	714	718	722	726	729	733
<b>TOTAL</b>	<b>9,054</b>	<b>8,484</b>	<b>8,936</b>	<b>8,647</b>	<b>8,700</b>	<b>8,744</b>	<b>8,789</b>	<b>8,832</b>	<b>8,876</b>

A small portion of the total water production is unmetered. This water is used for fire fighting; street sweeping and lost water due to leaks in the distribution system. Approximately 0.4 percent of the City's total water production is used to maintain the water quality in the system through the annual flushing and valve exercising program. The system's water loss remains low, approximately 2 percent of the annual water production. Table 4-2 provides data on unmetered water use.

**Table 4-2 Additional Water Uses (Unmetered, Acre Feet)**

<i>Water Use</i>	<i>1990</i>	<i>1995</i>	<i>2000</i>	<i>2005</i>	<i>2010</i>	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Mainline Flushing Program	37	35	37	35	36	36	36	36	36
Street Sweeping	1	1	1	1	1	1	1	1	1
Unaccounted for Water	195	183	192	186	187	188	189	190	191
<b>TOTAL</b>	<b>233</b>	<b>219</b>	<b>230</b>	<b>222</b>	<b>224</b>	<b>225</b>	<b>226</b>	<b>227</b>	<b>228</b>

Units of Measure: acre feet

The community's residential make-up and low undeveloped/underdeveloped land that exists in the City's service area makes it reasonable to assume that the customer base and average use will remain relatively stable over the next 30 years. The only nominal increase is expected in commercial/industrial metered service connections as the City works to improve economic vitality. Table 4-3 below estimates the projected customer base growth.

**Table 4-3 Number of Metered Connections by Customer Type**

<i>Customer Type</i>	<i>1990</i>	<i>1995</i>	<i>2000</i>	<i>2005</i>	<i>2010</i>	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Single Family Residential	18,185	18,689	18,783	19,095	19,100	19,100	19,100	19,100	19,100
Multi-Family Residential	200	203	204	216	216	216	216	216	216
Commercial/Industrial/Government/Quasi Government	1,505	1,598	1,031	1,066	1070	1,075	1,075	1,075	1,075
Landscape/Recreational	70	70	70	70	70	70	70	70	70
Agriculture	24	24	24	21	21	21	21	21	21
<b>TOTAL</b>	<b>19,984</b>	<b>20,584</b>	<b>20,112</b>	<b>20,468</b>	<b>20,477</b>	<b>20,482</b>	<b>20,482</b>	<b>20,482</b>	<b>20,482</b>

### ***Residential Demand***

The community's housing stock within the utility's service area has grown by 312 units since the 2000 Urban Water Management Plan Update. The increase is partially due to the purchase of the 105 Peerless Water Company accounts located in Lakewood in spring 2001. The City plans no major housing unit construction within the Department of Water Resources' service area during this planning period. Most of the changes regarding housing stock are occurring in the Golden States Water Company's service area.

### ***Commercial Demand***

During the past five years the regional shopping mall, Lakewood Center, has undergone some major changes. The renovation project included the relocation of a department store and the construction of a new department store, discount store and food court. Construction also included several restaurants located on the perimeter of the mall.

These projects and future projects must meet the requirements of the City's Water Conservation in Landscaping Ordinance No. 93-11 of the Lakewood Municipal Code, Attachment C. The ordinance requires contractors to complete a water use audit, which includes the designation of low water use plants and water conserving sprinklers. The contractor must also install dual plumbing for the irrigation. In addition to the provisions in the Water Conservation in Landscape Ordinance No. 93-11, the City's Water Conservation Ordinance 91-3 of the Lakewood Municipal Code requires connection to the

recycled water distribution system if the project lies adjacent to the system. See Attachment C for the Water Conservation in Landscaping Ordinance No. 93-11 and Attachment D for the Water Conservation Ordinance 91-3 and 91-13.

**Government Demand**

The Department of Water Resources expects potable water demand to remain constant until expansion of the City’s recycled water system. Potable water consumption for parks and greenbelts maintained by the City should drop slightly upon completion of the expansion of the recycled water system. This includes connection of the remaining City facilities and seven additional school sites to the expanded distribution system.

**Wastewater Disposal**

The Los Angeles County Sanitation Districts maintain wastewater treatment plants in the region. The Long Beach Water Reclamation Plant (WRP), 7400 E. Willow St., Long Beach, processes wastewater generated from Lakewood. The WRP’s was designed to process 25 million gallons of wastewater a day. The average flow is currently 19 million gallons a day. Lakewood generates approximately 7.1 million gallons a day of wastewater.

**Water Storage Program**

The conjunctive use project requires the City to store surplus import water supplies from Metropolitan Water District of Southern California, and make the stored supply available to the City of Long Beach during periods of water supply shortages. Extractions must meet the provisions in the Central Basin Judgment. The agreement between Long Beach and Lakewood limits the annual extraction to no more than the amount of water stored through the program or 1,200 acre feet in any given year. Lakewood does not anticipate using carryover water rights to meet normal demand, and plans to use carry over groundwater rights to meet this water supply obligation.

Supplies for this program must be stored prior to extraction. The anticipated timeline for well construction and program implementation indicate that the ASR well should be operational in 2008. Allowing a minimum of four years to store surplus import water, the earliest the maximum amount of stored water that can be extracted would be 2012 through 2014. This assumes the maximum amount of water is stored and subsequently extracted in consecutive years. Table 4-4 indicates the years the extraction of stored water occurs if the storage and extraction occurs in consecutive years.

**Table 4-4 Water Storage Extractions**

<i>Water User</i>	1990	1995	2000	2005	2010	2015	2020	2025	2030
Long Beach/Lakewood Water Storage Program Extractions							1,200 <sup>1</sup>		
<b>TOTAL</b>	0	0	0	0	0	0	1,200	0	0

<sup>1</sup>Maximum Annual Extraction=1,200 acre feet in 2019 through 2021.

Table 4-5 indicates the total historical and projected water use by type from 1990 through 2030. The total water use estimates do not exceed the City’s groundwater extraction rights or the contractual agreement with the City of Cerritos for recycled wastewater.

**Table 4-5****Total Water Use in Acre Feet**

<i>Water User</i>	<i>1990</i>	<i>1995</i>	<i>2000</i>	<i>2005</i>	<i>2010</i>	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Metered	9,054	8,484	8,936	8,647	8,701	8,745	8,788	8,832	8,876
Unmetered	233	219	230	222	224	225	226	227	228
Recycled	359	400	477	352	450	450	550	550	550
Transfers							1,200		
<b>TOTAL</b>	<b>9,646</b>	<b>9,103</b>	<b>9,643</b>	<b>9,221</b>	<b>9,375</b>	<b>9,420</b>	<b>10,764</b>	<b>9,609</b>	<b>9,654</b>

## **5. Implemented Demand Management Measures**

The State of California Department of Water Resources in conjunction with the State Water Coalition developed the Memorandum of Understanding Regarding Urban Water Conservation (MOU) in California. These conservation measures are commonly referred to as Best Management Practices (BMP). The purpose of the document is to gain cooperation among water agencies and the environmental community to increase reliability of the state's water supply, establish state-wide standards for water conservation, eliminate high water conservation quotas and promote uniformity in the implementation of water conservation measures. The State Department of Water Resources encourages water purveyor participation in the MOU. Lakewood is not a signatory of the MOU.

### **Water Survey Programs for Single-Family and Multifamily Residential Customers**

The department offers water audit services to all water customers. Staff members work with the water customers to check for leaks, check water using fixtures, irrigation and landscape. The customer is also given instruction on how to read the water meter and water utility bill. Staff makes written recommendations based on the customer's water use practices. Attachment E is the City of Lakewood Residential Water Audit Checklist. Requests for this type of service occurred frequently during the drought in the early 1990's. During this period of time the City promoted the service to meet conservation needs. Since 1990 the Department of Water Resources has conducted 85 water audits, but has not calculated the water savings associated with the surveys. The Department of Water Resources advertises this service in the annual water quality report.

In addition to the formal water audit, staff provides additional customer service that promotes water conservation. The water utility personnel use a handheld meter reading device to gather consumption data. Water meter reads that exceed the customers' "normal" range of use trigger an alert to the meter reader. Staff follows up on high reads with an investigation. The City rereads the meter and contacts the customer to inform them of a possible leak. The department staff assists customers in finding the leak, so that a qualified plumber can make appropriate repairs. The department does not track the volume of customer assistance for high water usage. Table 5-1 indicates the number of times the department has assisted water customers with the locating of water leaks.

**Table 5-1 Water Customer Leak Detection Service**

	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
# Customer Contacts	282	257	236	237	247
Expenditures	No additional associated costs.				
Water Savings	Data Not Calculated				

### **Metering with Commodity Rates for All New Connections & Retrofit Existing Connections**

All existing and new Lakewood service connections are metered. In 2002 the City completed a five-year meter replacement program to insure accuracy in billing of consumption. The next meter rotation program will not be implemented until 2018. The meters listed in Table 5-2 include replacement meters due to loss of accuracy, and meter and service upgrades.

Meters are read bi-monthly. Each user is charged a basic charge for service and a quantitative charge for water used. Resolution 91-68, Attachment F, outlines the rate structure for Lakewood water customers. Residential users receive seven units of water with the basic charge of service; multifamily and commercial customers do not. Each customer category (restaurant, large commercial, fast food, schools, etc.) is assigned a range that is considered average consumption for that customer class. Customers that consume beyond that average range are charged penalties during a declared drought. (The City Council maintains the water rate resolution in a Voluntary Drought Stage.) For example, a residential customer consuming over 108 units in the voluntary drought phase is charged 1.25 times the normal quantitative rate.

**Table 5-2 Metering with Commodity Rates**

	2001	2002	2003	2004	2005
# Unmetered Connections	0	0	0	0	0
# Replacement Meters Installed	900	74	34	96	44
# of Accounts without Commodity Rates	0	0	0	0	0
Expenditures	\$84,051	\$13,490	\$9,509	\$5,533	\$5,650
Water Savings	Data Not Collected				

**Large Landscape Water Audits and Incentives**

The largest landscape areas in the community are city-owned. Eight of these sites use recycled water for landscape irrigation. The Recreation and Community Services staff continually monitors the landscape irrigation at all City facilities. The City Council adopted the Water Conservation in Landscaping Ordinance No. 93-11 in 1993, Attachment C. The ordinance established standards and procedures for the design, installation, and management of water conserving landscapes in order to utilize available plant, water, and land resources to avoid excessive landscape water demands while ensuring high quality landscape design. These requirements are applicable to new and rehabilitated landscaping for industrial, commercial, office and institutional developments; parks and other public recreational areas; multifamily residential developments; public open space; and road medians and corridors. Single family residential developments under 7,000 square feet, and sites using recycled wastewater are exempt from the provisions of the ordinance.

During Fiscal Year 1999-2000 three projects were required to meet the provisions in the ordinance. These developers submitted appropriate data to the Community Development Department for approval. Once the plan is approved the developer installs the irrigation and landscaping. Upon installation, Community Development staff inspects the project to verify the installation of the approved irrigation devices and plantings. Table 5-3 indicates the number of submittals required as per the provisions of the Landscape Ordinance from 2001-2005.

**Table 5-3 Large Landscape Conservation Programs**

	2001	2002	2003	2004	2005
# of Budgets Developed	2	9	10	4	3
# of Surveys Completed	2	9	10	4	3
# of Follow Up Visits	2	9	10	4	3
Actual Expenditures	\$200	\$1,350	\$1,800	\$450	\$400
Actual Water Savings	Data Not Collected				

**High Efficiency Washing Machine Rebate Programs**

The City of Lakewood does not operate a high efficiency washing machine rebate program. Central Basin Municipal Water District provides this rebate program for the community. The resident fills out a rebate application and provides proof of residency and purchase, then mails the information to a contract agency for processing. Table 5-4 indicates the number of rebates processed from 2001 through 2005. Total annual savings for the 214 high efficiency washing machines in use is estimated at 319,374 gallons per year.

**Table 5-4 High Efficiency Washing Machine Rebate Programs**

	2001	2002	2003	2004	2005
\$ per Rebate	\$100	\$100	\$100	\$100	\$100
# of Rebates	2	0	33	109	70
Expenditures	Lakewood Has No Direct Expenditure for Program				
Water Savings (gallons)	2,985	0	49,249	162,672	104,468

**Public Information Programs**

The City of Lakewood continues to spread the word about water conservation through periodic articles in various publications and speaking to community groups. Table 5-5 indicates the budget and the type of public awareness programs used in Lakewood’s service area.

**Table 5-5 Public Information Programs**

	2001	2002	2003	2004	2005
Paid Advertising					
Public Service Announcement					
Bill Inserts/ Newsletter/ Brochures	✓	✓	✓	✓	✓
Demonstration Gardens			✓		
Special Events, Media Events	✓	✓	✓	✓	✓
Speaker’s Bureau					
Coordination with Other Agencies, Industry, Groups					✓
Expenditures	\$17,800	\$12,300	\$11,703	\$12,023	\$10,208

**Public Information Events**

Staff participates in large community events to promote water conservation. The City of Lakewood hosts an annual event called the Pan Am Fiesta. The utility staffs a booth to distribute water conservation and water quality information to customers. The same booth hosts other departments with information on emergency preparedness and recycling. Approximately 300 individuals receive conservation information through the fiesta each year.

In August 2001 the City hosted a pool party for the community’s “connected residents” to encourage water and energy conservation. Approximately 250 guests received the conservation message. In addition to the event, the City displayed street banners along major boulevards containing the conservation message. These banners are re-installed periodically to reinforce the conservation message.

In 2003 the City dedicated a nature trail called the West San Gabriel River Open Space. This trail contains California native plantings. The City is currently working on the

construction of phase 2 of the project. Phase 2 scheduled for completion in late 2006.

During 2004 the City celebrated the community's 50<sup>th</sup> anniversary of incorporation. In April 2004, the City held an open house for the community. Approximately 2,000 residents toured city hall and viewed various displays from departments, city contractors and county agencies. The Department of Water Resources distributed conservation information during this well-attended event.

In April 2005 the utility was one of several environmental organizations that participated in an Earth Day celebration for the community. Approximately 200 children and parents received water conservation, waste recycling and gardening information from local and regional agencies.

### **Publications**

The City uses numerous printed materials to send information to the community. *Lakewood Living*, the community newsletter, incorporates water quality, conservation and infrastructure improvement information in its Annual Water Quality Report each spring. This publication is delivered to every address in the utility's service area, over 20,000 households and businesses.

### **School Education Programs**

The City works with the four school districts and three private schools to deliver information on water conservation to school children. Staff provides tours of water works facilities, all-school assemblies, a poster contest and classroom presentations. Central Basin Municipal Water District (CBMWD) also provides schools with water education programs. See Attachment A for more detail on the school programs offered by CBMWD. Table 5-6 indicates the number of children reached during school education programs (CBMWD and Lakewood Department of Water Resources), and the City of Lakewood expenses associated with the program.

	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Grades K-3 <sup>rd</sup>	480	510	510	60	540
Grades 4 <sup>th</sup> -6 <sup>th</sup>	340	430	430	180	260
Grades 7 <sup>th</sup> -8 <sup>th</sup>	30	0	0	0	0
High School	0	0	0	0	0
Expenditures	\$1,100	\$1,200	\$1,330	\$1,198	\$1,935

Since 1990 over 13,000 children have participated in the annual water conservation poster contest sponsored by the City. This is the only water-related program that the City offers to the entire community. The program coordinates with Earth Day activities and ends during Water Awareness Month in May. The City provides each class with poster paper and a water conservation related giveaway. The 12 winning posters in three age categories are displayed at the annual Pan Am Fiesta. The utility staff urges teachers to use the water department as a resource. In 2005 staff made presentations to 80 second graders at one of the local schools. The students received information on water supply and simple water conservation tips. The City has also donated water conservation related videos to each of the schools in the service area to promote water wise consumers.

**Commercial and Industrial Water Conservation**

During periods of declared drought, the City water conservation ordinance requires all commercial and industrial water customers to submit a water conservation plan. The plan requires a thorough examination of water use. Approximately 91 plans have been submitted and approved by the Department of Water Resources since 1991. Attachment G is the Business Water Conservation Plan.

Department of Water Resources staff provides technical assistance for the completion of the plan. The construction of new development is limited in Lakewood, due to the availability of vacant or underutilized land in the service area, but the department staff review and approve all plans that require new plumbing installation or retrofit of existing plumbing fixtures. The City also requires developments over 10,000 square feet to install a separate meter for irrigation for possible connection to the recycle water distribution system. The City maintains only one financial incentive program to encourage water conservation, that is the lower quantitative rate charged to customers purchasing recycled water. The recycled water customer saves \$.59 per unit consumed and is exempt from the water conservation rate structure.

The Central Basin Municipal Water District (CBMWD) conducts two programs that target commercial and industrial water users; installation of water free urinals and pre-rinse spray valves for use in commercial kitchens. The pre-rinse spray valves provide a restricted flow and shut off used during the dishwashing process. Twenty-three pre-rinse spray valves were installed in 2005, which should save almost 1.7 gallons per year. CBMWD also worked with one school and an office development to install 28 waterless urinals; an estimated 151,400 gallons of water savings annually.

**Table 5-7** **Pre-Rinse Spray Valve Program**

	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>
# of Commercial Replacements					28
# Industrial Replacements					
# Institutional Replacements					
Expenditures	Lakewood Has No Direct Expenditure for Program				
Water Savings (AF)					5

**Table 5-8** **Urinal Replacement Program**

	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>
# of Commercial Replacements					6
# Industrial Replacements					
# Institutional Replacements					22
Expenditures	Lakewood Has No Direct Expenditure for Program				
Water Savings (AF)					.5

**Wholesale Agency Programs**

The City of Lakewood does not wholesale water to other agencies, therefore provides no water conservation programs.

### **Conservation Pricing**

The section entitled Water Shortage Contingency Plan details the City's water conservation rate structure, which was adopted by the Lakewood City Council in 1991. The utility's rate structure is based on the historical water use by customer classification. See ATTACHMENT F to examine rate structure for all Lakewood water customers. The structure is based on the premise the more you use the more you pay. The City does not provide sewer service.

### **Water Conservation Coordinator**

The member of the Department of Water Resources staff fills the function of the water conservation coordinator. The senior management analyst spends approximately five percent of the time managing the provisions in the water conservation program, and implementing the public relations and school education programs. During periods of declared drought the time allocated to conservation duties increases to approximately 50 percent. The duties related to conservation coordination were developed in 1991. The individual that currently holds the position was involved in the development of the utility's water conservation program.

### **Water Waste Provisions**

The City Council adopted general water use prohibitions in 1991. Some of these provisions are in effect regardless of water supply conditions. See Attachment D for the Water Conservation Ordinance 91-3 and 91-13. Table 5-9 indicates the type of water waste provisions contained in the City's water conservation ordinance.

	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Waste Ordinance in Effect	YES	YES	YES	YES	YES
# of On-Site Visits	0	0	0	0	0
Water Softener Ordinance	NO	NO	NO	NO	NO
Expenditures	No Additional Expense to Administer the Water Waste Provisions				

The Water Conservation Ordinance established guidelines for each phase of a water supply shortage. The following water waste practices, which are always prohibited:

- Use of potable water by commercial shopping centers, schools, office buildings, hospitals, industrial uses, and churches whose property line is located within a reasonable distance from the City of Lakewood's recycled water system;
- Use of decorative fountains, or other structures using water for aesthetic purposes operating without a recirculating system; and
- Failure to fix known leaks on indoor or outdoor plumbing fixtures.

The following are suggested water use practices during periods of normal water supply availability:

- Use of water to wash walkways, driveways, parking areas and other hard surfaces should occur only as necessary for sanitary purposes and then only with a hose equipped with a positive shut off nozzle;
- Washing of vehicles and any other mobile equipment should be done only with a bucket or a hose equipped with a positive shut off nozzle for quick rinses;

- Voluntary water conservation water audits are encouraged;
- Retrofit of water conserving devices, including but not limited to ultra low flow toilets and low flow showerheads, is encouraged; and
- Installation of water efficient landscapes and irrigation devices, such as drip irrigation and moisture sensors, is encouraged.

The following are suggested water use practices during periods of voluntary water conservation:

- Washing of sidewalks, driveways, parking lots, building exteriors, streets and gutters should be minimized and limited to no more than two times during a month for the protection of the public health. The hose should be equipped with a positive shut off nozzle;
- Drinking water should not be served at any restaurant, motel, cafe, cafeteria or other public eating establishment unless expressly requested; and
- Watering lawns and landscaped areas should be limited to between the hours of 5:00 p.m. and 9:00 a.m.

The following are mandatory water use practices during periods of Phase 1 water supply shortages:

- Washing down driveways, sidewalks, parking lots, building exteriors, streets and gutters is limited to no more than two times during a month. The hose must be equipped with a positive shut off nozzle;
- Washing of vehicles and any other mobile equipment must be done only with a bucket or a hose equipped with a positive shutoff nozzle for quick rinses;
- Drinking water must not be served to any patron in any restaurant, motel, cafe, cafeteria or other public eating establishment unless expressly requested;
- Leaks from indoor and outdoor plumbing fixtures must be repaired promptly;
- Sprinklers must be adjusted to minimize water runoff from landscape on to hardscape areas; and
- Landscape irrigation is recommended during the early morning hours for no more than 10 minutes at a time. Irrigation should be avoided between the hours of 9:00 a.m. and 5:00 p.m.

The following are additional mandatory water use practices during periods of Phase 2 water supply shortages:

- Residential landscape irrigation can occur no more than three times during a seven day period for no more than ten minutes at a time during the months of June, July, August and September, and prohibited during the hours of 9:00 a.m. and 5:00 p.m. Landscape irrigation is restricted to twice during a seven day period for no more than ten minutes at a time during the months of October, November, December, January, February, March, April and May, and prohibited during the hours of 9:00 a.m. and 5:00 p.m.
- Non-residential water customers with a consumption in excess of 25,000 cubic feet in any billing period during the prior year, must prepare a written water conservation plan within sixty days of the effective date of a declared water shortage.

The following are additional mandatory water use practices during periods of Phase 3 water supply shortage:

- Residential landscape irrigation can occur no more than two times during a seven day period during the months of June, July, August and September, and prohibited during the hours of 8:00 a.m. and 8:00 p.m. Landscape irrigation is restricted to once during a seven day period during the months of October, November, December, January, February, March, April and May, and prohibited during the hours of 9:00 a.m. and 5:00 p.m.
- Irrigation of commercial nurseries and growers is restricted to no more than three times during a seven day period. Irrigation shall be prohibited during the hours of 9:00 a.m. and 4:00 p.m.

The following are additional mandatory water use practices during periods of Phase 4 water supply shortages:

- Residential landscape irrigation can occur no more than one time during a seven day period during the months of June, July, August and September, and prohibited during the hours of 8:00 a.m. and 8:00 p.m. Landscape irrigation is restricted to one time during a fourteen day period during the months of October, November, December, January, February, March, April and May, and prohibited during the hours of 9:00 a.m. and 5:00 p.m.
- Irrigation of commercial nurseries and growers is restricted to no more than twice during a seven day period. The irrigation is prohibited during the hours of 9:00 a.m. and 4:00 p.m.

The following are additional mandatory water use practices during periods of Phase 5 water supply shortage:

- Residential landscaping is restricted to watering only permanent trees and shrubs with a hand carried bucket or drip irrigation system one time during a seven day period during the months of June, July, August and September, and prohibited during the hours of 8:00 a.m. and 8:00 p.m. Landscape irrigation is restricted to watering only permanent trees and shrubs with a hand carried bucket or drip irrigation system one time during a fourteen day period during the months of October, November, December, January, February, March, April and May, and prohibited during the hours of 9:00 a.m. and 5:00 p.m.
- Irrigation of commercial nurseries and growers is restricted to one time during a seven day period and prohibited during the hours of 9:00 a.m. and 6:00 p.m.

Failure to meet the water use restrictions can result in a fine and/or the turn off of water service to the property. The City allows a water customer to file a petition, which waves the water use restrictions. The customer completes the Request for Exemption from Water Use Restrictions form (Attachment H); the Department of Water Resources staff reviews the information and renders a decision. The customer can appeal the staff's decision to the City Council.

### ***Residential Ultra-Low-Flush Toilet Replacement Program***

The City does not operate an ultra-low-flush toilet replacement program. The Central Basin Municipal Water District (CBMWD) maintains a residential ultra-low-flush toilet replacement program, which serves Lakewood water customers. The current CBMWD ULF toilet rebate is \$75 per fixture. The water customer purchases and installs a ULF toilet, completes an application provided by CBMWD, and then sends the application, proof of purchase, and proof of residency (copy of most recent water bill) to CBMWD. In 2001 CBMWD sponsored a toilet exchange program. Residents, armed with the latest water bill, received a ULF toilet and water conserving showerhead. Several weeks later the resident returned to the drop off the used toilet.

CBMWD has distributed 445 ultra-low-flush toilets to Lakewood residents through a toilet exchange program and distributed 129 toilet rebates since 2001. See Tables 5-10 and 5-11 for information on the residential ULF toilet replacement program. The annualized water savings totals 19 acre feet.

**Table 5-10 Single Family Residential ULF Toilet Replacement Program**

	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>
# ULF Rebates	16	35	9	18	5
# ULF Direct Installs					
# ULF CBO Installs	445				
Expenditures	Program Paid For By CBMWD				
Water Savings AF	14	1	.27	.54	.15

**Table 5-11 Multifamily Residential ULF Toilet Replacement Program**

	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>
# ULF Rebates	0	18	16	10	2
# ULF Direct Installs					
# ULF CBO Installs					
Expenditures	Program Paid For By CBMWD				
Water Savings AF	0	1.28	1.14	.71	.14

## 6. Demand Management Measures Not Implemented

The utility has not and does not plan to implement two of the Demand Management Measures: residential plumbing retrofit and system water audits, leak detection and repair.

<i>Non-implemented &amp; Not Scheduled DMM/Planned Water Supply</i>	<i>Per Acre Foot</i>
<i>Project Name</i>	<i>Cost (\$)</i>
Residential Plumbing Retrofit	\$522
System Water Audits, Leak Detection and Repair	\$346

### **Residential Plumbing Retrofit**

The City's plumbing codes reflect county and state laws regarding the use of water conserving devices. State law requires that all showerheads sold in California must meet a standard of 2.5 gallons per minute or less. Toilets can be retrofitted with displacement devices that reduce the amount of water used up to 4.2 gallons per day, and water faucets can be fitted with aerators that save approximately 1.5 gallons per day.

The City has not implemented a program to retrofit low-flow showerheads, water displacement devices for toilets and faucet aerators, because the cost of the program outweighs the benefit. A residential plumbing retrofit program that reaches the 75% of the water customers would require the purchase of 15,371 aerators, toilet dams and low flow showerheads. The total cost of the devices, not including the cost of staff to promote and implement the program, would cost \$260,500. Acknowledging that a percentage of the water customers would fail to install the devices, and estimating the life span of the devices at three to seven years, results in an savings of 97 acre feet of water annually or 498 acre feet over the life of the devices.

The cost of an acre foot of water in Fiscal Year 2003-04 was \$160. The cost of implementing the program is estimated at \$522 an acre foot, which indicates the program is not cost effective to implement.

Total Costs	\$260,500
Total Benefits	\$15,360
Time Horizon	3-7 years
Cost of Water (\$ per AF)	\$160
Water Savings (AF/Y)	97

### **System Water Audits, Leak Detection and Repair**

According to the California Urban Water Conservation Council, water system audits quantify water production and water sales, testing water meters, and field checking the distribution system.

The City does not contract for a distribution leak audit. Lakewood's unaccounted water loss is approximately 2 percent. The cost of an audit is approximately \$97,000. Staff estimates the savings from water lost through the system for this program at less than \$29,000 annually or \$89,000 over three years. Assuming that a leak detection audit saves 50 percent of the unaccounted for water in the distribution system, 93 acre feet of

unaccounted water would be saved annually or a savings of \$44,600 in production costs over a three year period.

The cost of an acre foot of water in Fiscal Year 2003-04 was \$160. The cost of implementing the program is estimated at \$346 an acre foot, which indicates the program, is not cost effective to implement.

**Table 6-3 Cost/Benefit System Water Audits, Leak Detection & Repair**

Total Costs	\$97,500
Total Benefits	\$44,600
Time Horizon	3 Years
Cost of Water (\$ per AF)	\$160
Water Savings (AF/Y)	93

## **7. Planned Water Supply Projects and Programs**

### **Central and West Coast Groundwater Basins Conjunctive Use Program**

California Department of Water Resources, acting as the court appointed Watermaster, has determined that stored water above the pumping allocation has no legal standing under the Central Basin Judgment. Any water extracted from the Central Groundwater Basin requires water rights. Over the past three years, the groundwater producers, cities and regulated water utilities who directly serve the public and have extraction rights in the Central and West Coast Groundwater Basins, have been working with the California Department of Water Resources and other regional water agencies to develop a groundwater storage plan for conjunctive use in both basins. The plan, which requires court approval, would allow for conjunctive use water storage and recovery programs. The exact amount of water available to any groundwater producer through such a storage program is undetermined at this time. However, preliminary projections of total storage space available may be equal to or exceed the allowable extraction under the judgment.

### **Recycled Water Distribution System Expansion**

The City believes that there is only limited potential for expansion of the recycled water distribution system. Adding eight miles of recycled water mains at a cost of \$2.8 million could create an additional 138 acre feet of recycled water sales. Potential users include 52.63 additional acres of parkway irrigation, 14 more acres of City parks, seven more school grounds, and three church landscape areas. This estimate could increase, if the State of California Department of Health Services broadens the type of application for recycled wastewater. This expansion of the recycled water distribution system is not currently in the City's short or long term capital improvement plan. Expansion is expected to occur some time after 2015. The expansion will not occur without additional incentives from the state or regional agencies, and an increase in pumping capacity at the Sanitation Districts of Los Angeles County Los Coyotes Reclamation Plant. (See Section 11. Recycled Water Plan for additional information.) Table 7-1 outlines the projected amount of recycled water use associated with the system expansion. Recycled water is a reliable water source and would not be impacted by drought conditions.

**Table 7-1**

### **Future Water Supply Projects**

<i>Supplies</i>	<i>Normal Water Year</i>	<i>Single Dry Water Year</i>	<i>Multiple Dry Water Years</i>		
			<i>Year 1</i>	<i>Year 2</i>	<i>Year 3</i>
Groundwater			Quantity Unknown at This Time		
Recycled Water	138	138	138	138	138

## ***8. Development of Desalinated Water***

The City of Lakewood Department of Water Resources currently has no plans for the use of desalinated water to meet water supply demands. In September 2005 the Long Beach Water Department launched a demonstration and research project for the Long Beach Seawater Desalination Prototype Facility at the LADWP Haynes Generation Station in Long Beach. This facility will serve as a laboratory for refining desalination technology. This plant is located within a reasonable distance to Lakewood and could provide a future water source for Lakewood. At this point the best and most economical desalter plants produce fresh water at about \$1,302 per acre foot. The desalination process is very energy intensive; a one percent change in electrical power cost results in a \$50/AF change in finished water cost.

### ***9. Current or Projected Supply Includes Wholesale Water***

The City of Lakewood maintains two connections to import supplies through Central Basin Municipal Water District, and emergency interconnections with Golden State Water Company, Long Beach and Cerritos. However, the utility has no plans to purchase wholesale water from these agencies during this 30-year planning cycle.

## 10. Water Shortage Contingency Plan

### Stages of Action

The water conservation plan contains six phases of action based on water supply conditions. The voluntary phase, which remains in effect during normal supply conditions, to phase 5 for shortages up to 50 percent. Table 10-1 places the shortages into stages and outlines the conditions for declaration of each stage.

**Table 10-1 Water Supply Shortage Stages & Conditions**

<i>Rationing Stages</i>					
<i>Voluntary Phase</i>	<i>Mandatory Phase 1</i>	<i>Mandatory Phase 2</i>	<i>Mandatory Phase 3</i>	<i>Mandatory Phase 4</i>	<i>Mandatory Phase 5</i>
<b>Water Supply Conditions (% Total Reduction)</b>					
<10%	10%>	<20%	<30%	<40%	<50%
Normal Supply Conditions	Declaration of Drought by State or Regional Agency Calling % Reduction			Halt of Artificial Recharge of Groundwater Basin Over 3 Year Period	Halt of Artificial Recharge of Groundwater Basin Over 5 Year Period

### Estimate of Minimum Supply for Next Three Years

As a groundwater producer, Lakewood enjoys the security associated with an adjudicated groundwater basin. The three-year minimum water supply would be based on the adjudicated groundwater extraction rights held by the utility. Lakewood currently owns 9,423 acre feet of extraction rights. The Watermaster, which oversees the execution of the judgment, controls the extraction of water from the Central Groundwater Basin, and could call for a reduction in groundwater extraction during prolonged drought. Though this type of restriction has not occurred since the adjudication of the basin, a long-term cessation of recharge could trigger such action.

**Table 10-2 Three-Year Estimated Minimum Water Supply- AF/Year**

<i>Source</i>	<i>Year 1</i>	<i>Year 2</i>	<i>Year 3</i>	<i>Normal</i>
Central Groundwater Basin	9,423	9,423	9,423	9,423

### Preparation for Catastrophic Water Supply Interruption

In 2003 the Lakewood Department of Water Resources prepared a vulnerability risk assessment for the U.S. Environmental Protection Agency in response to the amendments to the Safe Drinking Water Act. The assessment examined each water production facility for possible vulnerability associated with a variety of manmade and natural disasters. The department's emergency response procedures were updated based on the study's findings. The study contains highly sensitive information, and is therefore not available to the public.

Over the past fifteen years the water utility has prepared for a catastrophic water supply interruption, including the purchase of emergency generators, installation of security measures, seismic retrofit of water storage facilities, development of communication systems and plans for emergency response. These emergency operations procedures are updated annually, and water personnel are routinely trained on emergency response procedures. The department's emergency response plan outlines procedures for the following:

- Assessing water production and distribution facilities
- Implementing plans for breeches in water quality
- Distributing water to the community
- Repairing damage to the water system

### **Regional Power Outage**

The Lakewood Department of Water Resources purchased two portable emergency generators and three stationary emergency generators to run the booster pumps at the water storage facilities. The portable generators can connect to eight different water wells, which provide the utility with significant flexibility. The electrical panels are wired for rapid installation and conversion to the portable generators. The stationary generators at the water storage facilities start automatically at the loss of electrical power. All emergency generators operate using diesel fuel. The City maintains a supply of diesel fuel at one of the City's maintenance yards.

### **Earthquake**

Since the mid-1990s the water utility has retrofitted water storage tanks to increase reliability during seismic activity. The interior structure of seven welded steel tanks contains reinforced framing to withstand significant ground shaking. The floor tank overflow drains were modified so that the pipe no longer penetrates the floor, which reduces the potential tearing in the event of strong tank movement. Additionally, each inlet and outlet has been retrofitted with flexible couplings that move with an earthquake. The utility maintains 13 water wells, which provide redundancy during emergency situations.

### ***Prohibitions, Penalties and Consumption Reduction Methods***

The City began developing its water conservation plan in March 1990 as a result of lingering drought conditions. The plan criteria includes:

- Providing a mechanism to prohibit water waste and penalize habitual water wasters
- Creating a fair and equitable water conservation rate structure that did not penalize customers already conserving water
- Creating an easily understood plan
- Allowing for effective enforcement of the plan
- Implementing an administratively feasible plan that did not require major increases in administrative costs, such as computer programming modifications and additional personnel

### **Water Waste Provisions**

The City Council adopted general water use prohibitions in 1991. Some of these provisions are in effect regardless of water supply conditions. See Attachment D for the Water Conservation Ordinance 91-3 and 91-13. Table 10-3 indicates the type of water waste provisions contained in the City's water conservation ordinance. The following table outlines the prohibitions imposed during the stages of water supply shortages.

**Table 10-3****Mandatory Prohibitions**

<i>Prohibited Water Use</i>	<i>Stage When Prohibition Becomes Mandatory</i>
Uncorrected Plumbing Leaks	Normal Water Supply
Operating Decorative Fountains without Recirculating Water System	Voluntary Phase
Overspray Caused by Irrigation	Phase 1
Serving Water at Public Eating Establishments Upon Request Only	Phase 1
Street/Sidewalk Cleaning	Phase 1 (Limits Use)
Washing Cars	Phase 1 (Limits Use)
Watering Lawns/Landscape	Phase 1 (Limits Use)
Non-permanent Agriculture	Phase 3

The water conservation ordinance also allows customers to apply for an exemption from water use restrictions. The process for an exemption is outlined on the Request for Exemption from Water Use Restriction Form. Attachment H is a sample of the Request for Exemption from Water Use Restriction Form. The water conservation coordinator reviews each request and recommends to the Director of Water Resources the appropriate action. The ordinance allows the consumer appeal rights to the City Council. Failure to meet the water use restrictions can result in a fine and/or the turn off of water service to the property.

**Consumption Reduction Methods**

The City incorporated a monetary means to reduce water use in the water conservation measures, which were initially implemented in 1991. Table 10-4 illustrates the type of consumption reduction measures outlined in the City's water conservation program.

**Table 10-4****Consumption Reduction Methods**

<i>Examples of Consumption Reduction Methods</i>	<i>Stage When Method Takes Effect</i>	<i>Projected Reduction</i>
Reduce Pressure in Water Lines	Phase 2	8-10%
Flow Restriction on Water Use	Phase 1	<1%
Restriction Violators		
Use Prohibitions	Normal-Phase 5	<10%-40%
Water Shortage Pricing	Voluntary	Depends on the Conservation Phase 10- <30% Implemented
Voluntary Rationing	Voluntary	<10%
Education Program	Normal	Not Quantified

The City's water rate structure does not require the water customer to reduce water use based on historical demand. Instead the City separates the water customers into 22 classifications, e.g. single family residential, large grocery stores, theaters, department stores, and fast food establishments. The City analyzed the historical water use for each water use classification and established consumption tiers based on total historical water use in each classification.

The premise of this rate structure is simple, the more you use the more you pay. A consumer using water that exceeds the first and subsequent tiers would be charged for excessive use. The rate increases progressively; the greater the water supply shortage the steeper the excessive use charge. The excessive water use charge is calculated only on the amount of water used over each tier.

The City designed the water conservation rate structure to allow those customers already conserving to remain unaffected by the implementation in conservation rates. In the voluntary phase a customer must use over four times the average residential consumption to receive an excessive use charge on the water bill. Excessive use charge during a phase 3 water supply shortage begins when a customer uses more than the citywide average for the water use classification. Table 10-5 lists the water use classifications, the type of account and the percentage of the total accounts in the classification.

**Table 10-5 Water Use Classifications**

<i>Water Use Classification</i>	<i>Description of Account Type</i>	<i>% of Total Accounts</i>
Single Family Residential	Detached homes without differentiating lot size	93.2%
Multiple Family Residential	Based on the number of units connected to the water meter	.86%
Duplex Residential	Two residential units	.15%
Auto Related Business	Gas stations & auto repair shops	.13%
Churches	Churches without school facilities	.12%
Supermarkets	Large food store chains	.05%
Theaters	Multiple movie theater centers	.05%
Car Washes	Car washes without recycling equipment	.14%
Fast Food Restaurants	Large volume fast food establishments	.13%
Fast Food Restaurants	Small volume fast food establishments	.05%
Small Food Stores	Grocery stores not associated with a supermarket chain	.06%
Medical/Dental Offices	Professional medical facilities excluding hospitals	.12%
Commercial Nurseries & Growers	Christmas tree farms & local growers	.12%
Restaurants, Lounges & Taverns	All non-fast food establishments	.29%
Schools	Elementary schools	.11%
Schools	Junior & senior high schools	.03%
Commercial Centers	Small commercial shopping centers	1.94%
Commercial Large	Large commercial shopping centers	1.23%
Motels	Based on the number of units connected to the water meter	0%
Department Stores	Large retail department stores	.04%
Ice Rinks	Ice rinks	.0%
Exempt	Hospitals, recycled water user, recycled car washes	.4%

The water conservation rate structure exempts recycled water users, but these customers are not exempt from the water use restrictions. Attachment F outlines the allotment for each classification by water conservation phase.

### **Penalties and Charges**

The Water Conservation Ordinance No. 91-13 includes excessive water use penalties. While the City does not restrict the use of water consumed, the consumer that uses more than the average in the water rate classification does pay more for the extra water consumed. The greater the water use the greater the excess charge.

The ordinance also provides a mechanism to penalize consumers for violation of the water use restrictions. These penalties range from a warning to the termination of water

service. The ordinance also includes provisions to write citations and charge fees for violation of water use restrictions. Table 10-6 outlines the water supply shortage phase that triggers the imposition of fees and additional charges for water use.

**Table 10-6 Penalties & Charges**

<i>Type of Penalty</i>	<i>Stage Penalty Becomes Effective</i>
Penalties for Failing to Reduce Consumption	Voluntary Phase (Water Conservation Rate Structure)
Flat Fine	Phase 1 (Water Use Restrictions)
Flow Restriction	Phase 1 (Water Use Restrictions)
Termination of Service	Phase 1 (Water Use Restrictions)

As Table 10-7 illustrates, an individual failing to comply with the mandatory water use restrictions is issued a citation for improper water use. The penalties gradually increase with subsequent violations.

**Table 10-7 Water Waste Penalties**

<i>Violation</i>	<i>Penalty</i>
First	Written Warning Notice
Second & Third	Written Notice of Violation & \$25.00 (payable in no more than 15 days)
Fourth	Written Notice of Violation, \$75.00 & Installation of Flow Restrictor (Restrictor shall remain in place for no less than 24 hours & customer must pay fees prior to removal.)
Fifth & Subsequent	Written Notice of Violation, \$75.00 & Installation of Flow Restrictor (Restrictor shall remain in place for no less than 48 hours & customer must pay fees prior to removal.)

***Analysis of Revenue Impacts of Reduced Sales During Shortages***

The estimated revenue from the water conservation rate structure is not expected to relieve the City from the anticipated shortfall. In fact, in phases four and five the amount of revenue from the water conservation rate structure is expected to diminish due to the additional water use restrictions for outdoor water use. The City expects that those commercial customers that cannot further reduce consumption will continue to pay the excessive use charges.

The City collects approximately \$6.5 million annually from potable water sales and an additional \$159,000 from recycled water sales. Based on average annual potable water sales of 8,895 acre feet a 50 percent loss in water sales would reduce production to 4,447 acre feet. Without the implementation of additional water rate increases above and beyond the water conservation rate structure or the reduction in capital or operating expenditures, the City’s estimated loss in water revenue would total \$2.46 million in a Phase 5 water supply shortage, as indicated in Table 10-8.

**Table 10-8 Actions and Conditions that Impact Revenues & Expenditures**

<i>Type of Revenue</i>	<i>Anticipated Revenue Reduction</i>	<i>Type of Expenditure</i>	<i>Anticipated Expenditure Increase/Decrease</i>
Reduced Sales	\$2,469,496	Reduction in Groundwater Extraction Fees	\$1,115,634
		Reduction in Energy Costs	\$478,129
<b>TOTAL</b>	<b>\$2,469,496</b>		<b>\$1,593,763</b>

Table 10-9 indicates the revenues and expenditures without change to utility operations or increases in quantity charges. This table reduces the maintenance and operations expenditures for energy and groundwater extraction fees to match the reduction in demand, but makes no other changes in operation or capital expenditures. As the table indicates, the ending balance for a Phase 4 water supply shortage would result in a \$75,710 shortfall, and a \$410,233 shortfall in a Phase 5 water supply shortage.

Table 10-10 assumes the same reductions in the quantity of water and the same operational expenditures, but decreases the capital expenditures from \$906,509 to \$830,799 in Phases 4 and \$496,276 in Phase 5. The reduction in capital expenditures would delay the replacement of aging infrastructure.

Table 10-9

## Fiscal Impact of Drought, Conditions without Changes to Utility Operations

	Normal 0%	Voluntary 5%	Phase 1 10%	Phase 2 20%	Phase 3 30%	Phase 4 40%	Phase 5 50%
<b>Operating Revenues:</b>							
Metered Water Sales	6,558,994	6,312,045	6,065,095	5,571,196	5,077,296	4,583,397	4,089,497
Reclaimed Water Sales	159,078	159,078	159,078	159,078	159,078	159,078	159,078
Fire Protection	25,011	25,011	25,011	25,011	25,011	25,011	25,011
Installation Charges	120	120	120	120	120	120	120
Service Initiation and Restoration	33,375	33,375	33,375	33,375	33,375	33,375	33,375
Other	174,430	174,430	174,430	174,430	174,430	174,430	174,430
<b>Total Operating Revenue</b>	<b>6,951,008</b>	<b>6,704,059</b>	<b>6,457,109</b>	<b>5,963,210</b>	<b>5,469,310</b>	<b>4,975,411</b>	<b>4,481,511</b>
<b>Operating Expenses:</b>							
Supply, Transmission, Distribution	2,933,097	2,853,409	2,773,720	2,614,343	2,454,967	2,295,590	2,136,214
Customer Service	411,108	411,108	411,108	411,108	411,108	411,108	411,108
Administration	298,973	298,973	298,973	298,973	298,973	298,973	298,973
Overhead	775,000	775,000	775,000	775,000	775,000	775,000	775,000
Depreciation	629,000	629,000	629,000	629,000	629,000	629,000	629,000
<b>Total Operating Expenses</b>	<b>5,047,178</b>	<b>4,967,490</b>	<b>4,887,801</b>	<b>4,728,424</b>	<b>4,569,048</b>	<b>4,409,671</b>	<b>4,250,295</b>
<b>Net Operating Income</b>	<b>1,903,831</b>	<b>1,736,569</b>	<b>1,569,308</b>	<b>1,234,785</b>	<b>900,262</b>	<b>565,739</b>	<b>231,216</b>
<b>Adjust For Depreciation</b>	<b>629,000</b>						
<b>Adjusted Net Operating Income</b>	<b>2,532,831</b>	<b>2,365,569</b>	<b>2,198,308</b>	<b>1,863,785</b>	<b>1,529,262</b>	<b>1,194,739</b>	<b>860,216</b>
<b>Non-Operating Income:</b>							
Interest Revenue	148,108	148,108	148,108	148,108	148,108	148,108	148,108
Other Revenue	55,231	55,231	55,231	55,231	55,231	55,231	55,231
<b>Total Non-Operating Income</b>	<b>203,339</b>						
<b>Net Revenue</b>	<b>2,736,170</b>	<b>2,568,908</b>	<b>2,401,647</b>	<b>2,067,124</b>	<b>1,732,601</b>	<b>1,398,078</b>	<b>1,063,555</b>
<b>Debt Service Requirements:</b>							
Revenue Bonds	499,618	499,618	499,618	499,618	499,618	499,618	499,618
State Reclaimed Loan	67,661	67,661	67,661	67,661	67,661	67,661	67,661
<b>Total Debt Service</b>	<b>567,279</b>						
<b>Available for Capital Projects</b>	<b>2,168,891</b>	<b>2,001,629</b>	<b>1,834,368</b>	<b>1,499,845</b>	<b>1,165,322</b>	<b>830,799</b>	<b>496,276</b>
<b>Total Capital Projects</b>	<b>906,509</b>						
<b>Ending Balance</b>	<b>1,262,382</b>	<b>1,095,120</b>	<b>927,859</b>	<b>593,336</b>	<b>258,813</b>	<b>(75,710)</b>	<b>(410,233)</b>

Table 10-10

## Fiscal Impact of Drought, Conditions with Changes to Utility Operations

	Normal 0%	Voluntary 5%	Phase 1 10%	Phase 2 20%	Phase 3 30%	Phase 4 40%	Phase 5 50%
<b>Operating Revenues:</b>							
Metered Water Sales	6,558,994	6,312,045	6,065,095	5,571,196	5,077,296	4,583,397	4,089,497
Reclaimed Water Sales	159,078	159,078	159,078	159,078	159,078	159,078	159,078
Fire Protection	25,011	25,011	25,011	25,011	25,011	25,011	25,011
Installation Charges	120	120	120	120	120	120	120
Service Initiation and Restoration	33,375	33,375	33,375	33,375	33,375	33,375	33,375
Other	174,430	174,430	174,430	174,430	174,430	174,430	174,430
<b>Total Operating Revenue</b>	<b>6,951,008</b>	<b>6,704,059</b>	<b>6,457,109</b>	<b>5,963,210</b>	<b>5,469,310</b>	<b>4,975,411</b>	<b>4,481,511</b>
<b>Operating Expenses:</b>							
Supply, Transmission, Distribution	2,933,097	2,853,409	2,773,720	2,614,343	2,454,967	2,295,590	2,136,214
Customer Service	411,108	411,108	411,108	411,108	411,108	411,108	411,108
Administration	298,973	298,973	298,973	298,973	298,973	298,973	298,973
Overhead	775,000	775,000	775,000	775,000	775,000	775,000	775,000
Depreciation	629,000	629,000	629,000	629,000	629,000	629,000	629,000
<b>Total Operating Expenses</b>	<b>5,047,178</b>	<b>4,967,490</b>	<b>4,887,801</b>	<b>4,728,424</b>	<b>4,569,048</b>	<b>4,409,671</b>	<b>4,250,295</b>
<b>Net Operating Income</b>	<b>1,903,831</b>	<b>1,736,569</b>	<b>1,569,308</b>	<b>1,234,785</b>	<b>900,262</b>	<b>565,739</b>	<b>231,216</b>
<b>Adjust For Depreciation</b>	<b>629,000</b>						
<b>Adjusted Net Operating Income</b>	<b>2,532,831</b>	<b>2,365,569</b>	<b>2,198,308</b>	<b>1,863,785</b>	<b>1,529,262</b>	<b>1,194,739</b>	<b>860,216</b>
<b>Non-Operating Income:</b>							
Interest Revenue	148,108	148,108	148,108	148,108	148,108	148,108	148,108
Other Revenue	55,231	55,231	55,231	55,231	55,231	55,231	55,231
<b>Total Non-Operating Income</b>	<b>203,339</b>						
<b>Net Revenue</b>	<b>2,736,170</b>	<b>2,568,908</b>	<b>2,401,647</b>	<b>2,067,124</b>	<b>1,732,601</b>	<b>1,398,078</b>	<b>1,063,555</b>
<b>Debt Service Requirements:</b>							
Revenue Bonds	499,618	499,618	499,618	499,618	499,618	499,618	499,618
State Reclaimed Loan	67,661	67,661	67,661	67,661	67,661	67,661	67,661
<b>Total Debt Service</b>	<b>567,279</b>						
<b>Available for Capital Projects</b>	<b>2,168,891</b>	<b>2,001,629</b>	<b>1,834,368</b>	<b>1,499,845</b>	<b>1,165,322</b>	<b>830,799</b>	<b>496,276</b>
<b>Total Capital Projects</b>	<b>906,509</b>	<b>906,509</b>	<b>906,509</b>	<b>906,509</b>	<b>906,509</b>	<b>830,799</b>	<b>496,276</b>
<b>Ending Balance</b>	<b>1,262,382</b>	<b>1,095,120</b>	<b>927,859</b>	<b>593,336</b>	<b>258,813</b>	<b>(0)</b>	<b>(0)</b>

### ***Water Shortage Ordinance/Resolution and Use Monitoring Procedures***

On February 28, 1991 the Lakewood City Council adopted a Water Conservation Ordinance No. 91-3 and instituted a Phase 1 water supply shortage following public hearings. The ordinance was adopted as an urgency ordinance based on the need to protect the public health and safety. On March 1, 1991 the council adopted a water conservation rate structure, which instituted a financial “incentive” for customer conservation. The City Council adopted the rate resolution after a public hearing and two readings by the Council. The original ordinance included the mechanism to institute a water supply emergency and initiate water use restrictions, penalties for wasting water, and the water conservation rate structure. The ordinance consisted of three water supply shortage phases for a 10, 20 and 30 percent water supply shortage.

The City Council adopted a revised Water Conservation Ordinance No. 91-13 on October 22, 1991 (**Attachment D**). The revisions to the ordinance provided greater flexibility to move more swiftly from one water conservation phase to another. This allowed the City to keep pace with rapid changes in the water supply outlook. The provisions in the revised ordinance include:

- **General Water Waste Provisions.** Prohibited water waste provisions regardless of water supply conditions.
- **Voluntary Water Use Provisions.** Suggested water conservation practices during periods when the water supply losses do not exceed ten percent.
- **Mandatory Water Use Restrictions.** The Water Conservation Ordinance No. 91-13 outlines the mandatory water use restrictions for water supply losses between 10 and 50 percent. The ordinance details progressively stricter water use restrictions in five phases.
- **Water Conservation Rate Structure.** The ordinance allows the City Council to implement any phase of the water conservation rate structure by resolution. The City Council held a public hearing and adopted water conservation rate structures for Voluntary, Phase 1, Phase 2 and Phase 3 water supply shortages. The Phase 4 and Phase 5 stages remain pending.

The City’s implementation of any phase of the water conservation plan is based on the existing and predicted water supply outlook as determined by the State Department of Water Resources, Metropolitan Water District of Southern California, Central Basin Municipal Water District and the Water Replenishment District of Southern California. The implementation of the water conservation ordinance or movement from one phase to another is accomplished by the adoption of a City Council resolution. This resolution enacts the appropriate water use restrictions and the corresponding water conservation rate structure. Attachment I is a sample of the City Council Resolution.

The City uses historical production data to determine the effectiveness of water conservation programs. Staff analyzes daily, weekly and rolling four week production. Additionally, the City monitors water use, especially accounts that use amounts over the

water conservation rate structure tiers. This analysis can indicate the success of the public education portion of the water conservation program. While the City expects a low percentage of customers' use to exceed the first tier, a gradual decrease in consumption should occur as the drought continues (See Table 10-11).

<b>Table 10-11</b> <i>Mechanisms for Determining Actual Reductions</i>	<b>Water Use Monitoring Mechanisms</b> <i>Type and Quality of Data Expected</i>
Analysis Daily Consumption Analysis Weekly Consumption Analysis Rolling 4 Week Average	Data for all production analysis is numerical data from water production meters at each well, which are tested annually to fall within a +/-3%. Data is collected daily.
Analysis Water User Exceeding Average Tier	Extrapolate users exceeding the typical water use to target additional water conservation message. This information is collected bi-monthly. In extreme water supply shortages the water meters could be read on a monthly basis.

## 11. Recycled Water Plan

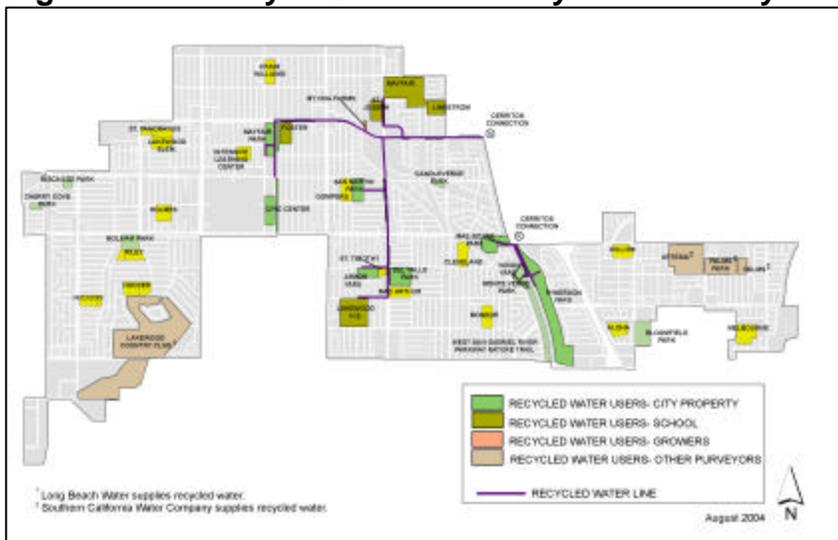
### Recycled Water Supply

Southern California uses recycled wastewater to meet water demands including landscape/agricultural irrigation, groundwater recharge, and industrial/commercial applications. Lakewood has operated a recycled water system since 1989. Table 11-1 indicates the agencies involved in the development of Lakewood's recycled water system.

Table 11-1		Participating Agencies
Type of Agency	Agency	Role in Plan Development
Water Agencies	City of Lakewood	Construction and Delivery of Recycled Water to the Community
	City of Cerritos	Maintains Pump Facility and Sells Recycled Water to Lakewood
	Metropolitan Water District of Southern California	Incentive Program to Promote Recycled Water Use
	Central Basin Municipal Water District	Incentive Program to Promote Recycled Water Use (MWD Program Implemented Through CBMWD)
Wastewater Agencies	County Sanitation Districts of Los Angeles County	Treated Wastewater Supplier
Planning Agencies	California Department of Water Resources	Funding- Low Cost Loan for Construction of Recycled Water System

Over the past fifteen years, the City of Lakewood has reduced its reliance on potable water by 6,575 acre feet or an average of 411 acre feet each year through the use of recycled wastewater. The City's six mile recycled water distribution system connects to the County Sanitation Districts of Los Angeles County's Los Coyotes Reclamation Plant through the City of Cerritos' recycled wastewater production and distribution system. Cerritos operates a pump station at the reclamation plant, which can produce up to 12,000 GPM. The City of Lakewood maintains two metered service connections with the City of Cerritos. The map below, Figure 11-1 locates the recycled water connections to the Cerritos system, and the current recycled water customers.

**Figure 11-1 City of Lakewood Recycled Water System**



**Wastewater Quantity, Quality and Current Uses**

The city of Lakewood receives its recycled water supply from the County Sanitation Districts of Los Angeles County Los Coyotes Water Reclamation Plant. The plant influent averages 39.74 MGD of which 32.89 MGD is available for recycled use. According to the County Sanitation Districts of Los Angeles County, the Los Coyotes Reclamation Plant is due for expansion in 2008, but this work has not been scheduled. Currently, the plant has the capacity to handle peak demand of 44.5 MGD.

**Table 11-2 Wastewater Collected & Treated (MGD)**

	<i>2000</i>	<i>2005</i>
Wastewater Collected & Treated in Service Area	39.69	39.74
Quantity Meeting Recycled Water Standard	34.41	32.89

Regionally, the potential for recycled wastewater use is greater than current use. In 2005, an average of 30.62 million gallons of treated wastewater escapes into the ocean every day (Table 11-3). At the Los Coyotes Reclamation Plant, recycled water use limits are based on the pumping capacity. Cerritos plans to upgrade the recycled pumps used to distribute recycled wastewater to Bellflower, Cerritos, Lakewood and Central Basin Municipal Water District during 2006. The project will increase reliability not capacity. Central Basin Municipal Water District plans to construct the Montebello Loop, which would connect the recycled water distribution system served by the Los Coyotes Reclamation Plant with the water distribution system served by San Jose Creek plant. The cross connection of these systems will increase the District’s flexibility; taking more water from San Jose Creek Reclamation Plant could free pumping capacity at the Los Coyotes plant.

**Table 11-3 Disposal of Non-Recycled Wastewater (MGD)**

<i>Disposal</i>	<i>Treatment Level</i>	<i>2000</i>	<i>2005</i>
To Ocean	Tertiary	31.64	30.62

The City currently maintains 39 service connections to the recycled water distribution system. Currently all recycled water is used for irrigation. Due to the residential/commercial composition of the community, the City expects all recycled use to remain for irrigation only. Table 11-4 breaks down recycled water use for Fiscal Year 2005 by user type.

**Table 11-4 Recycled Water Use by Customer Type**

<i>Type of Customer</i>	<i>Demand FY2005</i>	<i>% of Total Demand</i>	<i># of Metered Services</i>	<i>Parcel Size in Acres</i>
Schools Turf Irrigation	118	34%	4	83
City of Lakewood Turf Irrigation	226	64%	34	103
Growers Agriculture Irrigation	8	2%	1	5
<b>TOTAL</b>	<b>352</b>	<b>100%</b>	<b>39</b>	<b>191</b>

Almost all recycled water is used for landscape irrigation. Five schools, City Hall and two City-owned maintenance yards, six parks and almost nine acres of parkway use recycled water for landscape irrigation. The City maintains one service connection with a commercial grower that uses this supply to maintain inventory. Since this water supply

is used solely for irrigation, the demand is based on the weather. In hot dry years recycled water demand meets the projected demand of 450 acre feet. Wet years reduce recycled water demand. The 2000 Urban Water Management Plan Update predicted recycled water use at 501 acre feet during 2005, which is significantly higher than the actual sale of 352 acre feet. This can be attributed to the 21.04 inches of rainfall during the 2004-2005.

The City can maintain the cost differential between recycled water charges and potable water charges due to an incentive program instituted by MWD. Lakewood receives a \$154 per acre foot rebate for up to 450 acre feet of recycled water used through MWD's Local Projects Program (LPP). MWD engages in this type of incentive program to reduce the reliance on import water supplies. The contract between Lakewood and MWD expires in 2014; seven years beyond the repayment of the low interest loan from the State of California used to fund the construction of the distribution system.

The City of Lakewood has examined potential expansion of the recycled water system. The utility estimates build out of the recycled water system would result in approximately 588 acre feet sold annually; 138 acre feet of potential recycled water use. Table 11-5 breaks down the potential recycled water use by type.

**Table 11-5 Potential Recycled Water Use in Acre Feet**

<i>Type of Use</i>	<i>Treatment Level</i>	<i>Potential Type of User</i>	<i>2010</i>	<i>2015</i>	<i>2020</i>	<i>2025</i>	<i>2030</i>
Landscape	Tertiary	Parks		19			
		Parkways					53
		Schools		53			11
		Churches	2				
TOTAL			2	72	0	0	64

An additional factor that could influence the recycled expansion is Cerritos' ability to provide additional recycled water. Cerritos personnel indicated that the existing system could not produce more than an additional 100 acre feet of recycled water. Expansion of the production facility must occur prior to increases beyond this amount.

Table 11-6 indicates the types of incentives the City uses to encourage recycled water use. Lakewood's recycled water quantitative rate is significantly lower than the quantitative charge for potable water. Currently the recycled rate is \$0.95 per hundred cubic feet compared to the potable rate of \$1.54 per hundred cubic feet. Additionally, the City provided financial assistance to recycled water customers for the installation of required backflow prevention devices to protect the public water supply. The City does not anticipate providing further incentives to encourage connection to the recycled water system due to the current differential in the quantitative charges between potable and recycled water.

**Table 11-6 Actions Used to Encourage Recycled Water Use**

<i>Method</i>	<i>Used (✓)</i>
Subsidized Costs	✓
Grants	
Dual Plumbing Standards	✓
Regulatory Relief	✓
Regional Planning	
Incentive Program	
Long-term Contracts (Price/Reliability)	
Rate Discounts	✓
Prohibit Specific Fresh Water Uses	
Low-interest Loans	
Public Education Information	✓
Require Recycle Water Use	✓
Other	

## **12. *Water Quality Impacts on Reliability***

The Department of Water Resources does not anticipate a change in water supply reliability due to water quality. Groundwater quality in the area of the City's water production facilities remains fairly consistent. However, any variation in groundwater quality would not change the amount of water that could be extracted in an adjudicated groundwater basin, like Central Basin. Changes in water quality could prompt water production personnel to change operational procedures, but the total groundwater production would not change. Additionally, new regulations by the California Department of Health Services and/or the U.S. Environmental Protection Agency could require the addition of water treatment facilities.

### 13. Water Service Reliability

The following tables project various scenarios regarding the reliability of the City's water supply during normal, single dry year and multiple dry years. The normal supply is based on the City's ownership of 9,423 acre feet of groundwater pumping rights in the Central Groundwater Basin. These calculations are based on the assumption that the Central Groundwater Basin Watermaster will not decrease pumping rights during a multi-year drought, and the Watermaster's behavior during previous multi-year droughts.

#### Normal Water Year Supply

**Table 13-1 Projected Normal Water Year Supply (AF)**

	2010	2015	2020	2025	2030
Supply (AF)	9,423	9,423	9,423	9,423	9,423
% of Normal Year	100	100	100	100	100

**Table 13-2 Projected Normal Water Demand**

	2010	2015	2020	2025	2030
Demand (AF)	8,925	8,970	9,015	9,060	9,105
% of Year 2005	100.63%	101.14%	101.65%	102.15%	102.66%

**Table 13-3 Projected Normal Year Supply & Demand Comparison (AF/Y)**

	2010	2015	2020	2025	2030
Supply Totals (AF)	9,423	9,423	9,423	9,423	9,423
Demand Totals (AF)	8,925	8,970	9,015	9,060	9,105
Variance +/- (AF)	498	453	408	363	318
Supply > Demand	5.28%	4.81%	4.33%	3.85%	3.37%
Demand < Supply	5.58%	5.05%	4.53%	4.01%	3.49%

#### Single Dry Year Water Supply

**Table 13-4 Projected Single Dry Year Water Supply (AF)**

	2010	2015	2020	2025	2030
Supply (AF)	9,423	9,423	9,423	9,423	9,423
% of Normal Year	100%	100%	100%	100%	100%

**Table 13-5 Projected Single Dry Year Water Demand**

	2010	2015	2020	2025	2030
Demand (AF)	8,925	8,970	9,015	9,060	9,105
% of Year 2005	100.63%	101.14%	101.65%	102.15%	102.66%

**Table 13-6 Projected Single Dry Year Supply & Demand Comparison (AF/Y)**

	2010	2015	2020	2025	2030
Supply Totals (AF)	9,423	9,423	9,423	9,423	9,423
Demand Totals (AF)	8,925	8,970	9,015	9,060	9,105
Variance +/- (AF)	498	453	408	363	318
Supply > Demand	5.28%	4.81%	4.33%	3.85%	3.37%
Demand < Supply	5.58%	5.05%	4.53%	4.01%	3.49%

## ***Multiple Dry Year Supply 2006-2010***

**Table 13-7 Projected Supply During Multiple Dry Years 2006-2010**

	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Supply (AF)	9,423	9,423	9,423	9,423	9,423
% of Normal Year	100%	100%	100%	100%	100%

**Table 13-8 Projected Demand During Multiple Dry Years 2006-2010**

	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Demand (AF)	8,880	8,891	8,457	8,022	7,140
% of Normal Year	100%	100%	95%	90%	80%

**Table 13-9 Supply & Demand Comparison During Multiple Dry Years 2006-2010**

	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Supply Totals (AF)	9,423	9,423	9,423	9,423	9,423
Demand Totals (AF)	8,880	8,891	8,457	8,022	7,140
Variance +/- (AF)	543	532	966	1,401	2,283
Supply > Demand	5.76%	5.65%	10.25%	14.86%	24.23%
Demand < Supply	6.11%	5.98%	11.42%	17.46%	31.97%

## ***Multiple Dry Year Supply 2011-2015***

**Table 13-10 Projected Supply During Multiple Dry Years 2011-2015**

	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
Supply (AF)	9,423	9,423	9,423	9,423	9,423
% of Normal Year	100%	100%	100%	100%	100%

**Table 13-11 Projected Demand During Multiple Dry Years 2011-2015**

	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
Demand (AF)	8,934	8,943	8,504	8,064	7,176
% of Normal Year	100%	100%	95%	90%	80%

**Table 13-12 Supply & Demand Comparison During Multiple Dry Years 2011-2015**

	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
Supply Totals (AF)	9,423	9,423	9,423	9,423	9,423
Demand Totals (AF)	8,934	8,943	8,504	8,064	7,176
Variance +/- (AF)	489	480	919	1,359	2,247
Supply > Demand	5.19%	5.09%	9.75%	14.41%	23.85%
Demand < Supply	5.47%	5.37%	10.80%	16.84%	31.31%

## Multiple Dry Year Supply 2016-2020

### Projected Supply During Multiple Dry Years

**Table 13-13 2016-2020**

	2016	2017	2018	2019	2020
Supply (AF)	9,423	9,423	9,423	9,423	9,423
% of Normal Year	100%	100%	100%	100%	100%

### Projected Demand During Multiple Dry Years

**Table 13-14 2016-2020**

	2016	2017	2018	2019	2020
Demand (AF)	8,979	8,988	8,547	8,105	7,212
% of Normal Year	100%	100%	95%	90%	80%

### Supply & Demand Comparison During Multiple Dry Years 2016-2020

**Table 13-15**

	2016	2017	2018	2019	2020
Supply Totals (AF)	9,423	9,423	9,423	9,423	9,423
Demand Totals (AF)	8,979	8,988	8,547	8,105	7,212
Variance +/- (AF)	444	435	876	1,318	2,211
Supply > Demand	4.71%	4.62%	9.29%	13.98%	23.46%
Demand < Supply	4.94%	4.84%	10.25%	16.26%	30.66%

## Multiple Dry Year Supply 2021-2025

### Projected Supply During Multiple Dry Years

**Table 13-16 2021-2025**

	2021	2022	2023	2024	2025
Supply (AF)	9,423	9,423	9,423	9,423	9,423
% of Normal Year	100%	100%	100%	100%	100%

### Projected Demand During Multiple Dry Years

**Table 13-17 2021-2025**

	2021	2022	2023	2024	2025
Demand (AF)	9,024	9,033	8,589	8,145	7,248
% of Normal Year	100%	100%	95%	90%	80%

### Supply & Demand Comparison During Multiple Dry Years 2021-2025

**Table 13-18**

	2021	2022	2023	2024	2025
Supply Totals (AF)	9,423	9,423	9,423	9,423	9,423
Demand Totals (AF)	9,024	9,033	8,589	8,145	7,248
Variance +/- (AF)	399	390	833	1,277	2,175
Supply > Demand	4.23%	4.14%	8.84%	13.55%	23.08%
Demand < Supply	4.42%	4.32%	9.70%	15.68%	30.01%

# ***FINAL DRAFT***

## **Central Basin Municipal Water District**

### 2005 Urban Water Management Plan

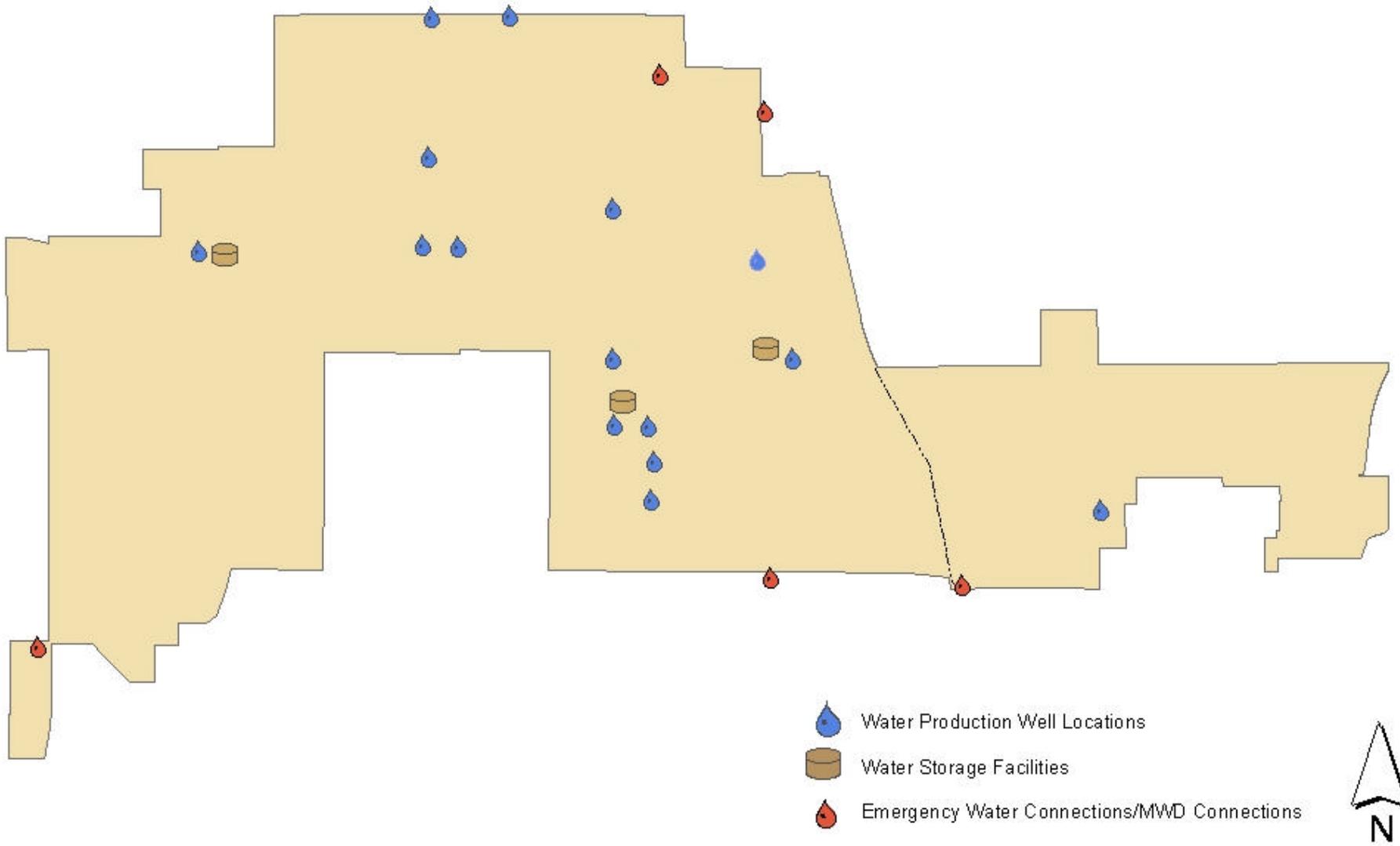
Prepared by:

Central Basin Municipal Water District  
17140 S. Avalon Blvd., Suite 210  
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October 2005



# City of Lakewood Water Production Facilities





## ATTACHMENT C

**CITY OF LAKEWOOD**  
**WATER CONSERVATION IN LANDSCAPING ORDINANCE**  
**Lakewood Municipal Code Section 8600 to Section 8613**  
**Ordinance No. 93-11**

**CHAPTER 6**  
**WATER CONSERVATION IN LANDSCAPING**

**8600. INTENT AND PURPOSES.** The purpose of this Chapter is to establish standards and procedures for the design, installation, and management of water conserving landscapes in order to utilize available plant, water, and land resources to avoid excessive landscape water demands while ensuring high quality landscape design.

**8601. APPLICABILITY.**

A. These requirements shall be applicable to new and rehabilitated landscaping for industrial, commercial, office and institutional developments; to parks and other public recreational areas; to multi-family residential; to PD common areas and to road medians and corridors.

B. These requirements shall not be applicable to:

1. Single Family Residences.
2. Any residential project with a lot size of 7,000 square feet or less.
3. Private open space areas in multiple family residential developments.
4. Cemeteries.
5. Registered Historical Sites.
6. Ecological restoration projects that do not require a permanent irrigation system.
7. Mined-land reclamation projects that do not require a permanent irrigation system.
8. Any project utilizing reclaimed water.

C. **EXEMPTIONS.** The Director may authorize exemptions to any of the design and improvement standards in this Chapter. Such exemptions may be granted if the Director finds that the proposed design or improvement is in substantial compliance with the purpose and intent of this Chapter.

**8602. DEFINITIONS.** Unless the context specifically indicates otherwise, the meaning of terms used in this Chapter shall be as defined in this section.

A. **APPLICATION RATE.** The rate of irrigation (inches/hour or gallons per minute) at which water is applied by an irrigation system.

- B. **AUTOMATIC CONTROL VALVE.** A valve in an irrigation system which is activated by an automatic electric or hydraulic control valve.
- C. **AUTOMATIC IRRIGATION SYSTEM.** An irrigation system that can be controlled without manual manipulation and which operates on a pre-set program.
- D. **CONTOUR.** A line drawn on a plan which connects all points of equal elevation above or below a known or assumed reference point.
- E. **CONTROLLER.** An automatic timing device with enclosure, which signals automatic valves to open and close on a pre-set program.
- F. **CYCLE.** In irrigation, the complete operation of a controller station.
- G. **DESIGNER.** A person qualified to practice landscape architecture and/or irrigation design.
- H. **DIRECTOR.** The Director of Community Development.
- I. **GRADING.** Earthwork performed to alter the natural contours of an area to be planted.
- J. **HYDROZONE.** A portion of the planting area having plants grouped according to water need.
- K. **INFILTRATION RATE.** The rate (inches per hour) in which water moves through soil under natural conditions.
- L. **IRRIGATION SYSTEM.** A complete connection of system components, including the water distribution network and the necessary irrigation equipment and downstream from the backflow prevention device.
- M. **PLANTING AREA.** The parcel area less building pad(s), driveway(s), patio(s), deck(s), walkway(s) and parking area(s). Planting area includes water bodies (i.e. fountains, ponds, lakes) and natural areas.
- N. **PLANTING PLAN.** A plan showing the location, spacing, numbers, container sizes of all plant materials including common and botanical names.
- O. **REHABILITATED LANDSCAPE.** Any planting area in which more than 50 percent of the existing landscape material is replaced or modified within any 12-month period in more than 50 percent of the planting area. Replacing and rehabilitating irrigation systems only is not considered rehabilitated landscape.
- P. **RECLAIMED WATER.** A treated or recycled waste water of quality suitable for nonpotable uses such as landscape irrigation; not intended for human consumption.
- Q. **STATION.** A position on an automatic irrigation controller which indicates the control point of automatic irrigation valves.
- R. **TURF.** A surface layer of earth containing grass with its roots.

**8603. LANDSCAPE PLAN - REQUIRED.** Landscape plans shall be prepared in accordance with the standards set forth herein and with the guidelines developed to help implement the provisions of this chapter; said guidelines are on file in the office of the Director of Community Development. Such plans

shall be submitted and approved prior to the issuance of building permits to comply with the requirements of this Chapter.

**8604. LANDSCAPE PERMIT - REQUIRED.** A permit for the installation of all new and rehabilitated landscape is required. Prior to the issuance of the permit, a Landscape Plan Application shall be submitted and approved in accordance with this Chapter.

**8605. LANDSCAPE PLAN - APPLICATION.** Prior to the issuance of a landscape permit, a Landscape Plan Application shall be submitted, reviewed and approved in accordance with this Chapter. Applications for Landscape Plan approval shall be filed by the owner of the affected property or his agent, or by a public entity to which the provisions of the Chapter apply. At the time the landscape plans are submitted the applicant shall pay a fee in accordance with City Council Resolution.

**8606. LANDSCAPE PLAN - APPROVAL.** No Landscape Plan Application shall be approved unless the Director finds that the plan compliments the design of the project, is consistent with the provisions of this chapter and applicable landscape guidelines; compatible with adjacent existing or future public landscaped areas, and with the elevations and appearances with existing structures located upon lots within the immediate vicinity of the lot which is the subject of such application.

**8607. LANDSCAPE PLAN - CONTENT.** Each Landscape Plan shall consist of the following elements including, but not limited to the following:

A. **WATER CONSERVATION CONCEPT STATEMENT.** Each landscape plan shall include a cover sheet referred to as the Water Conservation Concept Statement, which serves as a checklist to verify that the elements of the Landscape Plan have been completed and includes a brief narrative summary of the project. Said statement shall include calculations of the project's:

1. Maximum Applied Water Allowance.
2. Estimated Water Use.

B. **PLANTING PLAN.** The planting plan shall identify location, spacing, numbers, container sizes of all plant materials including common and botanical names, drawn on project base sheets in a clear and legible fashion in accordance with the guidelines established to implement the provisions of this Chapter.

C. **IRRIGATION PLAN.** The irrigation plan shall identify all components of the irrigation system drawn on project base sheets in a clear and legible fashion in accordance with the guidelines established to implement the provisions of this Chapter.

D. **ANNUAL IRRIGATION SCHEDULE.** The annual irrigation schedule shall be prepared with a minimum four-season water schedule. The irrigation schedule shall include run time and frequency of irrigation for each station, and shall be posted at the site.

E. **SOILS ASSESSMENT.** The landscape plan shall include an assessment of the soils which evaluates soil infiltration rate, soil texture, and agricultural suitability.

**8608. WATER FEATURES.** Decorative water features such as ponds, and waterfalls used in landscaped areas shall incorporate water recirculation systems, and shall be designed and operated to minimize water loss, and use reclaimed water if available and approved by the Health Department. Recreational pools and spas shall be designed to minimize water loss.

**8609. WATER METERS.** Each landscape irrigation system for new developments shall be metered for water use, separately from domestic and other non-landscape uses, except for single family homes or any project with a landscaped area of less than 3,000 square feet.

**8610. RECLAIMED WATER.** The installation of a separate water irrigation systems from domestic water supply (dual distribution systems) shall be required for new developments to allow for the current and future use of reclaimed water, unless during the plan check process it is determined that reclaimed water meeting all health standards is not available in the foreseeable future. The reclaimed water irrigation systems shall be designated and operated in accordance with local and state codes.

**8611. LANDSCAPE MAINTENANCE.** The property owner shall permanently and continuously maintain all landscaping and irrigation in a neat, clean and healthy condition, including removal of litter, proper pruning, mowing of lawns, weeding, fertilizing, and watering; and replacement of diseased and/or dead plants and malfunctioning or missing irrigation system components.

**8612. LANDSCAPE CERTIFICATE.** Upon completion of the installation of the landscaping, the designer shall certify that the landscape complies with all requirements of this Chapter. Certification shall be accomplished by completion of a Landscape Certificate on a form approved by the Director. Failure to submit a complete and accurate Landscape Certificate will delay final approval of the project and/or discontinue water service.

**8613. RELATIVE WATER REQUIREMENTS OF COMMONLY USED PLANTS.** The Director shall develop a list of plants that are commonly used in landscape designs with water requirement classifications of low, medium, and high to assist landscape designers to choose species of appropriate water demands to comply with this Chapter and to group species of similar water demands to facilitate efficient irrigation. This list shall be included in the landscape guidelines developed to implement the provisions of this Chapter.

Ordinance No. 93-11 adopted and approved September 28, 1993.

## ATTACHMENT D

**CITY OF LAKEWOOD  
WATER CONSERVATION ORDINANCE  
Lakewood Municipal Code Section 7511.1  
Ordinance No. 91-3 and Amended Ordinance No. 91-13**

**7511.1 AUTHORIZATION TO IMPLEMENT WATER CONSERVATION ORDINANCE.** The City Council is authorized to implement the provisions of the Water Conservation Ordinance upon the determination that a significant shortage in potable water supply is anticipated and implementation of the ordinance is necessary to protect the public health and safety. The implementation of the ordinance will occur upon the adoption of a resolution following a public hearing by the City Council. Such a public hearing shall be held to determine whether a water supply shortage exists and which conservation measures provided within the ordinance shall be implemented.

A. **GENERAL PROHIBITION.** No person shall make, cause, use or permit the use of water in the City of Lakewood in a manner contrary to any provision of this ordinance or in an amount in excess of that use permitted by any curtailment provisions then in effect pursuant to action taken by the City Council in accordance with the provisions of this section.

B. **RECLAIMED WATER USE.** No commercial water customer, including but not limited to commercial shopping centers, schools, office buildings, hospitals, industrial uses, and churches whose property line is located within a reasonable distance from the City of Lakewood's reclaimed water system shall continue to use potable water for the purpose of landscape irrigation after thirty (30) days written notice to connect to the City's reclaimed water system installed to the property line at the expense of the City. The connection shall be at the expense of the commercial water customer.

C. **IMPLEMENTATION OF GENERAL WATER CONSERVATION PRACTICES.** The City Council finds that water conservation should become a way of life for Lakewood water customers, and that water is a precious resource and should not be wasted even in times when water supply meets normal demand.

1. The following water conservation practices shall be implemented when water supply meets normal demand as declared by resolution of the City Council. The following water use practices shall be maintained and no person shall violate the same:

(a) Decorative fountains, or other structures using water for aesthetic purposes shall be shut off unless such fixture operates on a recirculating system.

(b) No person shall permit leaks or waste of water. All known leaks from indoor and outdoor plumbing fixtures shall be repaired promptly.

2. The following conservation practices are suggested when water supply meets normal demand:

(a) The use of water to wash walkways, driveways, parking areas and other hard surfaces should occur only as necessary for sanitary purposes and then only with a hose equipped with a positive shut off nozzle. Excessive water runoff into gutters is discouraged.

(b) Washing of vehicles and any other mobile equipment should be done only with a bucket or a hose equipped with a positive shut off nozzle for quick rinses. Commercial car washes are exempt from this provision.

(c) Voluntary water conservation field examination, herein referred to as water audits, are encouraged for all Lakewood water customers.

(d) The retrofit of water conserving devices, including but not limited to ultra low flow toilets and low flow showerheads, is encouraged.

(e) The installation of water efficient landscapes and irrigation devices, such as drip irrigation and moisture sensors, is encouraged.

**D. IMPLEMENTATION OF A VOLUNTARY PHASE WATER CONSERVATION PLAN.**

Measures instituted during a Voluntary Phase water supply shortage may be declared by Resolution of the City Council finding it necessary to conserve up to ten percent (10%) of the City's water supply. The following water conservation practices are recommended during a Voluntary Phase water shortage:

1. Water used to wash sidewalks, driveways, parking lots, building exteriors, streets and gutters should be minimized and should be limited to no more than two (2) times during a calendar month for the protection of the public health. The hose should be equipped with a positive shut off nozzle.

2. Drinking water should not be served at any restaurant, motel, cafe, cafeteria or other public eating establishment unless expressly requested.

3. Watering lawns and landscaped areas should be limited to between the hours of 5:00 p.m. and 9:00 a.m.

**E. IMPLEMENTATION OF A PHASE I MANDATORY WATER CONSERVATION PLAN.**

Measures instituted during a Phase I water supply shortage may be declared by Resolution of the City Council finding it necessary to conserve ten percent (10%) or greater of the City's water supply.

1. The following restrictions on the use of water shall be in effect during Phase I and any additional phases implemented during the course of a water shortage and no person shall fail to comply with the following:

(a) Water used to wash down driveways, sidewalks, parking lots, building exteriors, streets and gutters shall be limited to no more than two (2) times during a calendar month. The hose shall be equipped with a positive shut off nozzle. Water used in this manner to protect the public health is exempt from this provision.

(b) Washing of vehicles and any other mobile equipment shall be done only with a bucket or a hose equipped with a positive shutoff nozzle for quick rinses. Commercial car washes are exempt from this provision.

(c) Drinking water shall not be served to any patron in any restaurant, motel, cafe, cafeteria or other public eating establishment unless expressly requested.

(d) Leaks from indoor and outdoor plumbing fixtures shall be repaired promptly.

(e) Sprinklers shall be adjusted to minimize water runoff from landscape on to hardscape areas. No person shall allow excess water runoff after notice from

the City to desist therefrom. Excess water runoff is defined as water accumulation in the street, gutters, neighboring properties or in other amounts sufficient to cause a flow of water off of landscape areas on to hardscape areas.

2. The following water conservation practices are also recommended during a Phase I water supply shortage:

(a) Landscape irrigation is recommended during the early morning hours for no more than 10 minutes at a time. Irrigation should be avoided between the hours of 9:00 a.m. and 5:00 p.m. Landscape irrigation for commercial nurseries and growers shall be exempt from this provision. Those properties using reclaimed water are also exempt from this provision.

**F. IMPLEMENTATION OF PHASE II WATER CONSERVATION PLAN.** Measures instituted during a Phase II water supply shortage may be declared by Resolution of the City Council finding it necessary to conserve up to twenty percent (20%) of the City's water supply. The following additional restrictions shall be in effect during a Phase II water shortage:

1. Residential landscape shall be watered no more than three (3) times during a seven (7) day period for no more than ten (10) minutes at a time during the months of June, July, August and September, and prohibited during the hours of 9:00 a.m. and 5:00 p.m. Landscape irrigation shall be restricted to twice (2) during a seven (7) day period for no more than ten (10) minutes at a time during the months of October, November, December, January, February, March, April and May, and prohibited during the hours of 9:00 a.m. and 5:00 p.m. Landscape irrigation for commercial nurseries and growers, and properties using reclaimed water shall be exempt from this provision.

2. Non-residential water customers with a consumption in excess of 25,000 cubic feet in any billing period during the prior year, shall prepare a written water conservation plan within sixty (60) days of the effective date of a declared water shortage. The customer shall submit said plan to the Director of Water Resources for approval. The customer shall then implement the approved plan to meet the specific conservation goals stated therein.

**G. IMPLEMENTATION OF PHASE III WATER CONSERVATION PLAN.** Measures instituted during a Phase III water supply shortage shall be declared by Resolution of the City Council finding it necessary to conserve up to thirty percent (30%) of the City's water supply. The following additional restrictions shall be in effect during a Phase III water shortage:

1. Residential landscape shall be watered no more than two (2) times during a seven (7) day period during the months of June, July, August and September, and prohibited during the hours of 8:00 a.m. and 8:00 p.m. Landscape irrigation shall be restricted to once during a seven (7) day period during the months of October, November, December, January, February, March, April and May, and prohibited during the hours of 9:00 a.m. and 5:00 p.m.

2. Irrigation of commercial nurseries and growers shall be restricted to no more than three (3) times during a seven (7) day period. Irrigation shall be prohibited during the hours of 9:00 a.m. and 4:00 p.m. Those properties using reclaimed water are exempt from this provision.

**H. IMPLEMENTATION OF PHASE IV MANDATORY WATER CONSERVATION PLAN.** Measures instituted during a Phase IV water supply shortage shall be declared by Resolution of the City Council finding it necessary to conserve up to forty percent (40%) of the City's water supply. The following additional restrictions shall be in effect during a Phase IV water supply shortage:

1. Residential landscape shall be watered no more than one (1) time during a seven (7) day period during the months of June, July, August and September, and prohibited during the hours of 8:00 a.m. and 8:00 p.m. Landscape irrigation shall be restricted to one (1) time during a fourteen (14) day period during the months of October, November, December, January, February, March, April and May, and prohibited during the hours of 9:00 a.m. and 5:00 p.m.

2. Irrigation of commercial nurseries and growers shall be restricted to no more than twice (2) during a seven (7) day period. The irrigation shall be prohibited during the hours of 9:00 a.m. and 4:00 p.m.

**I. IMPLEMENTATION OF PHASE V MANDATORY WATER CONSERVATION PLAN.**

Measures instituted during a Phase V water supply shortage shall be declared by Resolution of the City Council finding it necessary to conserve up to fifty percent (50%) of the City's water supply. The following additional restrictions shall be in effect during a Phase V water supply shortage:

1. Residential landscaping shall be restricted to watering only permanent trees and shrubs with a hand carried bucket or drip irrigation system one (1) time during a seven (7) day period during the months of June, July, August and September, and prohibited during the hours of 8:00 a.m. and 8:00 p.m. Landscape irrigation shall be restricted to watering only permanent trees and shrubs with a hand carried bucket or drip irrigation system one (1) time during a fourteen (14) day period during the months of October, November, December, January, February, March, April and May, and prohibited during the hours of 9:00 a.m. and 5:00 p.m. A drip irrigation system shall be defined as an irrigation system consisting of individual emitters installed at permanent plantings with a capacity to emit no more than one (1) gallon of water per hour of operation.

2. Irrigation of commercial nurseries and growers shall be restricted to one (1) time during a seven (7) day period and prohibited during the hours of 9:00 a.m. and 6:00 p.m. Those properties using reclaimed water are exempt from this provision.

**J. EMERGENCY RATE SURCHARGE TO OBTAIN WATER CONSERVATION.**

1. At such time that the City Council determines that a specific conservation effort is required, the City Council shall adopt a resolution declaring the specific phase water conservation. The corresponding rate structure as contained in Resolution No. 91-68 shall take effect within thirty (30) days of such determination.

2. Subject to revenue bond covenants, these funds shall be used to offset revenue loss due to reduced water consumption and pay for such conservation measures as approved by the City Council.

**K. RELIEF FROM COMPLIANCE.** Any person to whom this ordinance applies may file for relief from any or all provisions in this ordinance. The Director of Water Resources or his designee shall develop and implement procedures necessary to consider a customer's application for relief. No relief shall be granted except upon proof of reasonable inability to comply with the provisions of this section, or upon proof of other reasonable conservation alternatives which will achieve conservation measures sought by this section, or upon proof of substantial hardship outweighing the benefits this section would otherwise provide. Commercial customers shall submit a water conservation plan with the request for relief. The decision of the Director of Water Resources or his designee shall be final unless written appeal to the City Council setting forth the grounds of appeal is filed with the City Clerk within thirty (30) days of the mailing or delivery to said person of the written decision of the Director of Water Resources.

The decision of the Director of Water Resources or his designee shall be forwarded in writing no later than fifteen (15) days after the receipt of the application for relief unless additional time has been requested.

**L. FAILURE TO COMPLY WITH MANDATORY WATER CONSERVATION MEASURES.**

In addition to the provisions of Section 7511.2, any person who fails to comply with any of the mandatory water conservation measures imposed by the implementation of this section shall be subject to an improper water users fee or charge as hereinafter set forth:

1. The following charges are not imposed as a penalty but as a charge for excessive or improper use of water. The charges are necessary in order to recover the reasonable cost of enforcement of the mandatory water provisions and in order to obtain the goals of the water conservation measures contained in this section:

(a) First Violation. The City of Lakewood shall issue a written warning to the customer for the first violation.

(b) Second and Third Violations. The City of Lakewood shall issue a written notice and assess an improper water use fee of \$25.00. If the fee is not paid in full within fifteen (15) days of issuance the amount will be added to the customer's bi-monthly water bill.

(c) Fourth Violation. The City of Lakewood shall issue a written notice, charge an improper water use fee of \$75.00 and install a flow restricting device on the customer's water service for a period of not less than twenty-four (24) hours. Such flow restricting device shall reduce water flow to one (1) gallon per minute for metered services one and one half inch (1 ½") or under. Similar devices will be placed on larger meters. The fee shall be paid prior to the resumption of normal water service.

(d) Fifth Violation. The City of Lakewood shall issue a written notice, charge an improper water use fee of \$75.00 and install a flow restricting device on the customer's water service for a period of not less than forty-eight (48) hours. Such flow restriction device shall reduce water flow to one (1) gallon per minute for the metered service, one and one-half inch (1 ½") or under. A similar device shall be placed on larger meters. The fee shall be paid prior to resumption of normal water service.

2. Notification of Violation. Notice of violation shall be given in writing in one of the following methods:

(a) Personal delivery of the notice to the customer.

(b) If the customer is absent from or unavailable at the premises at which the violation occurred, the notice can be left with a responsible person at the premises and a copy mailed to the customer at the billing address.

(c) If a responsible person is not available at the premises at which the violation occurred, then the notice can be affixed in a conspicuous place on the premises and a copy mailed to the customer at the billing address.

Notification shall include a description of the facts in regard to the violation, a statement of the possible penalties for each violation and the statement of the customer's right to a hearing on the merits of the violation as stated in Section M.

**M. HEARING FOR VIOLATIONS.** Any customer receiving a fourth (4) or subsequent violation notice shall be entitled to a hearing with the City Administrator or his designee within

fifteen (15) days of delivery of the violation notice. The following steps shall be taken to process a request for a hearing:

1. The customer shall provide a written request for a hearing. A prompt request for hearing shall automatically stay installation of a flow restricting device or shut off on the customer's water service until the decision is rendered by the City Administrator or his designee.
2. The customer's request for a hearing shall not stay the imposition of a fee. If it is determined that a fee is wrongly assessed, the City will refund any fee paid by the customer.
3. The decision of the City Administrator or his designee shall be final except for judicial review. Any and all measures of the provisions stated herein shall be implemented throughout the judicial appeal process.

N. **ADDITIONAL WATER CONSERVATION MEASURES.** The City Council may order implementation of further water conservation measures in addition to those set forth in this Section. Such measures shall be instituted by the City Council with the adoption of a resolution.

O. **PUBLIC HEALTH AND SAFETY SHALL NOT BE AFFECTED.** No provision of this section shall be construed to require the City to curtail the supply of water to any customer when such water is required by that customer to maintain an adequate level of public health and safety.

Ordinance 91-3 adopted and approved February 26, 1991.

Ordinance 91-13 adopted and approved October 22, 1991.

**City of Lakewood Department of Water Resources  
Residential Water Audit Checklist**

Name \_\_\_\_\_ Telephone \_\_\_\_\_

Address \_\_\_\_\_ Own Home  Rent Home

\_\_\_\_\_ Last Water Bill \_\_\_\_\_ Hcf \_\_\_\_\_

Review Billing History with Customer YES  NO   
Comment \_\_\_\_\_

Instruction on Reading Water Bill YES  NO

Instruction on Reading Water Meter YES  NO   
Comment \_\_\_\_\_

**Leaks**

Shut Off All Water on Premises for 15 minutes to check for leaks. YES  NO

Comment \_\_\_\_\_

Current Read (Including Sweep Hand) \_\_\_\_\_

Comment \_\_\_\_\_

If movement of sweep hand occurs close the house valve. Any apparent movement of sweep hand on water to determine if leak is internal or external.

INTERNAL  EXTERNAL

Comment \_\_\_\_\_

Meter Read after 15 minutes \_\_\_\_\_

Any apparent movement of sweep hand on water meter? YES  NO

Comment \_\_\_\_\_

**OUTSIDE WATER USE**

**Hardscape**

Swimming Pool YES  NO

Swimming Pool Cover YES  NO

Pool Temperature \_\_\_\_\_

Spa YES  NO

Spa Cover YES  NO

Spa Temperature \_\_\_\_\_

Fountain YES  NO

Recirculating Water YES  NO

Comment \_\_\_\_\_

### Landscape

Turf	Type _____		
	% of Property _____		
	Height of Turf _____		
	Moisture of Turf		
	Aerated or Dethatched	YES <input type="checkbox"/>	NO <input type="checkbox"/>
	Date of Last Aeration or Dethatching	YES <input type="checkbox"/>	NO <input type="checkbox"/>
Trees and Shrubs	Type _____		
	Number on Property _____		
	Size		
	Small _____		
	Medium _____		
	Large _____		
	Mulch at Base of Shrubs	YES <input type="checkbox"/>	NO <input type="checkbox"/>
Flowering Plants	Type _____		
	Number on Property _____		
	Moisture Around Plants	WET <input type="checkbox"/>	DRY <input type="checkbox"/>
	Mulch at Base of Plants	YES <input type="checkbox"/>	NO <input type="checkbox"/>
Comment	_____		

### Landscape Maintenance

Irrigation Practices			
Automatic Water System	Manual System	YES <input type="checkbox"/>	Automatic System <input type="checkbox"/>
Checked Irrigation Timers		YES <input type="checkbox"/>	NO <input type="checkbox"/>
Watering Frequency	_____		
Time of Day Watering Occurs	_____		
Length of Watering Time	_____		
Volume of Sprinkler Heads	_____		
Number of Sprinkler Heads	_____		
Checked for Over Spray		YES <input type="checkbox"/>	NO <input type="checkbox"/>
Comment	_____		
Checked for Broken Sprinkler Heads		YES <input type="checkbox"/>	NO <input type="checkbox"/>
Comment	_____		
Lo Flow Sprinkler Heads		YES <input type="checkbox"/>	NO <input type="checkbox"/>
Comment	_____		
Drip Irrigation System		YES <input type="checkbox"/>	NO <input type="checkbox"/>
Comment	_____		
	Watering Frequency	_____	
	Time of Day Watering Occurs	_____	
	Size of Emitters	_____	
Moisture Sensing System		YES <input type="checkbox"/>	NO <input type="checkbox"/>
Comment	_____		

**INDOOR WATER USE****Kitchen**

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Faucet Flow Restrictor	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Dishwasher	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Dishwasher with Short Cycle	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Water Filtering System	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Garbage Disposal	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Comments	_____			

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**Laundry**

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Washing Machine with Short Cycle	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Water Softener	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Comments	_____			

---

**Bathroom**

---

Toilet				
Checked for Leaks	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Use per Flush	7-5 gals.	<input type="checkbox"/>	3.5 gals.	<input type="checkbox"/>
			1.3 gals.	<input type="checkbox"/>
Faucet Flow Restrictor	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Bathtub				
	Normal Fill	_____ Gallons		
Shower				
Water Conserving Flow Restrictor	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
Bidet	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>
	Water Used per Use	_____ Gallons		
Comment	_____			

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## ATTACHMENT F

### RESOLUTION NO. 91-68

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LAKEWOOD AMENDING RESOLUTION NO. 3150 PERTAINING TO WATER RATES.

WHEREAS, the City Council has adopted a water conservation plan by Ordinance No. 91-3; and amended by Ordinance No. 91-13,

WHEREAS, the implementation of the aforementioned measures requires a readjustment of water rates and charges and the imposition of certain water conservation rate structure; and

WHEREAS, this Resolution shall be effective following a public hearing and two (2) readings thereof.

NOW THEREFORE, THE CITY COUNCIL OF THE CITY OF LAKEWOOD DOES RESOLVE AS FOLLOWS:

SECTION 1. Resolution No. 3150, entitled "A Resolution of the City Council of the City of Lakewood Establishing Rules, Regulations and Charges Governing Water Service, and Repealing Resolutions No. 828, 950, 1858, 1829 and, "as amended, is hereby amended as provided in this Resolution, and as amended is reaffirmed in all other aspects.

SECTION 2. Resolution No. 91-13 entitled "A Resolution of the City Council of the City of Lakewood Amending Resolution No. 3150 Pertaining to Water Rates and Implementing an Emergency Water Rate Surcharge" is hereby repealed.

SECTION 3. Schedule I of Section 10 of Resolution No. 3150, pertaining to General Water Service Rates, is hereby amended by amending subparagraph (3), pertaining to monthly rates to read as indicated below. Such rates are enacted to encourage water conservation and, as such, present a separate rate structure for each phase of water conservation as determined by the City Council. Each Rate Phase shall remain in effect until such time that the City Council, by resolution, declares that the City of Lakewood shall move to another water conservation phase, as set forth in Section 7511.1 of the Lakewood Municipal Code.

#### Section 10 (iii) Quantitative Charge

The quantitative rate for all water delivered in excess of the Minimum Charge Entitlement shall be as follows:

- a) Voluntary Phase of Conservation Plan
  - 1) Single Family Residential
    - a. Tier 1: Water used in excess of 350 cubic feet but under 5,400 cubic feet per month is charged at the normal quantitative rate.
    - b. Tier 2: Water used in excess of 5,400 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
  - 2) Duplex Residential Units
    - a. Tier 1: Water used under 4,800 cubic feet per month is charged at the normal quantitative rate.

- b. Tier 2: Water used in excess of 4,800 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- 3) Multiple Residential Units
- a. Tier 1: Water used under 2,400 cubic feet per unit per month is charged at the normal quantitative rate.
  - b. Tier 2: Water used in excess of 2,400 cubic feet per unit per month is charged at one and one-half (1.5) times the normal quantitative rate.
- 4) Commercial, Industrial or Use Other Than Residential
- a. Auto Related Business.
    - 1. Tier 1: Water used under 7,900 cubic feet per month is charged at the normal quantitative rate.
    - 2. Tier 2: Water used in excess of 7,900 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
  - b. Church.
    - 1. Tier 1: Water used under 15,000 cubic feet per month is charged at the normal quantitative rate.
    - 2. Tier 2: Water used in excess of 15,000 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
  - c. Medical/Dental Facility.
    - 1. Tier 1: Water used under 20,400 cubic feet per month is charged at the normal quantitative rate.
    - 2. Tier 2: Water used in excess of 20,400 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
  - d. Commercial Nurseries and Growers.
    - 1. Tier 1: Water used under 66,750 cubic feet per month is charged at the normal quantitative rate.
    - 2. Tier 2: Water used in excess of 66,750 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
  - e. Restaurant, Lounge, Tavern.
    - 1. Tier 1: Water used under 34,400 cubic feet per month is charged at the normal quantitative rate.
    - 2. Tier 2: Water used in excess of 34,400 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

- f. School: Elementary School.
  - 1. Tier 1: Water used under 55,400 cubic feet per month is charged at the normal quantitative rate.
  - 2. Tier 2: Water used in excess of 55,400 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- g. School: High School.
  - 1. Tier 1: Water used under 325,400 cubic feet per month is charged at the normal quantitative rate.
  - 2. Tier 2: Water used in excess of 325,400 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- h. Small Food Store.
  - 1. Tier 1: Water used under 5,500 cubic feet per month is charged at the normal quantitative rate.
  - 2. Tier 2: Water used in excess of 5,500 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- i. Supermarket.
  - 1. Tier 1: Water used under 137,500 cubic feet per month is charged at the normal quantitative rate.
  - 2. Tier 2: Water used in excess of 137,500 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- j. Theaters.
  - 1. Tier 1: Water used under 31,400 cubic feet per month is charged at the normal quantitative rate.
  - 2. Tier 2: Water used in excess of 31,400 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- k. Auto/Car Wash.
  - 1. Tier 1: Water used under 66,250 cubic feet per month is charged at the normal quantitative rate.
  - 2. Tier 2: Water used in excess of 66,250 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- l. Fast Food: High Volume.

1. Tier 1: Water used under 21,000 cubic feet per month is charged at the normal quantitative rate.
  2. Tier 2: Water used in excess of 21,000 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- m. Fast Food: Small.
1. Tier 1: Water used under 4,250 cubic feet per month is charged at the normal quantitative rate.
  2. Tier 2: Water used in excess of 4,250 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- n. Department Store.
1. Tier 1: Water used under 70,650 cubic feet per month is charged at the normal quantitative rate.
  2. Tier 2: Water used in excess of 70,650 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- o. Commercial Small.
1. Tier 1: Water used under 2,500 cubic feet per month is charged at the normal quantitative rate.
  2. Tier 2: Water used in excess of 2,500 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- p. Commercial Large.
1. Tier 1: Water used under 22,900 cubic feet per month is charged at the normal quantitative rate.
  2. Tier 2: Water used in excess of 22,900 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- q. Motels.
1. Tier 1: Water used under 1,150 cubic feet per month is charged at the normal quantitative rate.
  2. Tier 2: Water used in excess of 1,150 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- r. Exemptions from the Water Conservation Rate Structure.
1. Car washes with properly operating recycling equipment.
  2. Hospitals.

3. Facilities using reclaimed water for irrigation of landscape.

s. Water Conservation Rate Structure for Failing to Connect to the City's Reclaimed Water System. Commercial water customers whose property line is located within a reasonable distance from the City's reclaimed water system that fail to connect to the aforementioned system shall be charged a water conservation rate of four (4) times the normal quantitative rate.

b) Phase I Mandatory Conservation

1) Single Family Residential

- a. Tier 1: Water used in excess of 350 cubic feet but under 4,050 cubic feet per month is charged at the normal quantitative rate.
- b. Tier 2: Water used in excess of 4,050 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

2) Duplex Residential Units

- a. Tier 1: Water used under 3,600 cubic feet per month is charged at the normal quantitative rate.
- b. Tier 2: Water used in excess of 3,600 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

3) Multiple Residential Units

- a. Tier 1: Water used under 1,800 cubic feet per unit per month is charged at the normal quantitative rate.
- b. Tier 2: Water used in excess of 1,800 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

4) Commercial, Industrial or Use Other Than Residential

a. Auto Related Business.

- 1. Tier 1: Water used under 6,300 cubic feet per month is charged at the normal quantitative rate.
- 2. Tier 2: Water used in excess of 6,300 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

b. Church.

- 1. Tier 1: Water used under 12,000 cubic feet per month is charged at the normal quantitative rate.
- 2. Tier 2: Water used in excess of 12,000 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

c. Medical/Dental Facility.

1. Tier 1: Water used under 16,300 cubic feet per month is charged at the normal quantitative rate.
  2. Tier 2: Water used in excess of 16,300 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- d. Commercial Nurseries and Growers.
1. Tier 1: Water used under 53,400 cubic feet per month is charged at the normal quantitative rate.
  2. Tier 2: Water used in excess of 53,400 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- e. Restaurant, Lounge, Tavern.
1. Tier 1: Water used under 27,500 cubic feet per month is charged at the normal quantitative rate.
  2. Tier 2: Water used in excess of 27,500 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- f. School: Elementary School.
1. Tier 1: Water used under 44,300 cubic feet per month is charged at the normal quantitative rate.
  2. Tier 2: Water used in excess of 44,300 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- g. School: High School.
1. Tier 1: Water used under 260,300 cubic feet per month is charged at the normal quantitative rate.
  2. Tier 2: Water used in excess of 260,000 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- h. Small Food Store.
1. Tier 1: Water used under 4,400 cubic feet per month is charged at the normal quantitative rate.
  2. Tier 2: Water used in excess of 4,400 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- i. Supermarket.
1. Tier 1: Water used under 110,000 cubic feet per month is charged at the normal quantitative rate.

2. Tier 2: Water used in excess of 110,000 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- j. Theaters.
1. Tier 1: Water used under 25,100 cubic feet per month is charged at the normal quantitative rate.
  2. Tier 2: Water used in excess of 25,100 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- k. Auto/Car Wash.
1. Tier 1: Water used under 53,000 cubic feet per month is charged at the normal quantitative rate.
  2. Tier 2: Water used in excess of 53,000 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- l. Fast Food: High Volume.
1. Tier 1: Water used under 16,800 cubic feet per month is charged at the normal quantitative rate.
  2. Tier 2: Water used in excess of 16,800 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- m. Fast Food: Small.
1. Tier 1: Water used under 3,400 cubic feet per month is charged at the normal quantitative rate.
  2. Tier 2: Water used in excess of 3,400 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- n. Department Store.
1. Tier 1: Water used under 56,500 cubic feet per month is charged at the normal quantitative rate.
  2. Tier 2: Water used in excess of 56,500 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- o. Commercial Small.
1. Tier 1: Water used under 2,000 cubic feet per month is charged at the normal quantitative rate.
  2. Tier 2: Water used in excess of 2,000 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

- p. Commercial Large.
  - 1. Tier 1: Water used under 18,300 cubic feet per month is charged at the normal quantitative rate.
  - 2. Tier 2: Water used in excess of 18,300 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- q. Motels.
  - 1. Tier 1: Water used under 900 cubic feet per month is charged at the normal quantitative rate.
  - 2. Tier 2: Water used in excess of 900 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- r. Exemptions from the Water Conservation Rate Structure.
  - 1. Car washes with properly operating recycling equipment.
  - 2. Hospitals.
  - 3. Facilities using reclaimed water for irrigation of landscape.
- s. Water Conservation Rate Structure for Failing to Connect to the City's Reclaimed Water System. Commercial water customers whose property line is located within a reasonable distance from the City's reclaimed water system that fail to connect to the aforementioned system shall be charged a water conservation rate of four (4) times the normal quantitative rate.

c) Phase II Mandatory Phase

- 1) Single Family Residential
  - a. Tier 1: Water used in excess of 350 cubic feet but under 2,700 cubic feet per month is charged at the normal quantitative rate.
  - b. Tier 2: Water used in excess of 2,700 cubic feet but under 4,050 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
  - c. Tier 3: Water used in excess of 4,050 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- 2) Duplex Residential Units
  - a. Tier 1: Water used under 2,400 cubic feet per month is charged at the normal quantitative rate.

- b. Tier 2: Water used in excess of 2,400 cubic feet but under 3,600 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
- c. Tier 3: Water used in excess of 3,600 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

3) Multiple Residential Units

- a. Tier 1: Water used under 1,200 cubic feet per unit per month is charged at the normal quantitative rate.
- b. Tier 2: Water used in excess of 1,200 cubic feet but under 1,800 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
- c. Tier 3: Water used in excess of 1,800 cubic feet per unit per month is charged at one and one-half (1.5) times the normal quantitative rate.

4) Commercial, Industrial or Use Other Than Residential

a. Auto Related Business.

- 1. Tier 1: Water used under 4,750 cubic feet per month is charged at the normal quantitative rate.
- 2. Tier 2: Water used in excess of 4,750 cubic feet but under 6,300 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
- 3. Tier 3: Water used in excess of 6,300 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

b. Church.

- 1. Tier 1: Water used under 9,000 cubic feet per month is charged at the normal quantitative rate.
- 2. Tier 2: Water used in excess of 9,000 cubic feet but under 12,000 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
- 3. Tier 3: Water used in excess of 12,000 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

c. Medical/Dental Facility.

- 1. Tier 1: Water used under 12,250 cubic feet per month is charged at the normal quantitative rate.
- 2. Tier 2: Water used in excess of 12,250 cubic feet but under 16,300 cubic feet per month is charged at one

and one-quarter (1.25) times the normal quantitative rate.

3. Tier 3: Water used in excess of 16,300 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

d. Commercial Nurseries and Growers.

1. Tier 1: Water used under 40,050 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 40,050 cubic feet but under 53,400 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 53,400 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

e. Restaurant, Lounge, Tavern.

1. Tier 1: Water used under 20,650 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 20,650 cubic feet but under 27,500 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 27,500 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

f. School: Elementary School.

1. Tier 1: Water used under 33,250 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 33,250 cubic feet but under 44,300 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 44,300 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

g. School: High School.

1. Tier 1: Water used under 195,250 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 195,350 cubic feet but under 260,300 cubic feet per month is charged at one

and one-quarter (1.25) times the normal quantitative rate.

3. Tier 3: Water used in excess of 260,300 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

h. Small Food Store.

1. Tier 1: Water used under 3,300 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 3,300 cubic feet but under 4,400 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 4,400 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

i. Supermarket.

1. Tier 1: Water used under 82,500 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 82,500 cubic feet but under 110,000 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 110,000 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

j. Theaters.

1. Tier 1: Water used under 18,850 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 18,850 cubic feet but under 25,100 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 25,100 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

k. Auto/Car Wash.

1. Tier 1: Water used under 39,750 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 39,750 cubic feet but under 53,000 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.

3. Tier 3: Water used in excess of 53,000 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
- I. Fast Food: High Volume.
    1. Tier 1: Water used under 12,600 cubic feet per month is charged at the normal quantitative rate.
    2. Tier 2: Water used in excess of 12,600 cubic feet but under 16,800 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
    3. Tier 3: Water used in excess of 16,800 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
  - m. Fast Food: Small.
    1. Tier 1: Water used under 2,550 cubic feet per month is charged at the normal quantitative rate.
    2. Tier 2: Water used in excess of 2,550 cubic feet but under 3,400 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
    3. Tier 3: Water used in excess of 3,400 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
  - n. Department Store.
    1. Tier 1: Water used under 42,400 cubic feet per month is charged at the normal quantitative rate.
    2. Tier 2: Water used in excess of 42,400 cubic feet but under 56,500 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
    3. Tier 3: Water used in excess of 56,500 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
  - o. Commercial Small.
    1. Tier 1: Water used under 1,500 cubic feet per month is charged at the normal quantitative rate.
    2. Tier 2: Water used in excess of 1,500 cubic feet but under 2,000 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.

3. Tier 3: Water used in excess of 2,000 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

p. Commercial Large.

1. Tier 1: Water used under 13,750 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 13,750 cubic feet but under 18,300 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 18,300 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

q. Motels.

1. Tier 1: Water used under 700 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 700 cubic feet but under 900 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 900 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

r. Exemptions from the Water Conservation Rate Structure.

1. Car washes with properly operating recycling equipment.
2. Hospitals.
3. Facilities using reclaimed water for irrigation of landscape.

- s. Water Conservation Rate Structure for Failing to Connect to the City's Reclaimed Water System. Commercial water customers whose property line is located within a reasonable distance from the City's reclaimed water system that fail to connect to the aforementioned system shall be charged a water conservation rate of four (4) times the normal quantitative rate.

d) Phase III Mandatory Phase

1) Single Family Residential

- a. Tier 1: Water used in excess of 350 cubic feet but under 1,350 cubic feet per month is charged at the normal quantitative rate.

- b. Tier 2: Water used in excess of 1,350 cubic feet but under 2,700 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
- c. Tier 3: Water used in excess of 2,700 cubic feet but under 4,050 per month is charged at one and one-half (1.5) times the normal quantitative rate.
- d. Tier 4: Water used in excess of 4,050 cubic feet but under 5,400 cubic feet per month is charged at two (2) times the normal quantitative rate.
- e. Tier 5: Water used in excess of 5,400 per month is charged at two and one-half (2.5) times the normal quantitative rate.

2) Duplex Residential Units

- a. Tier 1: Water used under 1,200 cubic feet per month is charged at the normal quantitative rate.
- b. Tier 2: Water used in excess of 1,200 cubic feet but under 2,400 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
- c. Tier 3: Water used in excess of 2,400 cubic feet but under 3,600 per month is charged at one and one-half (1.5) times the normal quantitative rate.
- d. Tier 4: Water used in excess of 3,600 cubic feet but under 4,800 cubic feet per month is charged at two (2) times the normal quantitative rate.
- e. Tier 5: Water used in excess of 4,800 per month is charged at two and one-half (2.5) times the normal quantitative rate.

3) Multiple Residential Units

- a. Tier 1: Water used under 600 cubic feet per unit per month is charged at the normal quantitative rate.
- b. Tier 2: Water used in excess of 600 cubic feet but under 1,200 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
- c. Tier 3: Water used in excess of 1,200 cubic feet but under 1,800 per month is charged at one and one-half (1.5) times the normal quantitative rate.
- d. Tier 4: Water used in excess of 1,800 cubic feet but under 2,400 cubic feet per month is charged at two (2) times the normal quantitative rate.
- e. Tier 5: Water used in excess of 2,400 per month is charged at two and one-half (2.5) times the normal quantitative rate.

4) Commercial, Industrial or Use Other Than Residential

- a. Auto Related Business.

1. Tier 1: Water used under 3,150 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 3,150 cubic feet but under 4,750 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 4,750 cubic feet but under 6,300 per month is charged at one and one-half (1.5) times the normal quantitative rate.
4. Tier 4: Water used in excess of 6,300 cubic feet but under 7,900 cubic feet per month is charged at two (2) times the normal quantitative rate.
5. Tier 5: Water used in excess of 7,900 per month is charged at two and one-half (2.5) times the normal quantitative rate.

b. Church.

1. Tier 1: Water used under 6,000 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 6,000 cubic feet but under 9,000 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 9,000 cubic feet but under 1,200 per month is charged at one and one-half (1.5) times the normal quantitative rate.
4. Tier 4: Water used in excess of 1,200 cubic feet but under 1,500 cubic feet per month is charged at two (2) times the normal quantitative rate.
5. Tier 5: Water used in excess of 1,500 per month is charged at two and one-half (2.5) times the normal quantitative rate.

c. Medical/Dental Facility.

1. Tier 1: Water used under 8,150 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 8,150 cubic feet but under 12,250 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 12,250 cubic feet but under 16,300 per month is charged at one and one-half (1.5) times the normal quantitative rate.

4. Tier 4: Water used in excess of 16,300 cubic feet but under 20,400 cubic feet per month is charged at two (2) times the normal quantitative rate.
5. Tier 5: Water used in excess of 20,400 per month is charged at two and one-half (2.5) times the normal quantitative rate.

d. Commercial Nurseries and Growers.

1. Tier 1: Water used under 26,700 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 26,700 cubic feet but under 40,050 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 40,050 cubic feet but under 53,400 per month is charged at one and one-half (1.5) times the normal quantitative rate.
4. Tier 4: Water used in excess of 53,400 cubic feet but under 66,750 cubic feet per month is charged at two (2) times the normal quantitative rate.
5. Tier 5: Water used in excess of 66,750 per month is charged at two and one-half (2.5) times the normal quantitative rate.

e. Restaurant, Lounge, Tavern.

1. Tier 1: Water used under 13,750 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 13,750 cubic feet but under 20,650 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 20,650 cubic feet but under 27,500 per month is charged at one and one-half (1.5) times the normal quantitative rate.
4. Tier 4: Water used in excess of 27,500 cubic feet but under 34,400 cubic feet per month is charged at two (2) times the normal quantitative rate.
5. Tier 5: Water used in excess of 34,400 per month is charged at two and one-half (2.5) times the normal quantitative rate.

f. School: Elementary School.

1. Tier 1: Water used under 22,150 cubic feet per month is charged at the normal quantitative rate.

2. Tier 2: Water used in excess of 22,150 cubic feet but under 33,250 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 33,250 cubic feet but under 44,300 per month is charged at one and one-half (1.5) times the normal quantitative rate.
4. Tier 4: Water used in excess of 44,300 cubic feet but under 55,400 cubic feet per month is charged at two (2) times the normal quantitative rate.
5. Tier 5: Water used in excess of 55,400 per month is charged at two and one-half (2.5) times the normal quantitative rate.

g. School: High School.

1. Tier 1: Water used under 130,150 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 130,150 cubic feet but under 195,250 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 195,250 cubic feet but under 260,300 per month is charged at one and one-half (1.5) times the normal quantitative rate.
4. Tier 4: Water used in excess of 260,300 cubic feet but under 325,400 cubic feet per month is charged at two (2) times the normal quantitative rate.
5. Tier 5: Water used in excess of 325,400 per month is charged at two and one-half (2.5) times the normal quantitative rate.

h. Small Food Store.

1. Tier 1: Water used under 2,200 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 2,200 cubic feet but under 3,300 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 3,300 cubic feet but under 4,400 per month is charged at one and one-half (1.5) times the normal quantitative rate.
4. Tier 4: Water used in excess of 4,400 cubic feet but under 5,500 cubic feet per month is charged at two (2) times the normal quantitative rate.

5. Tier 5: Water used in excess of 5,500 per month is charged at two and one-half (2.5) times the normal quantitative rate.

i. Supermarket.

1. Tier 1: Water used under 55,000 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 55,000 cubic feet but under 82,500 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 82,500 cubic feet but under 110,000 per month is charged at one and one-half (1.5) times the normal quantitative rate.
4. Tier 4: Water used in excess of 110,000 cubic feet but under 137,500 cubic feet per month is charged at two (2) times the normal quantitative rate.
5. Tier 5: Water used in excess of 137,500 per month is charged at two and one-half (2.5) times the normal quantitative rate.

j. Theaters.

1. Tier 1: Water used under 12,550 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 12,550 cubic feet but under 18,850 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 18,850 cubic feet but under 25,100 per month is charged at one and one-half (1.5) times the normal quantitative rate.
4. Tier 4: Water used in excess of 25,100 cubic feet but under 31,400 cubic feet per month is charged at two (2) times the normal quantitative rate.
5. Tier 5: Water used in excess of 31,400 per month is charged at two and one-half (2.5) times the normal quantitative rate.

k. Auto/Car Wash.

1. Tier 1: Water used under 26,500 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 26,500 cubic feet but under 39,750 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.

3. Tier 3: Water used in excess of 39,750 cubic feet but under 53,000 per month is charged at one and one-half (1.5) times the normal quantitative rate.
4. Tier 4: Water used in excess of 53,000 cubic feet but under 66,250 cubic feet per month is charged at two (2) times the normal quantitative rate.
5. Tier 5: Water used in excess of 66,250 cubic feet per month is charged at two and one-half (2.5) times the normal quantitative rate.

l. Fast Food: High Volume.

1. Tier 1: Water used under 8,400 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 8,400 cubic feet but under 12,600 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 12,600 cubic feet but under 16,800 per month is charged at one and one-half (1.5) times the normal quantitative rate.
4. Tier 4: Water used in excess of 16,800 cubic feet but under 21,000 cubic feet per month is charged at two (2) times the normal quantitative rate.
5. Tier 5: Water used in excess of 21,000 per month is charged at two and one-half (2.5) times the normal quantitative rate.

m. Fast Food: Small.

1. Tier 1: Water used under 1,700 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 1,700 cubic feet but under 2,550 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 2,550 cubic feet but under 3,400 per month is charged at one and one-half (1.5) times the normal quantitative rate.
4. Tier 4: Water used in excess of 3,400 cubic feet but under 4,250 cubic feet per month is charged at two (2) times the normal quantitative rate.
5. Tier 5: Water used in excess of 4,250 cubic feet per month is charged at two and one-half (2.5) times the normal quantitative rate.

n. Department Store.

1. Tier 1: Water used under 28,250 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 28,250 cubic feet but under 42,400 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 42,400 cubic feet but under 56,500 per month is charged at one and one-half (1.5) times the normal quantitative rate.
4. Tier 4: Water used in excess of 56,500 cubic feet but under 70,650 cubic feet per month is charged at two (2) times the normal quantitative rate.
5. Tier 5: Water used in excess of 70,650 cubic feet per month is charged at two and one-half (2.5) times the normal quantitative rate.

o. Commercial Small.

1. Tier 1: Water used under 1,000 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 1,000 cubic feet but under 1,500 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 1,500 cubic feet but under 2,000 per month is charged at one and one-half (1.5) times the normal quantitative rate.
4. Tier 4: Water used in excess of 2,000 cubic feet but under 2,500 cubic feet per month is charged at two (2) times the normal quantitative rate.
5. Tier 5: Water used in excess of 2,500 cubic feet per month is charged at two and one-half (2.5) times the normal quantitative rate.

p. Commercial Large.

1. Tier 1: Water used under 9,150 cubic feet per month is charged at the normal quantitative rate.
2. Tier 2: Water used in excess of 9,150 cubic feet but under 13,750 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
3. Tier 3: Water used in excess of 13,750 cubic feet but under 18,300 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.

4. Tier 4: Water used in excess of 18,300 cubic feet but under 22,900 cubic feet per month is charged at two (2) times the normal quantitative rate.
  5. Tier 5: Water used in excess of 22,900 per month is charged at two and one-half (2.5) times the normal quantitative rate.
- q. Motels.
1. Tier 1: Water under 450 cubic feet per unit per month is charged at the normal quantitative rate.
  2. Tier 2: Water used in excess of 450 cubic feet but under 700 cubic feet per month is charged at one and one-quarter (1.25) times the normal quantitative rate.
  3. Tier 3: Water used in excess of 700 cubic feet but under 900 cubic feet per month is charged at one and one-half (1.5) times the normal quantitative rate.
  4. Tier 4: Water used in excess of 900 cubic feet but under 1,150 cubic feet per month is charged at two (2) times the normal quantitative rate.
  5. Tier 5: Water used in excess of 1,150 per month is charged at two and one-half (2.5) times the normal quantitative rate.
- r. Exemptions from the Water Conservation Rate Structure.
1. Car washes with properly operating recycling equipment.
  2. Hospitals.
  3. Facilities using reclaimed water for irrigation of landscape.
- s. Water Conservation Rate Structure for Failing to Connect to the City's Reclaimed Water System. Commercial water customers whose property line is located within a reasonable distance from the City's reclaimed water system that fail to connect to the aforementioned system shall be charged a water conservation rate of four (4) times the normal quantitative rate.

SECTION 4. This Resolution shall be effective when adopted and shall apply to all rates and charges billed on or after November 1, 1991.

SECTION 5. The City Council finds pursuant to the report of the Director of Community Development that this is not a project which has a potential for resulting in physical changes to the environment in that the water system and services are ongoing and the effect of this resolution and Resolution No. 91-13 is to reduce water production and use to less than that existing prior to the adoption of Resolution No. 91-13. In addition this finding is retroactively applied to the adoption of Resolution No. 91-13.

SECTION 6. The City Clerk finds that this Resolution was given a second reading and adopted on the 22nd of October, 1991, and entered into the minutes of said meeting.

SECTION 7. The City Clerk shall certify to the adoption of this Resolution. The City Council finds that there are no newspapers of general circulation both published and circulated within the city, and in compliance with Section 376 of the California Water Code directs the City Clerk to cause said Resolution within ten (10) days after passage to be posted in at least three (3) public places within the city as now established by Ordinance. This Resolution shall take effect on November 1, 1991.

Resolution No. 91-13 adopted and approved October 22, 1991.

**BUSINESS WATER CONSERVATION PLAN**

Date: \_\_\_\_\_

Name of Business: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Address: \_\_\_\_\_

Street

City

State

Zip Code

Mailing Address (If Different From Above)

Address: \_\_\_\_\_

Street

City

State

Zip Code

Type of Business: \_\_\_\_\_

Contact Person: \_\_\_\_\_ Title \_\_\_\_\_

Number of Employees: \_\_\_\_\_

Normal Hours of Operation: Days \_\_\_\_\_ Hours \_\_\_\_\_

Building Size: \_\_\_\_\_ square feet

Average Bi-Monthly Water Consumption \_\_\_\_\_ hcf

Domestic Water Service Connections

Number of Domestic Water Service(s): \_\_\_\_\_

Meter Location: \_\_\_\_\_ Size \_\_\_\_\_

Meter Location: \_\_\_\_\_ Size \_\_\_\_\_

Meter Location: \_\_\_\_\_ Size \_\_\_\_\_

(Attach additional sheet with water meter location and size if served by more than three domestic services.)

Fire Protection Water Service Connections

Number of Fire Protection Water Service(s): \_\_\_\_\_

Meter Location: \_\_\_\_\_ Size \_\_\_\_\_

Meter Location: \_\_\_\_\_ Size \_\_\_\_\_

Meter Location: \_\_\_\_\_ Size \_\_\_\_\_

(Attach additional sheet with water meter location and size if served by more than three domestic services.)

Irrigation Water Service Connections

Number of Domestic Water Service(s): \_\_\_\_\_

Meter Location: \_\_\_\_\_ Size \_\_\_\_\_

Meter Location: \_\_\_\_\_ Size \_\_\_\_\_

Meter Location: \_\_\_\_\_ Size \_\_\_\_\_

(Attach additional sheet with water meter location and size if served by more than three domestic services.)



Name of Business: \_\_\_\_\_

**WATER USE SURVEY**

**INDOOR WATER USE**

Water Source	Number	Gallons per Minute Flow	Average Frequency of Use	Daily Use (Gallons)
Toilets				
Urinals				
Restroom Faucets				
Kitchen Faucets				
Shower				
Refrigeration				
Ice Maker				
Other				
				<b>TOTAL INDOOR USE</b>

**OUTDOOR WATER USE**

Water Source	Number <sup>4</sup>	Gallons per Minute Flow	Minutes in Use	Gallons per Use	Weekly Use	Average Use per Week
Irrigation <sup>5</sup>						
Hose Bib						
Other						
<b>OUTDOOR USE TOTAL</b>						

<sup>4</sup>Number of Sprinkler Heads in Irrigation System

<sup>5</sup>Automatic Sprinkler System



Name of Business: \_\_\_\_\_

**ESTIMATED WATER CONSERVATION SAVINGS**

**INDOOR WATER CONSERVATION SAVINGS**

Water Source	Estimated Savings per Use (Gallons)	Estimated Frequency of Use	Previous Daily Average Use <sup>6</sup>	Estimated Total Savings	New Average Daily Use
Toilets					
Urinals					
Restroom Faucets					
Kitchen Faucets					
Shower					
Refrigeration					
Ice Maker					
Other					
<b>TOTAL INDOOR USE</b>					

**OUTDOOR WATER CONSERVATION SAVINGS**

Water Source	Estimated Savings per Use (Gallons)	Proposed Frequency of Use	Previous Average Weekly Use <sup>7</sup>	Estimated Total Savings	New Average Weekly Use
Irrigation <sup>8</sup>					
Hose Bib					
Other					
<b>OUTDOOR USE TOTAL</b>					

<sup>6</sup>From Water Use Survey

<sup>7</sup>From Water Use Survey

<sup>8</sup>Automatic Sprinkler System

Name of Business: \_\_\_\_\_

**WATER CONSERVATION SAVINGS SUMMARY**

**CONSERVATION GOAL**

	<b>Daily Use</b>	<b>X</b>	<b>Days of Operation</b>	<b>=</b>	<b>Weekly Use</b>
Indoors		X		=	
Outdoors		X		=	
<b>TOTAL WATER SAVINGS</b>					
					X 8 Weeks
<b>ESTIMATED CONSERVATION GOAL IN GALLONS</b>					
Divide by Number of Gallons in one Billing Unit					, 748
<b>TOTAL BI-MONTHLY CONSERVATION GOAL</b>					hcf



**City of Lakewood  
Department of Water Resources  
Request for Exemption from Water Use Restrictions**

ACCOUNT #:	DATE:		
NAME:			
TELEPHONE:	DAY	EVENING	
SERVICE ADDRESS:			
	Street	City	Zip Code
BILLING ADDRESS:			
	Street	City	Zip Code

A customer may apply for relief from the provisions in the City of Lakewood Water Conservation Ordinance 91-3. No relief shall be granted without proof of reasonable inability to comply with the provisions in the ordinance, proof that alternative conservation measures have been adopted by the customer, or proof that the water use restrictions would provide substantial hardship on the customer outweighing the benefits of water conservation. Commercial customers must submit a water conservation plan with this request.

The customer shall complete this form and return it to the **CITY OF LAKEWOOD DEPARTMENT OF WATER RESOURCES, 5050 N. Clark Avenue, Lakewood, CA 90712**. The decision of the Director of Water Resources shall be rendered within fifteen (15) days after the receipt of the request for exemption. The decision of the Director of Water Resources may be appealed by filing with the City Clerk within thirty (30) days after receipt of said decision.

Please complete the following information as thoroughly as possible. Failure to provide necessary information could result in automatic denial of your request.

I am requesting an exemption from the above mentioned water use restriction(s) for the following reason(s):

**Type of exemption from improper water use restrictions:**

- Washing Down Driveway 7511.1c.1 LMC
- Washing Down Sidewalk 7511.1c.1 LMC
- Washing Down Parking Lots 7511.1c.1 LMC
- Washing Down Building Exterior 7511.1c.1 LMC
- Washing Down Streets and Gutters 7511.1c.1 LMC
- Washing Vehicles without Shut Off Valve 7511.1c.2 LMC
- Washing Equipment without Shut Off Valve 7511.1c.2 LMC
- Non-recirculating Fountains 7511.1c.3 LMC
- Unrepaired Plumbing Leak 7511.1c.5 LMC
- Improper Irrigation 7511.1c Water Run-off 7511.1c.7 LMC.6 LMC

**I am requesting an exemption from the above mentioned water use restriction(s) for the following reason(s):**

- In the process of testing, adjusting or repairing sprinklers.
- Health condition that limits ability to conform to water use restrictions. (Please attach a statement from a physician.)
- Hosing new paved surface for the purpose of curing for up to one month after paving.
- Hosing hardscape due to unsanitary condition.
- Dust control due to construction.
- Public health and safety.
- Police, fire or other similar emergency service.
- Other:



**ATTACHMENT I**

SAMPLE  
RESOLUTION NO.

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF  
LAKEWOOD DECLARING THE VOLUNTARY PHASE OF THE  
WATER CONSERVATION PLAN.

WHEREAS, the City Council of the City of Lakewood has adopted conservation measures including Ordinance 91-3; and

WHEREAS, California is still experiencing drought conditions which necessitate further implementation of the water conservation measures adopted by Ordinance No. 91-3; and

WHEREAS, the City Council, after considering the provisions of its Water Conservation Plan, the voluntary phase of the Plan should be declared at this time, making it necessary to conserve up to ten percent (10%) of the City's water supply.

NOW, THEREFORE, BY THE CITY COUNCIL OF THE CITY OF LAKEWOOD DOES HEREBY RESOLVE AS FOLLOWS:

Section 1. The City Council of the city of Lakewood does hereby determine that the Water Conservation Plan should be implemented by declaring voluntary phase Water Conservation Plan measures in accordance with and subject to the provisions of Ordinance 91-3 as amended.

Section 2. This Resolution shall become effective upon adoption and remain in effect until such time as the City Council determines that further phases of the mandatory Water Conservation Plan are necessary or until such time that the City Council shall review the water supply conditions to determine the need for water conservation.

ADOPTED AND APPROVED THIS \_\_\_ DAY OF \_\_\_\_\_, 19\_\_.

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Clerk